

10 September 2014

Director - Infrastructure Projects
 Department of Planning and Environment
 Number: SSI 13_6136
 Major Projects Assessment
 GPO Box 39
 SYDNEY NSW 2001

PLEASE NOTE: I have included my personal information as a form of introduction, as I believe it is beneficial in allowing you gather information regarding perspective and content. I DO NOT wish this information to be made public and request that it is blacked out, specifically my name, address and phone no. I am agreeable to my name being on a general list of submitters.

NorthConnex Application Number: SSI 13_6136

Please find below my submission in response to the exhibition of the EIS for NorthConnex.

Firstly I would like to state I object to the project as described in the EIS.

My name is [REDACTED]. I am a 19 yr. old student currently completing a B.Science/Commerce at Sydney Uni with a view to majoring in geology/geophysics. I reside in Wahroonga. I object to the location of the northern ventilation being on the corner of Bareena and Woonona Ave, Wahroonga, for reasons listed below:

- I am concerned that the location of the northern ventilation for NorthConnex will impact negatively on the quality of air that I breathe, despite assurances by NorthConnex that there will be a net negligible impact.
- In July 2012, the WHO classified diesel soot as a carcinogen. The structure of diesel particles differs from that of wood fire particles. The functional groups are also different. Minister Gay recently stated that people are doing a lot more harm than trucks and cars when they “open a bottle of chardonnay and light the fire.” [730 Report, ABC Sept 7th] The science does not support him as the WHO have not as yet, declared wood fire PM to be carcinogenic.

- All the health research indicates that young children are particularly vulnerable to exhaust emissions. Within a 1.5 km radius of the proposed stack, there are numerous schools, childcare centers/pre-schools. The 9300 schoolchildren calculated by CAPS Group appear conservative, considering there is an average of 350 students in Yr. 12 alone at both Barker and Knox. I would like to see precise numbers provided by the statisticians as to how many children attend childcare, preschool, K – Yr. 12, daily within 2 km of the northern ventilation stack, so that the risk factors for adverse health impacts on those most vulnerable are appropriately assessed.
- When he released details of the plant, Barry O'Farrell has been quoted as saying, "By removing thousands of trucks a day from surface roads, we will improve the lives of tens of thousands of people living near Pennant Hills Road". The 'tens of thousands' living within 2km of the stack should not be forced to bear a greater health burden to benefit the "tens of thousands" living near Pennant Hills Rd. All citizens are of equal value and no child's health should be 'traded' for that of another.
- The nearest regional Air Quality Index (AQI) readings have been recorded at a sports field in Prospect and Lindfield, Prospect being approx. 20km away from the proposed location. These readings are not suitable as a benchmark for establishing the effects of the northern ventilation on air quality local to the proposed stack location. A local benchmark should be established to enable appropriate modeling of air quality changes.
- The numerous submissions to the Senate Inquiry into Air Quality in Australia (2013) indicate that the main pollutants from traffic are particulate matter, ozone, oxides of nitrogen, sulphur dioxide, carbon monoxide and other volatile organic compounds. I am particularly concerned about ultra-fine particulates [PM0.1], which emanate from the combustion processes, mainly vehicle exhaust. Ultrafine particles, which are invisible to the human eye are not monitored as there is currently no compliance standard set for them. This regulatory gap in air quality monitoring needs to be closed before the community can be assured that these pollutants are not impacting health.

- There is extensive research showing health effects of PM10 and PM2.5, but as yet, limited studies of the effects of PM0.1, which are seen as being of most concern for their effects on health. I therefore feel that the State government has a duty to apply the Precautionary principle in relation to the stack location due to scientific evidence that has come to light in the past decade proving diesel emissions to be carcinogenic.
- I am concerned that this project is being rushed and Transurban have not undertaken a satisfactory health risk assessment. Residents in the area require the following information for postcodes Wahroonga 2076 and Hornsby 2077, to inform a base-line for comparing the current air quality situation with the NorthConnex project's projections of air quality impacts:
 - 2012/2013 asthma data
 - 2012/2013 lung cancer register data
 - 2012/2013 COPD data
 - AQI data (including PM2.5 and PM0.1) collected at the proposed sites for the portals and within 1km and 2km of the ventilation stacks.
- The proposed site for the northern ventilation is located in a valley making it particularly susceptible to morning inversion effects. There is a high possibility that stack emissions will be trapped underneath, exposing thousands of children and residents to air pollution above permissible levels whilst on their way to school and work. I am concerned that the ventilation stack will deposit a lot of the pollution in the same pattern, meaning the effects at ground level will be permanent and cumulative.
- The height of the northern stack is 23M but only 15M above ground level. We have heard from the air quality expert for NorthConnex that while a taller stack is optimal, the height was reduced to make it visually more acceptable to the community. He was nevertheless confident that 15M above GL was sufficient. I am concerned that the height is insufficient but in voicing this, Transurban may use it to their advantage and simply increase the height of the stack...so it is a no win situation.
- I am concerned about the gradient at the northern portal. Fuel consumption is accelerated and emissions increase as

trucks go uphill. A horizontal tunnel would be optimal for reducing the likelihood of accidents and emissions.

- The NorthConnex EIS appears to be quiet 'generic'. Dispersion modeling is not site specific. Local residents should be provided with area specific detailed information on the proposed dispersal of Northconnex pollution and ventilation methods before they can be fully informed of the health impacts of the project.
- This NorthConnex proposal will only add to the already poor air quality in this area, which already has a high exposure to air pollution due to being located at the M1/Pennant Hills Rd/Pacific Highway intersection. Currently, a greater percentage of traffic feeds from the M1 onto the Pacific Hwy in Wahroonga than left to Pennant Hills Rd. There is a high probability that NorthConnex will not solve this issue. I would like to see alternative solutions addressing this explored as well as area specific air monitoring of background ambient air.
- I am concerned that, due to people's health being compromised, there will be a decrease in work productivity and school attendance and added pressure on local hospitals and GP surgeries.
- The 2011 census data shows the majority age bracket in Wahroonga to be between 0 and 14. The land size of homes and close proximity to many great schools attracts many young families who attend the multitude of schools with a 2km radius of the stack. Wahroonga, which is currently known for it's leafy green streets and family demographic will become synonymous with air pollution. It will destroy the lifestyle and heritage of this community. Concern regarding air pollution from the northern stack is not an issue that will simply 'go away', rather it will escalate in the years before and after the opening of NorthConnex in 2019/20, possibly affecting school patronage and eroding the family demographic of the area.
- I am concerned about the potential impacts to heritage items including:
 - Vibration impacts
 - Settlement impacts

- Visual impacts
- Economic impacts
- Social impacts

One only has to see the isolated historic homes sandwiched between apartment blocks along the Pacific Hwy in the Upper North Shore, falling to wreck and ruin, to witness the accelerated deterioration that loss of community and social fabric initiates. The perception of the area as synonymous with a pollution stack will discourage buyers, impacting property prices, and subsequently, the motivation to maintain heritage listed buildings. Visibility of the stack will be a reminder of local air pollution. The heritage chapter of the EIS has inconsistencies and in some cases uses out-dated significance assessments as the basis for investigation of impacts. In addition, the low legibility of the document, cross referencing to technical papers are not interpreted and difficult to read maps make it difficult to clarify points of confusion.

- In a study of the pollution affects of the M5 East tunnel (NSW Health, 2012), it was stated that the ventilation stack was an important source of air pollution in the area within a 2 km radius, contributing 23% of NO_x and 17% of PM₁₀. [There are no percentages listed for PM_{2.5} and PM_{0.1} due to the gap in air quality regulatory requirements] Local residents have lobbied for several years to get improvements in the ventilation, and in the reporting of health concerns relating to the M5East. These ongoing health concerns place undue stress on families and communities. I would like to see NSW Planning not repeat past mistakes.
- There currently appears to be a contradiction in both state and federal government policy-making, given that in April 2014 the state and Commonwealth governments agreed to have a national clean air agreement in place from July 2016. This was to include tighter reporting standards on air pollutants. Given that NorthConnex is being designed/built with the knowledge that vehicular traffic is one of the main sources of air pollution in our cities, I would like NSW Planning to take into account the science/studies of the past decade. The community fears have not been allayed by NorthConnex statements stating the stack will have a net negligible effect, or indeed those of roads minister, Duncan Gay, 'this will decrease the muck in the air above Sydney by 38%...in the worst case scenario it could be 0.1% worse, but

we in fact think it could be better.”[ABC 730 Report Sept 5th]

- I am concerned that the ‘science’ is being ignored.
 - The AMA submission to the Senate Inquiry into air quality in Australia [2013] noted particular concern with the emission of PM2.5 and PM0.1 from diesel vehicles, given the gaps in the regulatory requirements relating to air quality standards. The submission states that in 2012 the World Health Organisation (WHO) reclassified diesel engine exhaust as a Group 1 carcinogen, raising it from a "probable" to a "confirmed" cause of lung cancer.
 - The AMA claims that current Australian air quality standards do not meet what is required to adequately protect human health. It recommends that current air quality standards be revised and upgraded to align with current scientific evidence and international best practice (ib id, p10). I would like to see this attended by the government as soon as possible.
 - According to the AMA submission, particulate matter is one of the most important pollutants, in terms of potential harm to human health, "as it penetrates into sensitive regions of the respiratory system, contributing to significant acute and chronic health problems and potentially premature mortality".
 - In a major study in California, traffic emissions have been linked with permanent and life-limiting damage to children's lungs.
 - According to a recent study by researchers at Harvard School of Public Health (I Kloog et al, 2012), older adults may be at increased risk of being hospitalised for lung and heart disease, stroke, and diabetes if they have had long-term exposure to fine-particle air pollution. This was the first study to look at the link between long-term effects of exposure to fine particles in the air and rates of hospital admissions.
 - For over a decade research has shown the link between particulate matter (PM) and elevated levels of mortality. Schwartz et al (1996) showed the relationship between fine PM2.5 and increased mortality in six US cities, stating that while PM10 has a higher probability of being deposited in the bronchial region, fine particles have a higher probability of being deposited in the lung (this being enhanced in people

with COPD.

- The WHO classified diesel soot as carcinogenic in July 2012. Please find below an excerpt from an article, 'Xray Shows Diesel Soot More Dangerous Than Other Soot' in a newsletter by Swiss Federal Laboratories for material, science and technology in 08/07/12

'Diesel particles that have been "born" in the engine under high pressure and immense heat have a graphite structure. In the case of soot particles from wood fires, which have been generated under mild atmospheric conditions, this graphite structure is absent. The functional groups are also different: diesel soot was found to contain carboxyl groups such as those occurring in formic and acetic acid molecules; in the wood smoke, Braun found hydroxyl groups as in ethanol and methanol. There is thus a fine difference between smoke and smoke. The results of the study were quite unambiguous: The "bare" soot particles triggered a genetic detoxification mechanism in the cell cultures. The cells had therefore been under "toxic attack." However, the washed out substances previously adhering to the soot also exhibited an effect: they caused inflammatory reactions in the cells and also acted as a cellular toxin. The World Health Organization (WHO) responded simultaneously. A number of new studies – including those by Braun and his colleagues from Norway and the USA had indicated the carcinogenic effect of soot and sufficiently explained the underlying mechanisms. It was now no longer possible to speak, as had been the case since 1988, of a probable risk of cancer ("probably carcinogenic to humans"). Reclassification followed on 12 June 2012. Diesel soot is now considered a cause of lung cancer "based on sufficient evidence"; what's more, there is a certain probability that diesel soot also increases the risk of bladder cancer.'

To address my concerns, I request that the following actions are undertaken:

1. I would like to see NSW Planning do an Independent Options Assessment to assess alternative locations for the northern ventilation stack and portals.

2. I would like to see local residents provided with more specific detailed information about proposed dispersal of the tunnel pollution and ventilation methods, so they can be fully informed of the local health impacts of the project.
3. I would like a local benchmark to be established to enable appropriate modeling of air quality changes.
4. I would like the State government to apply the Precautionary principle in light of evidence that diesel emissions are carcinogenic.
5. I would like to see precise numbers provided by the statisticians as to how many children attend childcare, preschool, K – Yr. 12, daily within 2 km of the northern ventilation stack, so that the risk factors for adverse health impacts on those most vulnerable are appropriately assessed.
6. I would like the OEH to perform a detailed assessment of the direct and indirect impacts the northern ventilation will have on the heritage listed homes and heritage conservation areas of Wahroonga, especially social, economic, vibration, settlement and visual impacts.
7. I would like the OEH to NOT approve the project in its current design. Alternative locations for the northern ventilation should be explored.
8. I would like the following information provided to residents in the postcodes of Wahroonga 2076 and Hornsby 2077 so that we may be informed as to a base-line for comparing the current air quality situation with the NorthConnex project's projections of air quality impacts,
 - 2012/2013 asthma data
 - 2012/2013 lung cancer register data
 - 2012/2013 COPD data
 - AQI data (including PM2.5 and PM0.1) collected at the proposed sites for the portals and within 1-km and 2-km of the ventilation stacks.
9. I would like to see NSW planning undertake an independent assessment for the provision of filtration. I see no reason why Planning NSW should approve an inferior design.

NorthConnex EIS Submission

Australia is just as capable, if not more so, of providing innovative transport infrastructure solutions.

10. I would like NSW Planning to NOT approve the project in its current form, as it clearly does not meet the principles of Ecologically Sustainable Development as required by the Environmental Planning and Assessment Act.

Thanking you for your time

Yours Sincerely

A black rectangular redaction box covering the signature area.