Submission Cover Sheet

Sub no: **458**

West Gate Tunnel Project IAC

Request to be heard?: Yes

Full Name: Samantha McArthur

Organisation: Maribyrnong Truck Action Group (MTAG) Inc.

Address: PO Box 215

Yarraville 3013

Affected property:

Attachment: WGTP_EES__MTA

Comments: See attached submission document.

MARIBYRNONG TRUCK ACTION GROUP

MTAG

Less trucks for the inner west

Maribyrnong Truck Action Group

Submission: The West Gate Tunnel Project EES

Contents

1. MTAG BACKGROUND

The Maribyrnong Truck Action Group (MTAG) is a non-political, unfunded community lobby group of residents advocating for a reduction in trucks on residential streets in the City of Maribyrnong. Our common interest is a desire to improve the quality of life for our community.

The City of Maribyrnong is a toxic hotspot in Melbourne: the world's most liveable city. The problem is trucks — 21,000 of them pass through Melbourne's inner west every day. They emit diesel pollution over our houses, our schools, our kindergartens and childcare centres. And they make our streets unsafe for other road users.

The truck problem originates at the Port of Melbourne, Australia's largest container terminal. The City of Maribyrnong is situated between the port and distribution warehouses and container yards further to the west. Every day, thousands of trucks use narrow residential streets — designed in the 1800s — to transport containers back and forth between the port and the distribution warehouses and container yards. The trucks take shortcuts through the inner west to find shorter routes, or to avoid tolls and congestion on the freeways. These short-haul trucks are often the oldest and dirtiest trucks on our roads.

Our community has a justifiable fear of air pollution. The World Health Organization (WHO) now classifies diesel exhaust as a class one carcinogen — as toxic as asbestos and tobacco smoke. It causes respiratory problems and asthma, and can inhibit early childhood lung development. It also contributes to heart disease and obesity. The pollution is visible everywhere: on homes, footpaths, and shop windows. But even more concerning are the harmful ultrafine particles that cannot be seen.

Noise is also a huge issue for residents along the roads used by trucks. The noise they generate is way above the VicRoads standards for freeways, and can lead to broken sleep and a range of health issues, including heart disease, mental illness and a shortened life span.

The community is also understandably concerned about the safety risks for road users — such as pedestrians, cyclists, and drivers — who are sharing 19th century roads with massive trucks. And recent changes that allow even bigger trucks on streets through Maribyrnong have escalated these concerns.

MTAG is making the following submission in relation to the West Gate Tunnel Project Environmental Effects Statement, on behalf of the residents in Maribyrnong who are impacted by truck and freight movements within and through the municipality. In making this submission, MTAG has focused mostly on issues related to truck and freight traffic, and its impact on residents in the City of Maribyrnong.

2. WEST GATE TUNNEL PROJECT BACKGROUND

The West Gate Tunnel Project is a major new freeway project designed to relieve traffic pressure on the Monash Freeway, CityLink and the West Gate Freeway, reduce the city's reliance on the West Gate Bridge, provide a direct freight link to the Port of Melbourne, and remove significant volumes of trucks from residential areas in the inner west.

The project would provide twin tunnels under Yarraville, in Melbourne's inner west, and an elevated motorway connecting the West Gate Freeway with the Port of Melbourne, CityLink and the western edge of the central city, delivering an alternative river crossing to the West Gate Bridge.

One of the main benefits offered by the project is the removal of around 9,300 trucks per day from residential roads in the inner west. In particular, the project's tunnels would divert a majority of the container trucks currently using Francis Street and Somerville Road, while the Hyde Street ramps would divert petrol tanker trucks from Francis Street.

By redistributing the growing number of heavy vehicles away from these roads, these residential areas would be safer, quieter and less polluted, making them more amenable places to live. Removing this traffic would also:

- Relieve congestion on inner western streets, allowing for improvements in noise levels and air quality;
- Improve access to local services and facilities, such as parks, shops, schools and recreational facilities;
- Create more opportunities for walking and cycling connections;
- Help to make local commercial precincts more appealing destinations for customers, as well as for new businesses; and
- Support urban renewal projects that would assist in creating more compact, accessible communities.

Despite these potential benefits, there are some localised negative impacts that will result from the project in its current form, including increases in the number of heavy vehicles on some residential roads. The project has not been designed to adequately mitigate these negative impacts and the assessment methodology greatly underestimates the effects these will have on the community.

3. PROBLEMS WITH THE ASSESSMENT METHODOLOGY

This Environmental Effects Statement (EES) presents a number of major concerns for MTAG, which we find unacceptable:

3.1 Health impacts:

Residents in the City of Maribyrnong have been experiencing some of Victoria's worst health outcomes for decades because of freight movement in and out of the Port of Melbourne. Environmental injustice is the best term to describe what we have been enduring for more than two decades — as close to 100 million trucks[1] have rumbled down our residential streets.

3.1.1 Disregard for existing health concerns

The EES implies that only residents are concerned, when the reality is that health professionals and air quality experts have also been voicing their concerns for years. MTAG has had air experts, including some of Australia's leading respiratory experts, speaking at forums and rallies over the years. In 2014, Environmental Justice Australia listed Yarraville in Australia's top 12 toxic hotspots for air pollution.[2]

In 2016, the Asthma Foundation of Victoria began a new project called 'Puffing through the pollution' to support residents of Yarraville and the Maribyrnong LGA to better control and manage their asthma.[3]

The impacts of these trucks have had a devastating impact on the communities of Footscray, Seddon, Kingsville and Yarraville, both in terms of amenity loss and the impacts on our health. As these statistics demonstrate:

- Maribyrnong has the highest hospital admissions for respiratory ailments in Victoria for young people aged 3 to 19 years. The rate is 70% above the state average[4] and up to 171% above the Australian average.[5]
- Adolescent asthma rates in the City of Maribyrnong are 50% higher than the Victorian average.[6]
- Early death from lung cancer in the City of Maribyrnong is amongst the highest in Australia. We experience an age standardised rate of 49.4 when the Greater Melbourne rate is 23.3.[7]

[1] VicRoads Inner West Truck Count Results
[2] *Clearing the Air: Why Australia Urgently Needs Effective National Air Pollution Laws*. Environmental Justice Australia (2014)
[3] The Asthma Foundation Victoria, Facebook post
[4] *Yarraville trucks linked to high asthma*, The Age Newspaper, 2015
[5] Australian Commission on Safety and Quality in Health Care data, 2015
[6] Department of Education and Early Childhood Development, Adolescent Community Profile, City of Maribyrnong 2010
[7] Tolhurst, P., Lindberg, R., Calder, R., & de Courten, M. (2016). Australia's health tracker 2016: A report card on preventable chronic diseases, conditions and their risk factors: Tracking progress for a healthier Australia by 2025.

Residents of the City of Maribyrnong have been waving a red flag at government after government, demanding action to protect the health of our families and the amenity of our neighbourhood. As we have watched government inaction over our plight, we have also watched in distress as international health and environment groups have raised the alarm on the health impacts of diesel exhaust on human health.

Studies have shown that communities living near ports have elevated rates of oropharyngeal cancer and certain lung cancers due to air pollution. People who breathe high levels of traffic-related air pollution have a higher rate of cardiovascular disease, asthma and death, as well as reduced lung function.[8] There is no reason why these studies would not apply to our situation, especially in the absence of clean air initiatives such as a clean truck program, and onshore power for idling ships. Health problems in our community are consistent with heavy exposure to air pollution, with significant spikes in respiratory-related conditions such as asthma and early death from lung cancer.[9]

3.1.2 Disregard for the health impacts of diesel exhaust

The EES health report fails to acknowledge the serious health impacts of diesel particulates and accumulated exposure over a lifetime. General traffic air pollution comes from many different sources including dust, tyres and brake linings. However, diesel particulates act as chemical hitchhikers, containing a dangerous cocktail of chemical compounds, including some of the most carcinogenic chemicals ever discovered. These particulates are much more toxic to human health than other traffic related particulates.

In 2012, WHO declared diesel exhaust to be a carcinogen, with the US Environmental Protection Agency (EPA) declaring, "There is no safe exposure level to diesel exhaust". WHO rates diesel exhaust as a class one carcinogen. It has the same classification as asbestos, plutonium, tobacco smoke, mustard gas and formaldehyde.

In 2001, the Victorian EPA, acting on community demands, installed air pollution monitoring equipment on Francis Street, Yarraville. Francis Street experiences more than 1.5 million truck movements per year. It is considered 'ground zero' in the community's fight for environmental justice. It is a residential street, lined with houses, and includes the site of the Yarraville Community Centre (formerly Yarraville State School, established in 1866), which houses an occasional childcare centre. The Norfolk Street Kindergarten and Child Care Centre, and Wembley Primary School are also in very close proximity.

The Francis Street EPA report[10] found alarming levels of particle emissions, with many breaches of the intervention levels designed to protect human health. Following the EPA report, a night and weekend curfew was introduced — the first truck curfew in Melbourne's west. The EPA then revisited Francis Street with a monitoring lab 12 months later to measure how effective the curfews were at reducing pollution. Their follow up report found that the curfew made negligible difference — in fact, it recorded

[8] Hricko, A., 2006, *Guest Editorial: Ships, Trucks, and Trains: Effects of Goods Movement on Environmental Health*, U.S. National Library of Medicine, Environmental Health Perspectives,
[9] Australian Atlas of Healthcare Variation
[10] Victorian EPA Publication #895

Melbourne's highest levels of nitrogen dioxide, a particularly deadly component of diesel exhaust. Not surprising when the vast majority of trucks are using the streets during daytime hours when the curfew was not in effect. It was business as usual for Victoria's freight industry, despite vehicle emissions causing 40% more deaths than the road toll.[11]

3.1.3 Lung cancer risks played down

The EES health report states that the association between particulate matter and lung cancer is 'suggestive'. However, it has been known to be 'causal' for a number of years now.[12] It is misleading to include lung cancer in the short-term respiratory mortality category. Lung cancer takes many years to develop — it's hardly a short-term impact.

MTAG are also concerned that the health report does not reflect the most recent evidence. For example, lung cancer risks have been downplayed, with estimates from 1996 used. Additionally, the latest data available in the Australian Health Policy Collaboration's (AHPC) Health Tracker[13] has not been included. These newer figures show alarming lung cancer rates for Kingsville, Seddon and Yarraville of 49.4 (age standardised rates), compared to greater Melbourne's rates of 23.3.

3.1.4 Misleading asthma statistics

MTAG are concerned about anomalies in the asthma prevalence reported in the health report. Some sections on asthma only consider adult asthma-related hospital admissions and omit children's. Other sections in the appendices refer to children, but only aged five and above. This data is then used to extrapolate the risk to childcare centres, where most children are aged 1 to 5 years. The report does not appear to use Health Atlas data and concludes that asthma incidence is consistent with the national rate. This is incorrect and a review of statistics on asthma in the Health Atlas would verify this.

3.1.5 No mention of mitigation in health report

The health report does not go beyond quantifying health impacts and there is no consideration of appropriate and effective pollution mitigation strategies. Mitigation strategies that should have been considered from a health perspective include tunnel filtration, pollution barriers and buffers to sensitive land use.

3.1.6 No mention of buffers to sensitive land use

It is of concern to MTAG that the West Gate Tunnel Project does not have to comply with any buffer zones in regard to sensitive land use. Victoria does not have any restrictions on sensitive land uses such as schools, kindergartens and childcare centres.

Comparatively, the US EPA employs a range of measures to protect children at schools and kindergartens.[14] This includes recommending 'no idling' policies, and ensuring there is a buffer between major roads and schools. The Los Angeles Unified School District recommends that new schools are not built within 500 feet of a major

[11] University of Melbourne Energy Institute, Vehicle emissions cause 40% more deaths than road toll, 2017
[12] US National Library of Medicine, *Outdoor particulate matter exposure and lung cancer: a systematic review and meta-analysis*
[13] Victoria University, *Australian Health Policy Collaboration*
[14] Best Practices for Reducing Near Road Air Pollution Exposure at Schools, US EPA, 2015

transportation corridor. The Californian Department of Education recommends a buffer of 457 metres from major roads to schools.[15]

MTAG welcomes the possibility that recently announced truck bans associated with this project may see a significant reduction in trucks operating in close proximity to some of our schools and other child-focused activity centres. Currently some of these facilities have only a footpath width buffer from trucks, which is a truly dangerous situation.

However, MTAG is concerned that approval has been given for a new childcare centre to be built on the corner of Francis Street and Williamstown Road in Yarraville. Without truck bans on Williamstown Road, children using this facility will be at high risk of health impacts from diesel exhaust with a buffer of mere metres from the trucks. This will also increase air pollution and health risks for kids at Yarraville West Primary School.

MTAG also has concerns regarding air pollution impacts on the Emma McLean kindergarten in Spotswood. The West Gate Tunnel Project must take measures to protect the health of these children and limit their exposure to diesel exhaust by taking measures to mitigate health impacts, either through relocation or installation of appropriate barrier and air filtration measures.

3.1.7 Failure to take proposed childcare centre into account

The EES makes no mention of the approved childcare centre on the corner of Williamstown Road and Francis Street. This childcare centre was approved by VCAT recently, despite arguments regarding air pollution and health concerns by the Maribyrnong Council and VicRoads. MTAG has received advice that the centre will proceed as planned. By 2031, more than 5,000 trucks will be driving just metres from the centre and its rooftop garden. This childcare centre will contain a buffer that is the width of the footpath.

The Air Quality Technical Report G (page 156) shows pollution levels along the length of Francis Street, with the 'with project' scenario in both 2022 and 2031. See Figure 1 for the 2031 graph. Both 2022 and 2031 show a large pollution peak right at this intersection. Children's health at this centre must be taken into consideration in the planning of this project.

[15] California Department of Education, *School Site Selection and Approval Guide*

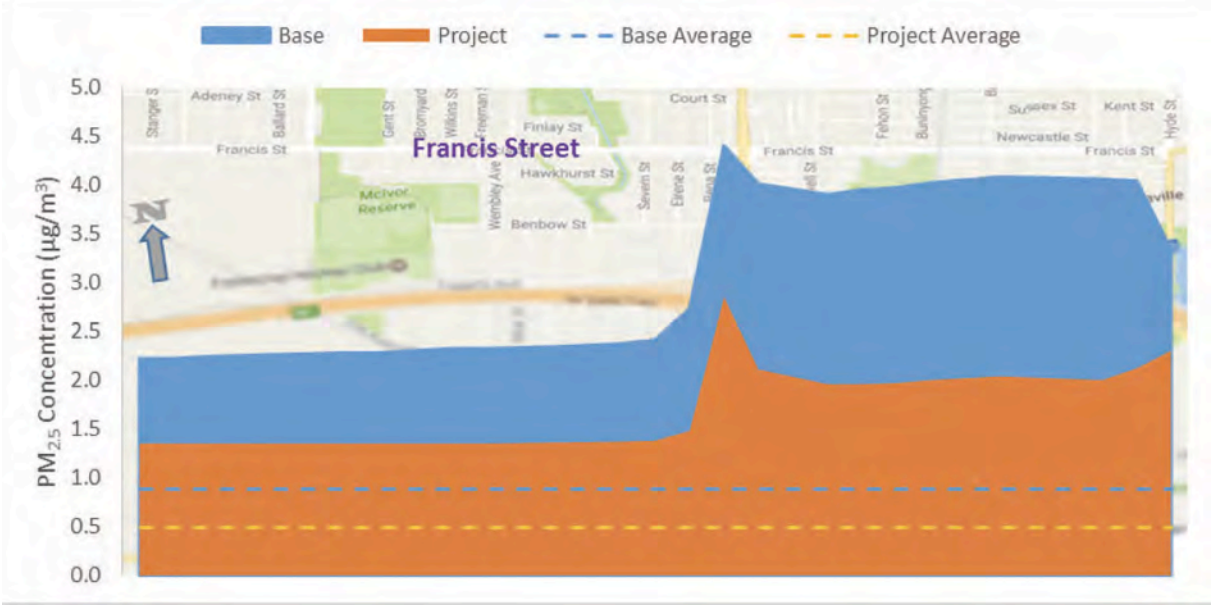

Figure 1. Plot of predicted maximum and average $PM_{2.5}$ concentrations along Francis Street for the 2031 base and project scenarios. The maximum $PM_{2.5}$ concentrations of 4.4 µg/m^3 and 2.9 µg/m^3 (without background for both the base and project scenarios) occur at the Francis Street and Williamstown Road intersection. Source: Air Quality Technical Report G, page 157.

3.1.8 Health equity

The EES Technical Report J, Human Health (page 173) states that no impacts have been identified that have the potential to be unfairly or unequally distributed within the community as a result of this project. However, when some residential streets will experience an increase in truck numbers, this statement is clearly false – see section 3.5.

3.1.9 Noise

Noise that we experience from the millions of trucks on our residential street each year also impacts our health. WHO regards traffic noise health impacts second only to those from air pollution[16]. Traffic noise impacts directly on human health, and is linked to cardiovascular disease, cognitive impairment in children; sleep disturbance, tinnitus, and annoyance/diminished quality of life.

The World Health Organisation guidelines for night noise recommends an annual average noise level of less than 40 dB(A) outside bedrooms to prevent adverse health effects, and less than 35 dB(A) in classrooms to allow good teaching and learning conditions.[17] In 2013, the EPA undertook noise monitoring on Francis Street for 12 months. The average noise level on a weekday was found to be 76 db(A). Even during Sunday curfew hours the average noise level was 71.1 dB(A).[18] This is almost 50% higher than the VicRoads noise limit at which the installation of noise walls would be required. In 2014, the EPA carried out noise monitoring on Moore Street and Somerville Road. The noise levels on those streets measured at around 70 db(A).

Section 3.4.2.5 identifies that: *"The community has raised concerns about sleep arousal due*

[16] World Health Organization, *Burden of Disease of Environmental Noise*, press release and report
[17] World Health Organisation Data and Statistics on Noise Pollution, 1999, http://www.euro.who.int/en/health-topics/environment-and-health/noise/data-and-statistics
[18] EPA Victoria, Francis Street monitoring program – Final report, December 2013 http://www.epa.vic.gov.au/~/media/Publications/1546%201.pdf

to individual traffic noise events (short bursts of sound such as truck engine brakes or motorbikes)". This section goes on to say that the Victorian Government "… *has limited control over individual vehicle noise emissions and the behaviour of individual motorists that may lead to loud noise events throughout the night*." However, Government has a responsibility to ensure wider and long-term strategies are implemented as part of a project such as this.

The West Gate Tunnel Project is projected to decrease noise levels on many roads in the City of Maribyrnong. MTAG welcomes this reduction but has concerns for residents that will experience an increase in truck-related noise as a result of this project.

There is a lack of consistency with the assessments for noise abatement. For example, in McIvor Reserve, noise attenuation will be provided to the hockey club but not for the directly neighbouring Yarraville Glory soccer club. There also aren't any plans for noise abatement at the Bradmill precinct where noise levels are expected to be at 70dB(A) with the project.

Of further concern to MTAG is that the EES contains not one strategy to minimise noise impacts on the community during construction, particularly in relation to night time and weekend truck movements. This is concerning, given the projected duration construction.

3.2 Air quality:

MTAG believe there are a number of problems with the air quality modelling and assumptions made in the Air Quality Technical Report.

3.2.1 Inaccurate and misleading air quality data and modelling

Chapter 20.1.1 states: *"The existing air quality around the proposed West Gate Tunnel Project location is generally good and typical of air quality in major Australian cities"*. This is concluded from data from the EPA's permanent monitoring station located in Hansen Reserve, Footscray. Not only is this monitor located outside of the West Gate Tunnel Project area; it is 300 metres from a major truck route. In contrast, the West Gate Tunnel Project area has major truck routes running right through it, carrying 21,000 trucks a day. This is in addition to the large numbers of trucks and commuter traffic on the West Gate Freeway. Hansen Reserve air quality might be indicative of 'background levels', but it cannot be used to conclude that air quality in the project area is 'good'.

The air quality in the City of Maribyrnong is not good, and neither is the air quality in the project area. As mentioned previously, we have poor health statistics around respiratory health and lung cancer; we are one of Australia's top 12 air pollution hotspots; and air monitoring data shows some of Melbourne's highest levels of $PM_{2.5}$ and nitrogen dioxide.

3.2.2 Out-of-date background monitoring

MTAG also has concerns about when this data from the Footscray EPA monitor was collected (2009–2013). The air quality report not only assumes that this old data is

indicative of background levels today, but also that it's what the background levels will be in 2022 and 2031. Surely background levels have increased since 2009–2013 and will increase further over the next decade? MTAG question the accuracy of all of the pollution modelling based on this monitor, with the assumption that the true pollution impacts have been underestimated.

3.2.3 Lack of accurate roadside monitoring data in project area

The report has used very little roadside monitoring, which would provide a true picture of the existing pollution levels experienced by residents living on a residential freight route such as Francis Street, Somerville Road, Williamstown Road, Moore Street or Buckley Street in the City of Maribyrnong. Most background data comes from the permanent EPA monitoring station in Hansen Reserve in Footscray.

Temporary monitoring stations that have been installed by Transurban in Yarraville Gardens and the Goods Yard in Yarraville have been in operation for less than 12 months, rendering their data unusable for this purpose. This is extremely disappointing when signs attached to these monitoring stations state: "*An air monitoring program is underway to collect important information in a range of locations throughout Melbourne's west to inform planning and development of the project*".[19] Clearly, this data is not being used to inform this EES. MTAG believes that this lack of data does not allow the EES to give an accurate assessment of the existing pollution impacts, and therefore gives an unclear picture of the project's impacts.

3.2.4 An assumption that air quality standards protect human health

The EES Air Quality Technical Report claims that air quality in the City of Maribyrnong will generally meet standards, with the exception of 2031 when many streets will reach intervention levels. There is no information on what action will be taken when air quality exceeds the standards, which is concerning considering Infrastructure Victoria has predicted that the port will not reach capacity until 2055. There is an assumption that air quality levels at the standards or slightly beyond is acceptable for the surrounding community.

Medical experts including the Australian Medical Association and the WHO report that air quality standards do not protect human health.[20] The Australian Medical Association made the recommendation in their submission to the 2013 Senate Inquiry into Air Pollution: "*Air quality management policy should be based on reducing human exposure to air pollution, rather than simply complying with air quality standards. This requires linking air monitoring into pollutant reduction targets*".[21]

Standards and exceedances do not take into account the chemical composition and toxicity of the particulate matter. Standards also do not take into account accumulated exposure to these chemicals over a lifetime.

[19] https://www.flickr.com/photos/124737883@N05/35272483060/in/dateposted-public/
[20] World Health Organization. (2006). Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide: global update 2005.
[21] Australian Medical Association, *Inquiry into the impacts on health of air quality in Australia*

In 2014, Associate Professor Adrien Barnett of Queensland University of Technology quantified the number of deaths that would occur in Sydney, Melbourne and Brisbane if particulate matter levels rose to the Air NEPM standards. He found that this would cause the deaths of an additional 6,000 people each year and hospitalise a further 20,700 people per year.[22] Standards cannot be seen as a licence to pollute. The focus must be on exposure reduction, not the current practice that it's acceptable to pollute to the standards plus a little bit beyond.

3.2.5 Exclusion of ultrafine particles

MTAG have concerns that the air quality report contains no mention of ultrafine particles — PM_1's and smaller – only including PM_{10} and $PM_{2.5}$. Diesel exhaust can take the form of individual particles of a size smaller than PM_1. These ultrafine particles can easily penetrate deep into the lungs. The rough surface of these particles makes it easy for them to bind with other toxins in the environment. These are the particles that cause the most harm to human health, penetrating deep into our lungs and translocating to other parts of our body via the bloodstream. Ultrafine particles form a large component of diesel exhaust, with diesel vehicles — particularly trucks — producing a far greater amount of ultrafine particles than petrol vehicles.[23]

There is enough current scientific evidence to demonstrate that ultrafine particles negatively impact health. As the world becomes more aware of the dangers of air pollution, this road project must take a precautionary approach to future-proofing surrounding communities. With exposure to ultrafine particles recognised internationally as a major health risk, the project must undertake baseline monitoring of ultrafine particles. This is especially important near the ventilation stacks and West Gate Freeway.

3.3 Filtration:

The air quality report on filtration displays a lack of evidence-based research, and it is difficult to not to see the intention as deliberately trying to mislead the public.

3.3.1 Benefits of filtration played down

The EES states that "*modelling for particulate matter and NO_2 from the tunnel ventilation system predicts that peak concentrations of these pollutants would mostly meet applicable air quality standards*." The words 'mostly meet' are hardly going to fill the community with confidence, particularly when not only do existing standards fail to protect our health, they also fail to take ultrafine particles into account.

The EES also states, *"the tunnel ventilation structures have been optimised to ensure that air quality impacts on the receiving environment are minimised".* This is not true. Air quality impacts on the receiving environment are not minimised in the absence of a filtration

[22] Adrian G. Barnett, Australian and New Zealand Journal of Public Health, '*It's safe to say there is no safe level of air pollution'* 2014

[23] Morawska, L., Moore, M. R., & Ristovski, Z. D. (2004). Health impacts of ultrafine particles: Health Impacts of Ultrafine Particles. *Report to the Australian Department of the Environment and Heritage*.

system that is able to remove a large proportion of the most harmful emissions coming out of the ventilation structures.

The EES implies that the contribution of the ventilation emissions to background emissions is so low that it's not worth removing and would not have significant health benefits. What the EES fails to consider is the nature and composition of what is coming out of the ventilation stacks. The ventilation emissions would be almost entirely made up of vehicle emissions and therefore are far more toxic than the equivalent amount of background particulate matter. Background particulate matter is primarily made up dust and salt spray — not carcinogenic particulates from combustion engines. Removing this ventilated particulate matter from the airshed means removing the pollution that is most harmful to human health.

Without a filtration system, this toxic particulate matter will enter the airshed and inevitably someone, somewhere, will breathe it in, no matter how much it is dispersed. A tunnel provides a unique opportunity to remove these particulates from the airshed — one that an open road doesn't.

Tunnel filtration would undoubtedly provide significant health benefits, even if it were a comparatively small amount of pollution being removed. Professor Louis Irving from the Royal Melbourne Hospital appeared as an expert witness to the East West Link Project Assessment Committee. According to the Assessment Committee Report, the committee accepted his position that even 68% efficiency in particulate matter removal would lead to an acceptable improvement in air quality, and a reduction in potential health impacts in the surrounding community.

The East West Link assessment panel also heard from several submitters, such as Dr Paul Torre of the EPA, that there is strong evidence from international studies that any increase in air pollutants will increase health risks. This is backed up by many studies, both international and Australian, including a 2016 review into the health impacts of pollution by the University of Sydney's Woolcock Institute of Medical Research. The study found that any source of particulate matter is detrimental to human health and that any reduction in exposure to particulate matter is likely to be beneficial to health. The report recommends immediate efforts to reduce particulate matter pollution in the air around us.[24]

In debating whether tunnel filtration was required or not, the East West Link Assessment Committee reported differing opinions on whether East West Link was predicted to carry high numbers of heavy vehicles. The Linking Melbourne Authority had stated that the percentage of heavy vehicles using the tunnels was not expected to be high, and therefore pollution control equipment would not be required. The committee disputed this stating, "*As the project is a proposed freight solution, restricting traffic to commuter vehicles is not a viable option. This would suggest that the inclusion of pollution control equipment in the ventilation stacks should be considered*".

[24] Woolcock Institute of Medical Research, Centre for Air Quality and Health Research and Evaluation, *Review of the health impacts of emission sources, types and levels of particulate matter air pollution in ambient air in NSW,* 2015

There is absolutely no doubt that the West Gate Tunnel Project is a freight solution for Melbourne, specifically designed to service the Port of Melbourne, a port that is predicted to keep on growing until 2055.[25]

The joint submission to the review of Australia's Air Quality Guidelines from the Peter McCallum Cancer Centre and the Lung Foundation Australia, 'Clean Air. Less Cancer'[26], points out the failure of future road tunnel planning to consider filtration. The report recommends *"The use of filters/scrubbers on large point sources of emissions (this includes vent stacks of road tunnels, but would also apply to large industrial point sources). We note this area is likely to require additional research, with lessons to be learnt from successful and effective implementation in other countries."* The report summarises that *"overseas experience shows that public health interventions to limit fine particulate air pollution emissions have led to major improvements in air quality along with demonstrable benefits to human health."*

3.3.2 Failure to review current filtration technologies and efficiencies

The West Gate Tunnel Project Air Quality report displays a demonstrable failure to research current practices and engineering solutions to tunnel filtration. Nor does it review road tunnel filtration systems currently being installed and operated in overseas tunnels. Rather it is a regurgitation of comments from previous EES documents for other road projects, concentrating on old technologies and research — sometimes decades old.

The EES attempts to downplay the efficiency of electrostatic precipitators to remove particulate matter, quoting a 70% efficiency rate from an 11-year-old EPA report.

MTAG contacted Heinz Aigner, Managing Director of Aigner, a leading tunnel filtration company supplying filtration systems for tunnels in Italy, Spain, France and Austria. He wrote, "*Efficiency is about 80-90% depending on airflow. Most of the particles are less than 1 µm. Efficiency for 0,5 µm is >80%".* The following table published in 'The Treatment of Air in Road Tunnels' by the French Tunnels Study Centre (CETU), supports this statement.[27] The EES air quality report also attempts to downplay the efficiency of electrostatic precipitators in removing NO_2, quoting an efficiency of 50%. However, Aigner told us they are now reaching efficiencies of more than 80%.

Size	Content (by weight)	Efficiency ECCO®
<2,5 µm	30 %	54 – 91 %
2,5 – 10 µm	60 %	94 – 99 %
>10 µm	10 %	>99 %

Table 1. Electrostatic filter performance according to particulate size. Source: http://aigner.at

[25] Infrastructure Victoria, Advice on Securing Victoria's Ports Capacity
[26] The Lung Foundation and Peter Mac, *Clean Air, Less Cancer,* 2015
[27] *The treatment of Air in Road Tunnels, State of the art of studies and works*, CETU,

The air quality report implies that filtration is only done overseas for in-tunnel visibility, failing to mention the Madrid Calle 30 bypass tunnels, which have the largest filtration system ever installed, specifically to protect the residents in the surrounding urban areas. Interestingly, the GHD peer review refers to this tunnel, refuting claims of Sydney Westconnex campaigners by quoting that the *"… installations initially operated for 20 hours out of 24 at full power. Today, they actually operate only a few hours a week*". When MTAG contacted Aigner, who installed nine of the 30 filtration systems in the Madrid tunnel, it was explained that they are turned on for one to two hours a day, during peak periods when air quality levels reach a certain limit. This is protecting the surrounding population when air quality levels are poor, not proving that the system isn't needed.

The tunnel operators reported that after five years of operation, the two systems in the Madrid tunnels installed by Norwegian company, CTA, showed overall particle removal efficiencies of 86% for PM_1, 91% for $PM_{2.5}$ and 90% for PM_{10}.

It is worth noting that Madrid is one of four major cities that have pledged to ban diesel vehicles by 2025. Due to extremely poor air quality, they've been forced to start taking air pollution seriously. It would be prudent of Melbourne to take preventative steps now, not wait until our air quality reaches such critically poor levels.

The EES also fails to mention the 3.7km Central-Wan Chai Bypass tunnel in Hong Kong, currently under construction.[28] It will incorporate both electrostatic precipitators and nitrogen dioxide removal equipment in its exhaust stacks, in order to reduce pollution outside the tunnel. The design is based on the systems successfully used in the Madrid Calle 30 bypass tunnels. Leighton's Asia is a major contractor for this project, responsible for the design, supply and installation of the air purification system. Documents show an 80% efficiency at NO_2 removal is expected, stating "*The ESP and NO_2 de-nitrification technologies are mature and have been applied in many tunnels worldwide. The use of such technologies in the Central–Wan Chai Bypass Tunnel will improve the tunnel air quality for the motorists and also the air quality of the northern shore of Hong Kong Island*".[29]

3.3.3 Misleading data from the M5 East Tunnel

The most serious example of misleading the public is the attempt to equate the efficiencies and costs of installing and running a tunnel filtration system in the West Gate Tunnel to Sydney's M5 East tunnel. The M5 East system reportedly cost AU$65 million.[30] This excessive cost was recognised from the outset, and included the cost of running the trial, a kilometre of extra tunnel, a massive 'display' surface filter station, and the cost of an unrelated NO_2 removal trial. The system was retrofitted, increasing costs considerably, as the tunnel was not initially designed to accommodate this equipment. It is also a complicated and unusual system, where in-tunnel air is drawn from one tunnel into the second tunnel and both tunnels are then vented through a ventilation stack located approximately 1 kilometre from the tunnels. This design also means that the operating costs are higher than they should be.

[28] Leighton Asia, Project Showcase
[29] Introducing Air Purification System in Road Tunnels
[30] ABC News, *Filtration plant for M5 east tunnel to be axed*, 2012

The cost of the M5 filtration system in no way represents the installation and operation cost of a properly designed filtration system incorporated into the design stage.

When MTAG questioned Heinz Aigner about the high cost of this filtration system, he responded, "It is impossible for a system to cost that much." He said that the nine plants they recently supplied in the Madrid Calle 30 tunnel cost 16.5 million Euros (AU$23.5 million). It has been suggested that in Australia, the misuse of data from the trial of filtration in the M5 East tunnel has led to a 25-fold overestimation of the actual cost of installing particle filtration equipment in a new tunnel. The information from Aigner would suggest that this is an accurate supposition.

The other misuse of data from the M5 trial is in quoting the low efficiencies of pollution removal achieved, and the subsequent excessive cost calculation for pollution removal per tonne. The M5 East system was found to have efficiencies for $PM_{2.5}$, PM_{10} and NO_2 of 69%, 70% and 55% respectively. The M5 East tunnel had a Filontrec system installed. Table 2 details the performance and efficiencies of the different systems installed in the Calle 30 Madrid tunnels, showing that the Filontec system has the lowest efficiency and poorest reliability compared to the other major companies. This table was sourced from a presentation delivered to a Chinese delegation by the company involved in the maintenance (but not the supply or installation) of the filtration equipment in the Calle 30 Madrid tunnel.

			Particle removal efficiency %		
	Strong Points	Weak Points	PM1	PM2.5	PM10
CTA	Uncomplicated installation Good efficiencies. Robust Little automation (means few motors and movable parts liable to break) Low maintenance cost	Point particle measurement method (ie non-continuous) poor handling from the control center	85.90	90.79	89.63
Aigner	Good efficiencies Good particle measurement method	Simplifiable installation (?) High number of failures (too many elements) High maintenance costs Too much automation	83.69	90.83	91.34
Panasonic	Medium efficiencies Hardiness in the electroestatic system Little automation (means few motors and movable parts liable to break) Medium maintenance costs	Point particle measurement method (means noncontinuous) High number of failures in waste recycling system poor spare parts and after-sales service (Japan)	79.84	80.83	81.23
Filtrontec	Medium efficiencies Hardiness in the electroestatic system Little automation (means few motors and movable parts liable to break) Medium maintenance costs	Point particle measurement method (ie. non-continuous) poor efficiency The equipment do not generate the expected solid waste	76.62	77.16	76.53

Table 2. Performance and efficiencies of filtration systems in Calle 30 Madrid tunnels.

The retrofit design would also have caused efficiencies in the M5 East tunnel to be lower than would be otherwise. The AMOG Consulting report on the M5 filtration trial recognised that the ESP's were significantly under capacity for the volume of air delivered to them and suggested that this was the reason for the poor efficiency and reliability.[31]

For this EES, why has a cost benefit analysis of the impacts of filtration on health impacts not been performed using the example of systems that have been proven successful? Why have pollution removal per tonne cost calculations only been provided on a system known to be excessively expensive and inefficient? Why is the EES only looking at one system that has been retrofitted, not implemented into the design stage? To imply that the

[31] Road and Maritime Services, NSW Government, *M5 East Tunnel Air Filtration Trail Evaluation*, 2012

costs of pollution removal in the M5 East Tunnel in any way equate to those for a filtration system in the West Gate Tunnel is false and misleading.

The issues with the M5 comparison were reiterated in the East West Link Project Assessment Committee Report. The Committee noted that the *"… M5 tunnels are of a different design to that proposed for the Reference Project. The air flow and ventilation within the tunnels is not as effective as that proposed for the Project, and the Committee consider that it is not an appropriate comparison to consider the effectiveness of air pollution control equipment for a longitudinally vented tunnel".* Surely this is as relevant to the West Gate Tunnel Project as it was to the East West Link Project.

The only way the Western Distributor Association or the public will ever know the true cost for pollution removal would be to obtain quotes from all of the international tunnel filtration companies such as CTA, Aigner and Panasonic. Why has this not been done? And why does a community group have to contact overseas tunnel filtration companies to obtain factual, relevant and current specifications and costs? Surely that is the job of the air quality experts hired to write the EES.

Professor Louis Irving of the Royal Melbourne Hospital provided an Expert Report to the East West Link Project Assessment Committee, focusing on air pollution impacts and the importance of tunnel filtration. He wrote, *"The cost-effectiveness of filtering the air discharged from tunnels would need to include the health benefits of improved air quality, as well as the installation and running costs".*[32] Until this is calculated using correct costs and factual pollution removal efficiencies, we will not know the true cost of tunnel filtration for the West Gate Tunnel.

The EES needs to demonstrate that the case for filtration has been comprehensively examined and that a range of suppliers have been approached for correct specifications and costs. Without this, the conclusions of this report regarding filtration are completely meaningless.

3.3.4 Reliance on improvements in engine emissions

The air quality report states several times that improvements in fuel quality, tailpipe filters and engine emissions standards are a far more effective way to remove pollution than filtration. However, Australia is severely lagging behind the developed world in this area and nowhere is this more evident than Melbourne's inner west.

Half of the trucks in Melbourne's inner west are pre-1995, without any exhaust emission reduction equipment. One pre-1995 truck engine emits sixty times more pollution than a post-2007 truck with a similar size engine.[33] While the rest of the western world has a truck fleet with an average age of 5–9 years, the Australian truck fleet has an average age of 13.7 years.[34] We have the oldest trucks in the western world running along our streets with no programs, regulations or incentives in place to induce change.

[32] Department of Transport, Planning and Local Infrastructure, *Expert Report to East West Link (Eastern Section) Project Assessment Committee*

[33] Truck Industry Council submission to the Proposed variation to the National Environment Protection (Ambient Air quality) *Measure in relation to the standards for particles*, October 2014.

[34] The Ageing of the Australian Truck Fleet: Implications and Opportunities, Truck Industry Council, 2013

It is unreasonable to expect the community to rely on something that is unlikely to happen in the foreseeable future. The expected growth in both port activity and Melbourne's population will undoubtedly undo any possible advances in engine emissions control anyway.

The East West Link Assessment Committee Report discussed this same assertion made by the Linking Melbourne Authority. They found, *"While the Committee supports actions to reduce motor vehicle emissions, it does not accept that this is an option that alleviates the need for optimal design of the ventilation stacks to minimise the impact of the emissions on surrounding communities. The responsibility for the management of emissions from the Project sits with LMA, not individual car owners."*

Filtration also presents a unique opportunity to minimise ultrafine particle exposure to both nearby residents and tunnel users that is impossible to achieve through any other pollution control measure. Any advances in fuel quality, engine emission standards, and tail pipe filters will not prevent a heavy exposure to ultrafine particles.

The air quality report also mentions that another effective pollution control measure would be to prevent smoky vehicles from entering the tunnels. But then provides no details on how this would be enforced. To a community who have experienced decades of inaction over air pollution, this just comes across as a motherhood statement that won't result in any tangible action.

3.4 Community/social impact:

3.4.1 Failure to recognise proposed childcare centre

The social impact assessment has failed to recognise that planning approval has been granted to construct a childcare centre on the corner of Francis Street and Williamstown Road. The impact on this potential highly sensitive use should have been considered as part of the assessment.

3.4.2 Failure to recognise impact on Hyde Street residents

The social impact assessment has failed to recognise some serious impacts on Hyde Street residents. A large proportion of the additional 1,500-plus trucks passing just metres from the front doors of Hyde Street houses, between Francis Street and the West Gate Freeway will be placarded loads. These trucks carry some of the most toxic and flammable liquids on our roads. Given this, the residual impact on these residents from the project should have been assessed as more than 'moderate'.

3.5 Transport:

3.5.1 No certainty on truck bans

MTAG welcomes the decision by the State government to apply truck bans to key streets in the project area from the date of completion. The EES does not address how truck bans will be made permanent to ensure trucks are forced to use the West Gate Tunnel to

access the Port of Melbourne. While we understand that this is a political decision, the West Gate Tunnel Project transport modelling has been completed in a manner that assumes this will be achieved. The project must come with guaranteed and locked in truck bans. This planning process should ensure this is the case. Our community cannot risk that future governments may wind back curfews as other traffic and growth pressure mount in Melbourne.

Over the years, we have heard many calls from freight companies and the Port of Melbourne that existing curfews should be wound back. In April of this year, the port's new owners, Lonsdale Consortium, called for the removal of night time truck curfews on Francis Street and Somerville Road.[35]

MTAG has major concerns about the longevity or permanency of the proposed truck bans. Our community has been 'sold' many major road projects over the decades as a solution to the truck issues we experience.

These previous projects have included City Link, the M1 freeway and its various upgrades, and the Western Ring Road. The reality for the City of Maribyrnong is that these road projects have only added to the truck numbers on our residential streets, as trucks have avoided tolls on City Link, congestion on the West Gate Bridge and formed rat runs to get to freeway on and off ramps.

The EES also does not address how truck bans will be enforced. Rather than relying on the current situation of sporadic VicRoads enforcement, this project will require more sophisticated, high technological solutions to monitor compliance. Given the role of this planning process is to ensure mitigation of risks identified with the project, the EES report should have outlined how this can be achieved.

[35] The Age, *Scrap truck curfews, build East West Link to help us grow says Port of Melbourne*, 2017

4. PROBLEMS WITH THE PROJECT

The West Gate Tunnel Project EES objective for health, amenity and environmental quality is: *"To minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the project."*

4.1 Health impacts:

MTAG has a number of concerns regarding health impacts associated with the West Gate Tunnel Project. The EES claims that the project will *"…facilitate more health-conscious planning*".[36] We fail to see how this can be achieved when:

- Ultrafine particles are not measured.
- Increases in noise and air pollution will occur on some residential streets.
- The tunnel will not be filtered.
- No permanent air monitoring will be in place around the portals.
- There are no financial penalties for air pollution breaches.
- The EES is underestimating existing road side pollution and health impacts in the City of Maribyrnong.
- The EES implies that only residents have concerns regarding existing air pollution and health in the City of Maribyrnong, dismissing concerns of health and pollution professionals.
- Equity claims that state "*… no impacts have been identified that have the potential to be unfairly or unequally distributed*" are not true.

It is not good enough for the City of Maribyrnong to experience the status quo with regard to health after this project is completed. We want — and deserve — better outcomes after suffering decades of environmental injustice as our residential streets were turned into freight sewers for the financial benefit of all Melbournians. We pay the price for Melbourne's freight task with our health.

With regard to protecting human health from the toxic and life-limiting effects of ultrafine particles, this project must meet world's best standards — not just inadequate Australian standards. As Premier Andrews said at the West Gate Tunnel Project media conference on 2 April 2017, "*Only the best for the west."*

MTAG believe that, in the absence of both truck bans on Williamstown Road and a tunnel filtration system to capture ultrafine particles and nitrogen dioxide, the project fails the objective to 'facilitate more health conscious planning'.

[36] West Gate Tunnel Project EES, Vol. 1, Chapter 7, p.16

4.2 Air quality:

MTAG believe there is a lack of clarity in the EES around ongoing monitoring and mitigation actions for when air quality standards are breached, with a clear failure to adequately address future problems.

4.2.1 No filtration

The West Gate Tunnel does not have a filtration system. Our community will never have confidence in this project if world's best practice is not applied. There is no known safe level of exposure to diesel exhaust.

Residents in the City of Maribyrnong live with the burden of sharing their neighbourhood with thousands of dirty diesel-spewing trucks. We know we have some of the most heavily polluted air in Australia because of Port of Melbourne-generated truck movements through our suburbs. We live in fear of the impacts of this pollution on our families, particularly our children. When our children develop a cough, a wheeze, asthma or other respiratory related ailments, the first thought that often crosses our minds is "*I wonder if it's related to the trucks on our streets."*

The EES air quality shows that the largest increase in $PM_{2.5}$ will occur along the West Gate Freeway, between Williamstown Road and Millers Road, which is where a ventilation stack will be located. Fogarty Avenue, Yarraville, and the Bradmill Urban Renewal Precinct will both see high levels of NO_2 with the project, as will areas south of the freeway such as urban renewal precinct 15 in Altona North. These are the highly impacted communities living near the ventilation stacks whose health will depend on pollution control measures.

4.2.2 No exposure reduction approach

The project must take an exposure reduction approach, critical to the health of this community. With many locations in the West Gate Tunnel Project area predicted to exceed air quality intervention levels by 2031, anything that can be done to reduce air pollution is important. Residents of the City of Maribyrnong experience the highest exposure to diesel pollution in the state and are already heavily burdened by accumulative air pollution and respiratory health issues. Air pollution impacts can last a lifetime, particularly for a child whose stunted lung growth cannot be reversed once they reach a certain age. It is vital that steps are taken to give residents the best chance at a life not cut short by air pollution impacts.

The University of Southern California studied children's lung health during 20 years of concerted efforts to clean up the air quality in the Los Angeles basin. The study reported that improved air quality was associated with significantly improved lung function and respiratory symptoms in children.[37] This study was done in a city where air pollution has been trending downward over several decades. Australia, however, is trending the other way, with a 68% increase in deaths related to air pollution from 2005–2010.[38] The OECD report found that road transport was largely to blame, and made the recommendation to mitigate the impact of air pollution on vulnerable groups such as the young and the elderly.

The accumulative exposure already experienced by this community must be taken into account and an air pollution exposure reduction approach must be prioritised.

4.2.3 Lack of detail on air monitoring

The EES states that *''Project Co would be required to develop and undertake an ambient air quality monitoring program to measure the air quality impacts of the West Gate Tunnel Project, commencing at least one year of monitoring before operation and continuing five years post opening of the freeway. The results would be publicly available."* However, there are no details of where this monitoring would take place, the type of data to which the public would have access, and the frequency of reporting.

The EES also claims: *"During operation, should exceedances occur that are greater than concentrations expected from the tunnel ventilation system, further consultation would be undertaken with EPA Victoria to determine the appropriate actions to take"*. There isn't any detail regarding the actions that might be taken and, seemingly, no plan for any mitigation strategies. This community is weary of decades of no action on air pollution and has had enough of these kinds of open-ended statements that don't mean anything.

The EES also claims, *"The system would be required to achieve zero portal emissions during operation."* However, there is no information on how this will be guaranteed. With no exhaust fan system to ensure outside air will be actively drawn into the tunnel entry, there may not be sufficient airflow to guarantee no portal emissions. The only way this could be guaranteed is by constant monitoring and measuring the actual velocity and direction of air flow at the actual portals, not just the surrounding pollution. The communities living near the portals deserve some clarity about how this kind of claim will actually be enforced.

4.2.4 No green pollution barriers

The EES makes no mention of using green pollution barriers to mitigate pollution impacts on residents and sensitive receptors. There are many studies on the effectiveness of vegetative barriers, showing a high effectiveness at trapping pollution if the correct plant types are chosen[39] and planted with the specific intent of reducing pollution.[40] Studies

[37] The New England Journal of Medicine, *Association of Improved Air quality with Lung Development in Children*
[38] OECD, *The Cost of Air Pollution, Health Impacts of Road Transport*
[39] Science Daily, *Cities need to 'green up' to reduce impact of air pollution*
[40] Science Direct, *The influence of roadside vegetation barriers on airborne nanoparticles and pedestrians exposure under varying wind conditions*

have also proven the effectiveness of combining solid barriers with vegetation.[41] Effective combinations of vegetative and non-vegetative barriers should decrease ambient surface concentrations on the non-road side, as well as decrease noise impacts. Whilst the subject of effective noise abatement by vegetation varies[42], the evidence regarding the benefits of vegetation in reducing the exposure to nanoparticles caused by traffic[43] is stronger. The landscaping, tree planting and noise barriers that are part of this project must take air pollution mitigation into considerations, especially along the West Gate Freeway.

4.3 Transport impacts:

Despite the potential benefits, there are some alarming localized negative community impacts that will result from the current proposal.

The redistribution of traffic once the West Gate Tunnel Project is in operation (including changes to traffic distribution, which is modelled to happen even without the project), is expected to result in increased heavy vehicle traffic and additional vehicle emissions along the West Gate Freeway, Blackshaws Road, Williamstown Road and Millers Road.

The EES Transport Report assumes there will be continued growth in port generated truck traffic and also assumes a continuing reliance on heavy road vehicles, rather than rail, to support this growth. Failure by successive state governments to deliver freight on rail initiatives, informs this assumption. MTAG believe that if the Port of Melbourne is to ever earn a social licence to operate and grow, a commitment to freight on rail is essential to reduce the burden of port freight traffic on Melbourne's roads

The EES Transport Report acknowledges that transport industry objectives, to have access to all available roads for cost efficient road freight movements, are often in conflict with the resident expectations for their communities. One outcome of this conflict to date has been the implementation of truck curfews on local and arterial roads, including Somerville Road, Moore Street, Francis Street and Hyde Street in the City of Maribyrnong. The EES transport report however states very clearly that the needs of the transport industry are paramount: *"Aligning the use of roads with their primary land uses would remain an issue now and into the future, but at the same time, consideration must be given to the needs of long-established industry and retaining accessibility to the port"*.[44] This statement clearly contradicts the community expectations of the West Gate Tunnel Project, which expects the outcome to be a return of residential streets to residents, not prioritising the freight industry.

A key stated aim of the West Gate Tunnel Project is: "*To increase transport capacity and improve connectivity to and from the west of Melbourne, and, in particular, increase freight*

[41] Science Direct, *Roadside vegetation barrier designs to mitigate near-road air pollution impacts*
[42] Peng, J., Bullen, R., & Kean, S. (2014, October). The effects of vegetation on road traffic noise. In *INTER-NOISE and NOISE-CON Congress and Conference Proceedings* (Vol. 249, No. 8, pp. 600-609). Institute of Noise Control Engineering.
[43] Al-Dabbous, A. N., & Kumar, P. (2014). The influence of roadside vegetation barriers on airborne nanoparticles and pedestrians' exposure under varying wind conditions. *Atmospheric Environment*, *90*, 113-124.
[44] Technical Report A, p.66

movement via the freeway network instead of local and arterial roads, while adequately managing the effects of the project on the broader and local road, public transport, cycling and pedestrian transport networks.'' In other words, a key objective of the project is to reduce numbers of trucks using local roads through the construction of roads designed for and suited to heavy vehicles.

The EES has attempted to determine the likely impacts of the redistribution of freight and other heavy vehicle traffic on the regional and local transport network along with the implications for residents and businesses during construction and operation. It concludes that: ''*The West Gate Tunnel Project would provide quicker and more direct access between the West Gate Freeway and the Port of Melbourne. These assumptions are based on truck bans*[45] *to reinforce the use of intended freight routes and manage the potential for toll diversion".*[46]

The EES articulates all the risks associated with the project — that is, things that might go wrong during the construction or operational phases — and then proposes strategies to mitigate against those risks. The EES describes the risk of rat-running as: ''*Traffic patterns on local and arterial roads in surrounding residential neighbourhoods are adversely impacted by traffic diverting to avoid tolls, curfews or temporary closures due to maintenance activity*''. The EES then rates this risk as 'low' and recommends a 'good engineering design' that will ''*Optimise the design of the Works in consultation with appropriate road management authorities as part of the detailed design process to: minimise adverse impact on travel times for all transport modes … and where feasible, enhance the existing traffic movements at interchanges; [and] design interchanges and intersections to meet relevant road and transport authority requirements."*

So, in other words, the philosophy embedded in the EES seems to be that ''we will build a road that is ***so*** good that everyone — including the trucking industry — will ***want*** to come drive on it''.

4.3.1 Truck bans

In April this year, the State Government proposed a series of new truck bans to help strengthen the stated benefits of the West Gate Tunnel. These bans (see below) will only be implemented on completion of the project, and at this stage, they have the status of a promise. MTAG is concerned that without any supporting legislative foundation made by the current, or future government the bans my never materialise. Despite this lack of proposed legislative framework, the operation of bans is built into the EES's calculations of likely truck numbers on different roads within the project area. MTAG believes that the EES in itself should not be read as a guarantee that the bans will be implemented.

The bans and other curfew changes will be as follows:

- Full time ban on Francis Street, from Roberts Street to Hyde Street.
- Full time ban on Somerville Road, from Geelong Road to Whitehall Street.
- Full time ban on Buckley Street, from Geelong Road to Whitehall Street.
- Full time ban on Moore Street, from Ballarat Road to Hopkins Street.

[45] Described in Section 7.8.1
[46] Technical Report A, p.4

. Removal of the existing curfew on Hyde Street, south of Francis Street.
. Removal of the existing curfew on Whitehall Street, south of Somerville Road.

As with the existing curfews, trucks with a local origin or destination will be exempt. However, the EES assumes that the West Gate Tunnel project will be used by the freight industry despite the bans possibly ending up as no more than a promise.

The proposed truck bans on Francis Street, Somerville Road, Buckley Street and Moore Street will no doubt have the capacity to lead to significant decreases in truck volumes. The EES's traffic modelling states that between 13,200 and 16,200 trucks will use the West Gate Tunnel Project each day (combined two-way volume). According to the numbers recorded in the EES documents[47], the following reductions will occur:

- A reduction of 84–94% in truck volumes on Francis Street.
- A reduction of 84–91% in truck volumes on Somerville Road
- A reduction of 77% in truck volumes on Buckley Street
- A reduction of 87% in truck volumes on Moore Street.

However, at the same time there are other streets that lose out as their truck numbers are expected to significantly increase. In the City of Maribyrnong this will be Williamstown Road, north of Francis Street. The EES data indicates that truck numbers on Williamstown Road will alarmingly almost double by 2031, becoming the new "Francis Street' of Yarraville with the status of carrying the most trucks on a residential street in the city.

One of the challenges in reading the EES transport report is the lack of a direct comparison between truck numbers now and truck numbers in 2031 with the project in place. MTAG has compared these numbers as detailed in Table 3.

DAILY TRUCK MOVEMENTS			
	2016	2031 No Project	2031 With Project
WILLIAMSTOWN ROAD			
Geelong Rd to Somerville Rd	1,800–2,200	2,150–2,650	3,500–4,300
Somerville Rd to Francis St	2,050–2,650	2,800–3,400	3,700–4,500
Francis St to West Gate Freeway	5,350–6,550	6,600–8,100	4,400–5,600
FRANCIS STREET			
Geelong Rd to Williamstown Rd	2,350–2,950	3,000–3,700	100–500
Williamstown Rd to Hyde St	3,700–4,600	4,900–6,000	700–1,100
BUCKLEY STREET			
Geelong Rd to Whitehall St	2,200–2,800	3,400–4,200	700–1,100
MOORE STREET			
Ballarat Rd to Hopkins St	1,450–1,850	2,000–2,400	100-500

Table 3. Comparison of daily truck movements

Currently most of the trucks on Williamstown Road are running just between the West

[47] Transport Report A, p.341

Gate Freeway and Francis Street. But once the tunnel is built, the full length of Williamstown Road between the West Gate Freeway and Geelong Road will be increasingly used by trucks running between the Tottenham and Brooklyn industrial area and the freeway. Trucks will use this route to the West Gate Bridge to access the Port of Melbourne's Webb Dock, Melbourne's eastern suburbs and beyond. This will be their most direct route to the freeway other than via Millers Road, which would entail a longer travel time for them but also features homes along its western perimeter.

4.3.2 Williamstown Road must have truck bans

As a result of the project, Williamstown Road is expected to experience a significant increase in heavy vehicle traffic by 2031 — a potential increase of an average of 1,000 trucks per day between Somerville Road and Francis Street, and 1,500 trucks per day between Geelong Road and Somerville Road. This represents increases of 30% and 60% respectively. This is a significant change for a road that contains almost exclusively residential frontages and also has high-density residential areas east and west of the road itself. Also of major concern is the small buffer from Williamstown Road to Yarraville West Primary School.

Williamstown Road runs right through Yarraville, Kingsville and Seddon, increasing air pollution exposure to all that live in these suburbs. The EES air quality modelling predicts that by 2031, the 24-hour average for PM_{10} and annual average $PM_{2.5}$ exposures will exceed their respective criteria.

It has been acknowledged in the EES that the potential increase of trucks on Williamstown Road could impact on the residential area by affecting north-south and east-west connectivity, including travel times. The traffic increase could also affect cyclists' and pedestrians' perceptions of safety due to increased numbers of heavy vehicles and an existing sensitivity about increasing traffic in the area, as well as affecting cyclists and pedestrians using and crossing the road.

According to the EES, increased traffic on Williamstown Road north of the freeway could have an ongoing impact on community cohesion in the nearby residential area, as residual risk has been assessed as high. This is of concern to MTAG, particularly as many children cross Williamstown Road on foot, scooter or bicycle on their way to and from school.

The EES summary report indicates that community concerns and social impacts associated with increased traffic on Williamstown Road would be mitigated by comprehensive engagement with the community and stakeholders, including development of a Communications and Community Engagement Plan that sets out approaches for identifying and resolving community issues. Traffic monitoring would be undertaken on selected streets for up to two years after construction is complete and local area traffic management works would be considered and implemented in consultation with the relevant local councils as required.

MTAG regards the states measures as grossly inadequate in addressing safety concerns resulting from increased numbers of heavy vehicles and traffic on Williamstown Road.

4.3.3 Hyde Street

One of the supposed positive features of the proposed West Gate Tunnel Project design is a commitment to no acquisition of private residential property. While this might be desirable in some circumstances, to avoid the displacement of residents and negative impacts on community cohesion, the impact of this decision has significant negative consequences for the small community living in the handful of residential houses on Hyde Street, between Francis Street and the West Gate Freeway in Yarraville.

When comparing the no project versus project case, these residents will be left living in homes where, by 2031, there will be an additional 1,500+ trucks passing metres from their front doors every 24 hours. What has not been highlighted in the EES is that the new connections to Hyde Street from the freeway are specifically designed to provide direct access for placarded loads — in other words, trucks carrying the most dangerous goods.

Given this, the residual impact on these residents from the project should have been assessed as more than 'moderate'. Further, because this will result in a diminished amenity that cannot be mitigated for those homeowners, it is completely unacceptable to leave residential homes in this location.

4.3.4 Millers Road

While MTAG's primary focus is on the impact of trucks on the City of Maribyrnong community, MTAG does not support any solutions that push trucks onto residential streets in other areas.

While the project will reduce truck volumes on many roads in the inner west, the traffic impact assessment indicates that during operation, there would potentially be an increase in traffic on Millers Road north of the West Gate Freeway. This is largely due to heavy vehicles avoiding the tolling point between Grieve Parade and Millers Road on the West Gate Freeway, as well as truck curfews.

By 2031 the section of Millers Road north of the West Gate Freeway will experience an additional 7,000+ trucks every 24 hours. This road has residential homes directly abutting it — homes that are not even separated from the traffic by a service lane. There will be no opportunity to construct noise barriers on this road. Members of the community in the City of Maribyrnong know only too well the detrimental impact of having thousands of trucks travelling only metres from their homes. MTAG finds this aspect of the project completely unacceptable.

4.4 Noise pollution:

Many of the newer residential properties along the West Gate Freeway corridor (for example, those on and around Fogarty Avenue, Yarraville) are two-storied homes with bedrooms situated upstairs. The existing barriers do not protect these residents from noise pollution from the freeway. It's important that the proposed noise barriers are high enough to protect these two-storey houses.

Noise walls aren't currently proposed for open recreational space or proposed urban renewal areas. Noise levels near the freeway are predicted to be as high as 70dB LAeq (18h). It's important to human health that both recreational spaces and proposed housing developments are protected from noise associated with this project.

Noise barriers must be installed for the full length of Fogarty Avenue, including protection for the Bradmill site, to improve amenity and health outcomes. There is currently a gap in the planned noise wall between the Bradmill site and Fogarty Avenue which must be addressed. The Bradmill precinct is expected to have noise levels of 70dB(A) with the project, which is unacceptable considering that this site has approval for 1500 houses. The WHO guidelines for night noise recommends an annual average noise level of less than 40 dB(A) outside of bedrooms to prevent adverse health effects.

Sporting clubs in McIvor Reserve are not adequately protected or equal between clubs. Noise attenuation will be provided to the hockey club but not for the Yarraville Glory soccer club.

4.5 Construction impacts:

4.5.1 Lack of clarity about monitoring and enforcement of spoil removal

MTAG has concerns in relation to section 2.2.1 — removal of spoil, which states, *"General earthworks, storage and removal of spoil (including the treatment of contaminated soil, where required), generally via the freeway network with site access also required via Blackshaws Road and New Street for the southern portal and via Williamstown Road, Francis Street, Hyde Street and Hudsons Road".* While we are encouraged that the freeway network is the desired route for spoil removal, it is unclear how the project will minimise, monitor and enforce the routes used by individual drivers and companies to ensure that residents are not further burdened with exposure to potentially harmful materials, excess noise and vibrations.

We are also concerned about the sheer volume of vehicles entering and leaving the construction site, near the intersection of Whitehall and Somerville Roads, including trucks. MTAG's understanding is that there will be no reduction in the number of private (trucking and other industry) vehicles using the area immediately east of Whitehall Street, that the site will include a 400-vehicle staff car park, and that up to 60 trucks per hour will be entering/leaving the site, carrying spoil. The EES document contains no proposals for dealing with the dangers presented to other road users at this key intersection. This is part of a well-used cycle route - notorious in recent months for the death of a cyclist who was hit by a prime mover entering this very site.[48]

The risk to other road users should have been addressed in these reports.

[48] The Age, Cyclist killed in Yarraville in truck collision, 2017

5. PROPOSED MITIGATION MEASURES

5.1 Air Quality:

5.1.1 Tunnel filtration

A tunnel filtration system is one way to reduce the burden of ultrafine particles, not just for people on the City of Maribyrnong, but also the Greater Melbourne area.

We need to have confidence that the West Gate Tunnel Project has taken every possible measure to protect our health and this can only be achieved by world's best practice that includes installation of a filtration system.

MTAG is concerned that users of Yarraville Gardens, with a clear view of the towering northern ventilation stack, will experience negative health perceptions associated with using Yarraville's main open space. Filtration will give confidence to users of the Yarraville Gardens that all available measures have been taken to protect human health. We have lived in fear of diesel pollution for way too long and have a right to feel safe in our community as we enjoy our limited open space.

MTAG are also concerned about worsening air quality on communities in the vicinity of the southern ventilation stack. This particularly includes Fogarty Avenue, Yarraville, and residents of South Kingsville and Altona North. Their ongoing health will depend on pollution control measures such as filtration.

The Victorian Government, through the West Gate Tunnel Project, has an opportunity to demonstrate to the world that Australia can stop lagging and actually be a leader, taking innovative measures to protect the health of the surrounding populations. We need to embrace new and available technologies and equipment and not miss the opportunity to make this the cleanest tunnel possible.

5.1.2 Relevant monitoring data

A more recent data set, from the period 2014–2017, must be used from the Footscray monitoring station to give background levels. It is critical that predictions and modelling be as accurate as possible.

Roadside monitoring, which provides a more accurate indication of the true levels of diesel particulate matter exposure for residents living on residential freight routes, should be used to inform this EES. This would provide a more accurate assessment of the existing pollution impacts, and a clearer picture of the project's impacts. Data from the five temporary monitoring stations installed by Transurban should be used, regardless of the fact that the stations have been in place for less than 12 months.

5.1.3 Ultrafine particles

Ultrafine particles (those smaller than $PM_{2.5}$) must be measured prior to construction and then permanently monitored to truly understand the potential health impacts of this project.

5.1.4 Permanent air monitoring

This project must come with permanent air monitoring stations near both portals that delivers open, timely and transparent information to the public. It is imperative that monitoring is in place to ensure no breaches of the project's promise to "*achieve zero portal emissions*"[49] are experienced. The public cannot have confidence that a private company will volunteer reports of emission breaches. Any monitoring needs to be overseen by the Victorian EPA or other community approved entity and all data made live on the public record.

5.1.5 Penalties for breaches

Penalties must be put in place for any breaches of promises or air pollution regulations. Penalties must also be high enough to be a deterrent to Transurban, who is predicted to generate billions of dollars[50] in revenue from its toll road projects, both in Australia and globally in the decades to come.

5.2 Health impacts:

5.2.1 Lung cancer risks must be accurate

Accurately assess lung cancer risks by replacing the estimates from 1996 with the data available in the AHPC's Health Tracker[51]. This data should then be used in the cost-benefit analysis of the impacts of filtration and other mitigation measures on health outcomes.

5.2.2 Asthma incidence must be accurate

Accurately assess asthma incidence in the area by reporting Health Atlas data at a suburb level. This data should then be used in the cost-benefit analysis of the impacts of filtration and other mitigation measures on health outcomes.

5.2.3 Health equity must be achieved

Page 173 of the EES health report states that no impacts have been identified that have the potential to be unfairly or unequally distributed within the community as a result of this project. However, when some residential streets will experience an increase in truck numbers, this statement is clearly false. Truck bans and other mitigation measures must be examined to ensure equity is achieved as much as is possible.

5.2.4 Buffers to sensitive land use

The Westgate Tunnel Project should have to comply with any buffer zones in regard to sensitive land use, applying the recommendation of organisations such as the Californian Department of Education, who recommend a buffer of 457 metres from major roads to schools.[52] This should also apply to childcare centres and kindergartens, and the proposed childcare centre at the corner of Williamstown Road and Francis Street.

[49] EES Executive Summary, p.38
[50] The Age, *Transurban: the making of a monster*, 2016
[51] Victoria University, *Australian Health Policy Collaboration*
[52] http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp - Roadways

5.2.5 Proposed childcare centre

In the absence of truck bans on Williamstown Road, extreme measures must be taken to protect the health of the children at the childcare centre proposed for the corner of Francis Street and Williamstown Road. This will need to include indoor air filtration, green pollution barriers surrounding the centre and continuous monitoring of air quality inside the centre and results made available to parents and staff. Outdoor play must also not be an option at this centre.

5.2.6 Reduce exposure to noise pollution

Ensuring ongoing noise monitoring and enforcement over the course of construction of the project would assist in ensuring that the freeway network is indeed the preferred route for removal of spoil, rather than residential streets.

Temporary noise walls should be erected prior to the demolition of existing noise walls. This will provide protection from both operation and construction activities associated with the project.

Any traffic noise barriers installed or upgraded should be world's best practice.[53] They should take into account the height of the residential buildings being protected, and this must be reflected in the wall design height to provide effective abatement.

The ESS states that the acoustic performance of open graded asphalt (OGA) shows an approximate -3dB reduction in noise, compared with the standard dense graded asphalt (DGA). It is MTAG's view that this should be used along the length of the project, including ramps and arterial roads, particularly those that have been identified as routes for spoil removal, to further mitigate the impacts of excessive noise on human health.

Noise barriers should be supplemented with vegetation to act as further noise abatement, improvement in visual amenity, and further enhancement of air quality.

Noise abatement must be provided for the full length of Fogarty Avenue to protect the Bradmill precinct and the Yarraville Glory Soccer Club.

5.3 Transport:

5.3.1 Truck bans for Williamstown Road

Williamstown Road must have truck bans to protect the health and safety of residents of Yarraville, Kingsville and Seddon. The West Gate Tunnel Project will fail these communities if trucks numbers on Williamstown Road are allowed to rise. This project should be decreasing the impact of trucks for residents in the whole of the City of Maribyrnong.

5.3.2 Truck Bans for Millers Road

Grieve Parade in Altona should be the preferred north-south route for trucks, not Millers

[53] http://www.premier.vic.gov.au/only-the-best-for-the-west-with-6000-new-jobs/

Road, which is residential on the western side and traverses school zones. Truck bans should be put in place on the section of Millers Road north of the West Gate Freeway and the Grieve Parade interchange upgraded to handle the increased volume of trucks.

5.3.3 Truck bans for Hudsons Road

Truck bans are needed for Hudsons Road, Spotswood, west of the rail tracks. This would ensure that eastbound petrol tankers use the appropriate route. MTAG support the proposed toll exemption for these trucks on the Bolte Bridge but other measures will still be needed to force them to go that way. MTAG is strongly against the call by Hobsons Bay Council for a truck ban exemption on Francis Street for these trucks.

5.3.4 Truck bans must be locked in

MTAG wants the truck bans to be locked in through an Act of Parliament, rather than the proposed delegated legislation. We also support that the West Gate Tunnel contracts include compensation to be paid to Transurban if truck bans are removed or diluted as a form of guarantee to our community.

MTAG calls for the use of permanent technology, such as electronic gantries, transponders and cameras, to enforce the truck bans through financial penalties.

Current curfews are only monitored by a limited number of patrol vehicles and cut backs over the years has seen the number of vehicles available reduced. This has caused the community to have little faith that curfews are actually enforced.

Without the truck bans, our community will continue to bear environmental injustice.

5.3.5 Modern compliance procedures needed

The extended truck bans will not be effective if the only compliance is the kind of sporadic VicRoads enforcement that we have now. Current curfews are only monitored by a limited number of patrol vehicles and cut backs over the years has seen the number of vehicles available reduced. This has caused the community to have little faith that curfews are actually enforced.

The inner west is going to need a more sophisticated high tech approach to compliance monitoring, using 21st century technology, remote surveillance and tolling data. MTAG calls for the use of permanent technology, such as electronic gantries, transponders and cameras, to enforce the truck bans through financial penalties.

Compliance surveillance and reporting must be carried out once the project is complete to ensure that heavy freight movements are using the appropriate routes, not residential streets.

5.3.6 Ramps for local trucks and placarded loads only

The original Eddington East West Needs Assessment called for the West Gate on/off ramps to be truck only. This restriction should also apply to this project, ensuring the adjoining streets do not become rat runs for commuter traffic. These streets are already congested.

The West Gate Distributor Stage 2 proposed a major upgrade of the Hyde and Francis

Street intersection along with the widening of Whitehall Street. This would have allowed the capacity of these roads to deal with the expected increase in truck and car numbers coming off the West Gate Freeway. The West Gate Tunnel Project EES does not propose upgrading these roads to deal with the increased traffic. Restricting these ramps to placarded loads and local trucks only will prevent worsening congestion on these local streets.

5.3.7 Compulsory acquisition of properties on Hyde Street

MTAG believes that there should be compulsory acquisition of the private residential properties on Hyde Street, between Francis Street and West Gate Freeway, in Yarraville. This will ensure they do not experience detrimental health impacts and reduced amenity due to the increase truck numbers. These residents have lived with the uncertainty of infrastructure solutions going on and off the table for a decade. It's time they were given certainty.

6. CONCLUSION

For far too long, residents of the City of Maribyrnong have shouldered the unjust burden of having their residential streets used as trucks sewers to move freight in and out of the Port of Melbourne. This impact has seen our city experience some of the worst health outcomes, compared not only to Greater Melbourne, but more widely to state and national health statistics.

MTAG met with Sir Rod Eddington when he was researching the East West Needs Assessment Study in 2007. We elected to have our meeting with him on the footpath outside Yarraville Community Centre on Francis Street. He was shocked at what he experienced, and said to us, "In all my years looking at infrastructure around the world, I have never seen a situation like this where a western country sends its freight down residential streets like this." He really could not believe what he was experiencing here in Yarraville: the noise, the smell and the fear of being a mere metre from passing trucks while standing on a footpath in the world's most liveable city.

Subsequently, the East West Needs Assessment concluded, "Doing nothing is not an option."

Yet despite this, the community here has waited and waited for action as the trucks slowly poison us year after year after year. We have watched as plan after plan has been put on the table and discussed and discussed and then eventually discarded. These have included West Link, the East West Link, The Victorian Transport Plan, the West Gate Distributor Stage 1, The West Gate Distributor Stage 2, The Western Distributor, Project 10,000 and now the West Gate Tunnel Project.

MTAG has always believed that purpose built road infrastructure is one part of the solution needed to rid residential streets of port trucks. Almost every industrialised country in the world has direct freeway access to their ports. Trucks will be part of the freight movement mix for the foreseeable future and Melbourne desperately needs direct truck access to its port. But we also urgently need freight on rail, efficient freight movements, cleaner fuels, cleaner trucks, smarter freight companies, a port committed to real environmental initiatives and decent land use planning and changes.

We also need the rest of Melbourne to own up to this problem, it's a Melbourne wide responsibility to end the environmental injustice in our community.

MTAG has never asked for a toll road; we have never asked for the truck problem to be shifted onto another community; we have never asked for a private company to plan a freight solution that stands to benefit its shareholders for decades to come.

What MTAG has asked for is an end to the truck problem in our community. The proposed West Gate Tunnel Project has the potential to be a game changer for our community but it must come with tunnel filtration, permanent air monitoring, truck bans that can't be diluted or undone by future governments, the best noise and pollution

barriers possible, guarantees that other residential streets will not bear the brunt of truck bans and no increased dangers for kids in kindergartens, child care centres or schools. This project must deliver outcomes that will benefit all residents.

If this project cannot achieve the mitigation solutions outlined in this submission then MTAG says loudly and clearly, "*Build the West Gate Distributor as promised to us at the last state election. Build it now and get on with the other much needed solutions*."

Enough is enough; get the trucks off our streets!