My submission is about diesel exhaust during construction and how to mitigate it.

About me

The Greensborough bypass is 150m from my house. The freeway will be less than 100m from my house.

My concern is air quality, in particular diesel fumes as daughter suffers from asthma.

About Diesel exhaust

In 2012 the WHO reclassified diesel fumes as class 1 carcinogen, meaning it's a definite cancer causing substance. That puts it in the same class as asbestos and arsenic. There's no known safe level of exposure.

Technically it's the particulate matter (or soot) in diesel fumes that causes lung and bladder cancer.

We've all seen the clouds of black smoke from trucks as they pull away from the lights, well it's not that black soot that damages DNA, it's the soot too fine to see that gets deep into the lungs.

Diesel exhaust also contains formaldehyde, benzene, Toluene and nitrous oxide. The last is known to cause asthma to develop in children.

The Europeans have lead the world in bringing down pollution from trucks, with remarkable success. Australia has been following Europe's lead.
A brand new truck pre-1996 was permitted to emit 1,200g/MWh of particulate matter, in 2011 that was reduced to 20g/MWh and has remained at this level since. That's a 60 fold reduction in PM emissions in less than 15 years.

The Australian standard ADR80/03 in 2011 aligns with the Euro5 emissions rules.

That's a 60 fold improvement in particulate emissions. In reality the pre-96 trucks are emitting more PM than when they were new.

You might think that pre-1996 trucks would be rare but in fact they were more 40% of the trucking fleet in 2014 according to ABS data. (ABS Motor Vehicle Census 31-Jan-2014 9309.0)

The average truck age in the Australian trucking fleet is getting older and the older trucks are more city based as the newer, more fuel efficient trucks do the longer country runs.

You could be in traffic next to a pre-96 truck or a post 2010 equivalent and you would see no visible difference in the exhaust despite their being at least 60x more PM being emitted by the older truck.

For my house, the freeway will increase my exposure to diesel exhaust fumes. More trucks, closer to my house, going at 100km/h instead of 80km/h can only increase the exhaust levels. The amount of increase is impossible to discern from the EES because it describes the increase at “sensitive receptors” but the NELA will not disclosure the locations of the “sensitive receptors”

In fact the EES makes assumptions about improvements in air quality due to improved vehicle emissions:
"The revised environmental quality objective listed for PM$_{2.5}$ is to be implemented by 2025, by which time it is expected there would be improved vehicle emission control technologies."

It’s interesting the NELA is “hanging its hat” on improved vehicle emissions to meet its objectives. I think the NELA should “walk the walk”

**During construction**

**EES Page 10-16**

Risk AQ05 and AQ09 relate to exhaust fumes during construction. Despite not being modelled the risk rating is given low.

The EES goes on to say

"Actual emission rates and impacts would depend on the number and power outputs of the combustion engines, the quality of the fuel and engine maintenance. It is expected that impacts associated with emissions from these sources would be minor, particularly as the operation of heavy machinery that is mostly likely to produce these emissions would largely be intermittent and of limited duration."

But nowhere does it make reference to the vehicle age. The EES does not specify truck numbers during construction but an NELA engineer told me it’s 3,000 dump trucks per day for the best part of six years.

For a perspective on PM exhaust:

3,000 pre-96 == 180,00 post-10 trucks
Or
3,000 post-10 trucks == 60 pre-96 trucks.

The EES also list another mitigation of risks AQ05 and AQ09 as:

“Effectively maintaining vehicles and plant machinery in good working order”

My objection to the statement is a pristine pre-96 truck produces 60x more PM than a truck manufactured after 2011.

EES page 10-16 also goes on to say

“Emissions from trucks during construction would be regulated in accordance with the requirements of the National Environment Protection (Diesel Vehicle Emissions) Measure (2001).”

My objection to this measure as a mitigation is it was written a decade before Euro5 standards were in place and makes no allowances for newer trucks being less polluting.

**My suggestion**

Stipulate in the tender that all vehicles and construction equipment on-site must conform to ADR80/03 (aka Euro5) rules. In practice this means all trucks, excavators etc be manufactured after 2010.

There is a precedence for this, the Maribyrnong Track Action Group (MTAG) and the Victorian Trucking Group (VTG) have together developed the Maribyrnong Cleaner Freight Initiative (MCFI). The initiative gives greater access to the local streets for the cleaner Euro5 trucks.