

12 September 2014
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Director Infrastructure Projects

Department of Planning and Environment
 Number SSI 13_6136
 Major Projects Assessment
 GPS Box 39
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To Whom it May Concern

**Objection to the proposed lack of filtration in the stacks for the NorthConnex Application
 Number SSI13_6136.**

I am concerned that the proponent is recommending no filtration on the ventilation stacks for the proposed development. I refer to the NEPC, 2002 National Environment Protection (Ambient Air Quality) Measure - Impact Statement for PM_{2.5} Variation Setting a PM_{2.5} Standard in Australia in which it is concluded that:

"No threshold has been identified for the health effects of particles, and the observed health effects justify reducing PM_{2.5} levels as far as practicable."

In other words, for PM_{2.5}, deleterious health effects in the community are observable at any increase in concentration and as a result as far as practicable government bodies should be requiring industry to reduce these emissions.

Based on my brief perusal of the air quality information I do not consider that the proponent has put forward a sufficiently justified position for not filtering especially when the cost will be insignificant in the scheme of the project, can be easily passed onto the user. If filtration were to be required it would have a lasting real reduction in the risks to my community (compared to not installing it), and would go a considerable way to alleviating anxiety currently expressed by many locals near the proposed ventilation stacks.

I would ask you to taken the NEPCs recommendation seriously and please require filtration as a condition of consent.

More specific comments on sections of the EIS follow.

Comments on Section 10.5 (page 1095) – in particular air quality during operation

The proponent has indicated that in their opinion air quality impact in the vicinity of ventilation outlets will have an insignificant consequence and is unlikely to occur. No justification for this statement is provided. The mitigation measure contains absolutely no commitment to mitigating the risk, irrespective of the outcomes of monitoring, blithely stating that "if pollutant concentrations are above predicted levels, additional feasible and reasonable mitigation measures would be considered to meet applicable predicted limits". This is concerning as there is no information on what is considered "feasible" or "reasonable" nor is there any information as to who makes this decision. Moreover the criteria is not an air quality standard for discharge into a residential area but rather a "predicted limit", presumably from a consultants model which may or may not be peer reviewed and which may not be subject to regulatory criteria.

A further concern is that monitoring post construction is a reactive measure to managing risk. Invariably there will be a lag period while data is gathered, so that if risks are identified these are unlikely to be acted on within months to years of the tunnel opening. Generally in environmental monitoring programs there is a need to establish a trend before action takes place. As environmental conditions are highly variable and no more so than in the atmospheric environment, it is likely that developing clear evidence for an issue will take a long period of time. During this period local residents will inevitably be exposed to higher doses of particulates such as PM₁₀ and PM_{2.5} and as

has been established there is no threshold at which increased levels of these pollutants will not have health effects (NEPC, 2002). Based on this ground alone, the consequence of not installing filtration from the outset cannot be called insignificant.

An additional concern with a purely retrospective monitoring program is that unless the consultants are independently appointed and funded, they will inevitably provide recommendations that are to some degree compromised by the expectations of their employer. Thus a very strong body of evidence will need to be established before any action is taken, and this probably only after political pressure on the operators.

Furthermore as has been demonstrated in almost every tunnel opening in Australia in recent years, the uptake by motorists is less than modelled. This will probably result in a monitoring program that appears to be better than expected as the actual number of motorists initially using the tunnel may well be less than "predicted". Moreover, it has been demonstrated that as governments commit to building roads, it does not in the long term alleviate traffic, rather more people use their vehicles. Therefore with time the traffic on the road is likely to increase not only as more people begin to use the facility as they become comfortable with the toll but also due to general increased traffic as the city grows. To be effective, monitoring should be carried out in perpetuity and stack emissions should be required to comply with the most stringent requirements as they are placed in residential areas. Better by far would be a decision to install particulate filtration into tunnel stacks from the outset thereby alleviating the actual, potential and perceived risks to the community.

In summary I would recommend:

- Reconsideration of the applied "consequences" and "likelihood" ratings. There are very real "consequences" of exposure to atmospheric pollutants. For some in the community the modelling predicts that there will be exposure at cumulative levels exceeding some thresholds (eg $PM_{2.5}$). Therefore it is "likely" to occur.
- Reconsideration of the retrospective approach to the filtration issue;
- Reconsideration of the use of a modelled result to determine if the emissions are acceptable. Stack concentrations should be required to remain below the threshold and not just rely on a 15m stack at the base of a valley to dilute the pollution – but this won't happen without filtration.
- If monitoring is to be the reactive management adopted, have in place a very clear protocol for actions that will occur if results exceed the criteria. These must include timely installation of additional mitigation infrastructure.

General comments on arguments against filtration (page 450 and following)

I note the arguments in the EIS regarding the apparent cost of installing and maintaining filtration equipment. Generally I found the discussion very limited and obviously biased. A cost benefit analysis has to be undertaken, and governments should consider the health cost of additional PM_{10} and $PM_{2.5}$ in the community against the cost of implementation. However, to base the decision not to filter on a single study quoted in the EIS suggesting that filtration would cost more than the health benefit seems remiss. Even if the cost is greater than the benefit, this in itself is not a valid argument to allow pollution to occur.

I accept that there are perhaps better ways of reducing pollution in the atmosphere and that there is a net health benefit to the community by having the tunnel in place but this does not alter the fact that some people in our community will have their health compromised.

I would put it to the department that if filtration cost a similar amount to the quoted M5 East study (though with improvements to technology I expect the cost would come down with time), the cost per year to operate the system would be \$3.8M divided by 5 = \$760,000 per year (as the study reportedly removed 0.2t per year). The installation costs of \$17M over the project is incidental. Given there are predicted to be 5,000 trucks taken off the roads per day, if the cost was spread over just these road users as an additional levy on the toll it would cost only \$0.42 per truck. If the cost was borne by say 50,000 car users a day it would only represent 4c added to the toll. This is a small price to pay, by the user, to mitigate their pollution and prevent others in the community being exposed to it. There is no need for government or the operators of the tunnel bear the cost. It should be paid for by the user as the polluter.

In summary I would recommend:

- Reconsideration of the financial impact of filtration as on a per vehicle basis I expect it will be insignificant and easily recouped.

- Reconsideration of the position whereby the only reason for filtration would be if the overall financial benefit to the healthcare industry was greater than the cost of implementation.

General comments on the air quality modelling process.

The modelling is complex and detailed. As an environmental consultant with modelling experience I would suggest that models can be prepared in support of a particular viewpoint. The modelling has been undertaken by the consultants acting for the proponent and may be somewhat biased. I would therefore like to see independent expert review of the model before it is accepted and decisions not to filter the emissions rubber stamped. This is particularly the case when for example predicted PM_{2.5} is expected to contribute up to 8% of the threshold and in some cases is predicted to result in an annual peak cumulative concentration that exceeds the threshold. This is not “insignificant” as the authors would suggest.

Furthermore any model may be prone to errors based on wrong assumptions. One potential example of this is that much of the justification for the pollution not being “significant” is based on a predicted background concentration. Based on my reading of the method, owing to lack of local data the background concentrations has been interpolated from data from data collected in Liverpool, Chullora, Earlwood and Richmond. These suburbs are more “built up” than the Hornsby shire and (with the exception of Earlwood are westerly suburbs generally having a drier climate and therefore higher expected particulates. Therefore, use of them to predict background for Hornsby/Waitara means the model may well underestimated the percentage contribution to atmospheric pollution.

It is usual when modelling complicated environmental issues to carry out a sensitivity analysis of key parameters to determine the impact of erroneous assumptions. I could not find such an analysis in the information provided in the EIS.

In summary I recommend:

- Independent technical review of the model and its assumptions.
- Demonstration that sensitive parameters have been appropriately and conservatively chosen.

General comments on the risk assessment.

Health risk assessment is a highly specialised field. The report relies heavily on the air quality modelling and therefore any errors in the air model will be propagated and potentially multiplied through the risk assessment process. Again independent technical review should be undertaken to verify the findings of the risk assessment, especially as some of the quoted thresholds are very close to the NSW EPA accepted incremental risk of 1×10^{-5} .

In summary I recommend:

- Independent technical review of the model and its assumptions.
- Consideration of the effects of reliance on the air model in case it is found to be in error.

Thankyou for your consideration of the above.

Of you have any queries please contact me on 0448 977 926.

Yours sincerely

Colin McKay