

9 September 2014

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

NorthConnex Application Number: SSI 13_6136

PLEASE NOTE: I have included my personal information as a form of introduction, believing it to be beneficial in allowing you to gather information regarding perspective and related 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.

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 21yr old student [REDACTED]. I am currently residing in Wahroonga. I object to the location of the northern ventilation on the corner of Bareena and Woonona Ave, Wahroonga.

In my opinion, the Transurban proposal has not only failed to identify promising alternative locations for the northern ventilation/portal, but appears to be actively blocking them. They are justifying this by prejudging other's perspectives as being inferior and not of merit, thus preventing innovative solutions from being pursued. Whilst as a non-expert, I am aware that I differ from the experts in my background and training, but this should not necessarily be viewed as a negative. Following up common sense leads may ultimately contribute to better control of the man-made world around us. Hoebel, in his book on 'The Law of Primitive Man', cites Holmes' classic dictum, "The life of law has not been logic; it has been experience".

Locating the northern ventilation in a residential area of Wahroonga does not make sense to me for reasons listed below:

IMPACT ON HERITAGE LISTED HOMES/AREA

- **I am concerned about the potential impacts to heritage items including:**
 - **Vibration impacts**
 - **Settlement impacts**
 - **Visual impacts**
 - **Negative property price impacts**
 - **Social impacts**

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. Maps that are almost illegible make it difficult to clarify points of confusion.

- **The Wahroonga Heritage Conservation Area is listed under the draft Ku-ring-gai LEP. This conservation area is of heritage significance for its distinctive residential streetscapes containing a significant collection of residences from the Federation and Inter-war periods. Road infrastructure will be brought closer to the Wahroonga Heritage Conservation Area (Ku-ring-gai local government area) boundary. The M1 Pacific Motorway tie-in works will encroach into the eastern edge of this heritage conservation area. The owners of No 35 Bareena Ave have now been approached to have half their property acquired, encroaching further on Bareena Ave. I am gravely concerned that the heritage, environmental, social and economic impacts have not been adequately assessed in relation to the location of the northern stack, and many direct and indirect impacts have not been included in the EIS.**
- **The Wahroonga Heritage Conservation Area and the Wahroonga (North) Heritage Conservation Area are listed under the Hornsby LEP. These conservation areas are of heritage significance for their distinctive residential streetscapes containing typical suburban**

building lots from the Inter War and Post War periods. Adjoining the M1 are residential areas, many of which fall within heritage conservation areas. These residential areas are generally characterised by substantial street and garden plantings and low traffic volumes. The built form typology is generally one and two storey structures on large blocks with mature tree cover. Within this zone, the northern ventilation facility is located at the intersection of Bareena Avenue and Woonona Avenue North. Adjacent land uses comprise detached residential dwellings with two heritage listed properties located across from the site on Woonona Avenue North. The street trees along the western edge of Woonona Avenue North are also heritage listed. I am gravely concerned that the heritage, environmental, social and economic impacts have not been adequately assessed in relation to the location of the northern stack, and many direct and indirect impacts have not been included in the EIS.

- Many of the significant pressures contributing to the deterioration or loss of historic heritage places owe their origins to Australia's changing demographic patterns and corresponding infrastructure demands. Places of cultural significance enrich people's lives and provide a deep connection to community, landscape and the past. They are historical records as important as any tangible expressions of Australian identity and experience. (Australia ICOMOS, sub. 122, p. 6) The threat posed by demographic and technological pressures is immense and unrelenting. I am concerned that the location of the northern stack in the middle of residential Wahroonga in a heritage conservation area, will contribute to the deterioration or loss of historical homes. The EIS does not address the risk impact associated with negative perceptions of stacks as a neighborhood polluter.
- One of the most significant pressures on the conservation of historic heritage places is the high and increasing cost of maintaining these properties. Specific factors that impact heritage listed buildings include: prestige associated with ownership, maintenance, operational costs and perception of risk. The extra costs to maintain buildings in a heritage area is either offset or diminished by the extra value added to the community as a whole. Maintaining the overall heritage of an area

produces an additional desirable variable that people are willing to pay for. This was observed by Sharpe (2006) where ‘the existence of a significant heritage premium reflects a belief on the part of buyers and sellers that a designated heritage area has special qualities that positively influence the value of residential properties.’ The EIS may well be able to demonstrate that it can protect against noise and vibration, but ‘perception’ is just as imperative to the demands of these historically significant streets and homes. The EIS has not adequately assessed this impact.

- The EIS has not assessed the negative impact on property values will have on maintenance and upkeep of heritage homes. The social capital and uniqueness of an area is considered to be an important incentive in motivating people to maintain heritage-listed buildings. This will be compromised due to:**
 - Visibility of the stack being a reminder of local air pollution**
 - The perception that the area is synonymous with a pollution stack.**
 - The perception that the area is not suitable for raising a family**
- The historically significant home ‘Highlands’, a grand federation period residence is situated on Highlands Rd only a short distance from the northern portal/ stack. It is on the market currently for the first time in 30 years. It is set on one acre of botanical gardens with magnificent established shrubs, rolling lawns and plenty of space for children to play. Privately built for Alfred James Hordern, a retail merchant, and his wife Caroline, Highlands is one of the finest examples of Horbury Hunt"s shingled homes, characterised by recessed verandahs, large timber pillars, fine brick chimney stacks and pyramidal roof lines. Many original fixtures and fittings are retained, including unique stained glass windows. Large houses need families. Well-informed parents are not going to risk the health of their children to the well-documented effects of air pollution.**

- **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 young families who attend the multitude of schools with a 2km radius of the stack. The lifestyle and heritage of this unique area will be detrimentally impacted if the northern ventilation is approved in its current design and location**
- **I am concerned that NorthConnex' northern ventilation is already destroying the social fabric of the community. Thirteen properties have been sold recently in Bareena Ave, Wahroonga alone, [730 report ABC Sept 5th] Those who are unconcerned [anecdotal evidence states that many are overseas buyers] are securing bargains! What the NorthConnex proposal has done in just a very short time to the social fabric of Bareena Avenue alone is a travesty.**
- **Please find below an excerpt from the NorthConnex website - Addressing misconceptions around the project.**

'The statement that home values around the stack and portals may drop up to 25 per cent or more and that it will be difficult to sell houses near the outlets appears to have no credible supporting evidence. In the north there has been four properties sold in Woonona Avenue since the end of May with the recent sale of 54 Woonona Avenue, which sold on 30 July 2014 eight days after being put on the market and 56 Woonona Avenue sold on 14 July 2014 only five days after being put on the market and both higher than the price guide provided.'

In addressing this I would like to point out that:

- 1. The homes on Woonona Ave were put on the market at a price that reflected the current concern and debate around the northern stack, hence were higher than the price guide provided.**
- 2. There is local anecdotal evidence that investors and overseas buyers are securing homes at greatly reduced prices.**

3. In addressing community concerns, NorthConnex should not assume that the community are so gullible!

HEALTH CONCERNS

- 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 NOx and 17% of PM10. [There are no percentages listed for PM2.5 and PM0.1 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 in light of the scientific evidence which has been provided over the years.
- 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
- I would also like NorthConnex to not presume the community is so naïve / ill informed as to have their fears allayed by statements such as those provided stating the stack will have a net negligible effect....or that 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] He also stated that people are doing more harm than trucks and cars when they "open a bottle of chardonnay and light a fire". Wood fire particulate matter has, in fact, a different 'make up' from diesel PM. Wood fire PM has NOT been declared a

carcinogen by the WHO. In addition Mr Gay said that of PM2.5 and below, only 7% comes from cars and 50% comes from open fires. I am concerned that the regulatory gap in air quality controls means that many pollutants are not being measured and are thus not factored in to the percentages calculated.

HEALTH RISK ASSESSMENT

- I am concerned that the planning process 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 baseline 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.
- I am concerned that, due to people's health being compromised, there will be a decrease in work productivity and school attendance, as well as added pressure on local hospitals and GP surgeries.

AIR QUALITY

- In July 2012, the WHO classified diesel soot as a carcinogen. This must be accepted as fact and the precautionary principle applied.
- All the health research indicates that young children are particularly vulnerable to exhaust emissions. There are numerous schools, childcare centers/pre-schools within a 1.5 km radius of the proposed stack.[?23] The 9300 schoolchildren calculated by CAPS Group appears to be a conservative estimate, 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 can be appropriately assessed.

- The nearest regional Air Quality Index (AQI) readings have been recorded at a sports field in Prospect and in Lindfield, Prospect being approx. 20km away from the proposed location in Wahroonga. 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. Ultra-fine particulates [PM0.1], which emanate from the combustion processes, mainly vehicle exhaust is particularly concerning. Ultrafine particulates are not monitored, as the law does not require it. 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 information that has come to light in the past decade proving diesel emissions to be carcinogenic.**

TRAFFIC

- I am concerned about the projected rise in traffic volume over the next decade. According to the Sydney Morning Herald (March 15th 2014) the number of diesel vehicles on the road in Australia has more than doubled since 2005. Forecasts of future growth in traffic volumes indicate that traffic in Australia will rise from 55 billion vkt per quarter in 2011, to more than 65 billion vkt per quarter in 2020.**

- Due to being located at the M1/Pennant Hills Rd/Pacific Highway intersection, the area is already exposed to high volumes of transit traffic. 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.
- As NorthConnex has been designed for heavy freight to bypass Pennant Hills Rd, I am concerned about the large amount of diesel emissions that will be emitted from the many trucks using the NorthConnex tunnel.

LOCATION/ DISPERSION

- 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.
- 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. In addition the gradient will contribute to the slowing of traffic which will increase congestion and emissions.
- The NorthConnex EIS appears to be quite '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.
- I am concerned about the multiple flaws in the air quality modeling of the northern stack in the EIS. These include:

- extrapolation of meteorological data from other weather stations which do not reflect the local meteorology, local topography, and the valley location.
 - The use of a coarse topographical model
 - The failure to consider polluted intake air from the Pennant Hills/M2 interchange as part of the project contribution to air quality at Wahroonga
 - The background air quality being based on air quality at Lindfield and Prospect and the lack of any actual data PM2.5 & PM0.1
- **I am concerned that the 'science' is being ignored. This is not the M5East or even Lane Cove tunnel. This is 2014 and the tunnel will not be completed 'til 2019. The health effects of diesel emissions have now been proven.**
 - **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 PM_{2.5} 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. '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, hydroxyl groups as in ethanol and methanol were found. There is thus a fine difference between smoke and smoke'.
- Health effects of diesel exhaust
 - Coughs and phlegm
 - Lightheadedness, nausea
 - Increased susceptibility to allergens like dust or pollen
 - Irritation of eyes, nose, throat and lungs
 - Inflammation of lungs, and increased asthma attacks
 - Respiratory diseases such as chronic obstructive pulmonary disease
 - Lowered resistance to respiratory infection
 - Mutations in chromosomes and damage to DNA
 - Lung cancer

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

1. I would like the OEH to undertake a detailed independent assessment on the direct and indirect impacts of the northern ventilation on historic homes and conservation areas, in particular heritage, social, economic, environmental and visual impacts. The project should NOT be approved by the OEH in its current design.
2. I would like to see NSW Planning do an Independent Options Assessment to assess alternative locations for the northern ventilation stack and portals.
3. 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.
4. I would like a local benchmark to be established to enable appropriate modeling of air quality changes.
5. I would like the State government to apply the Precautionary principle in light of evidence that diesel emissions are carcinogenic.
6. 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.
7. 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.**
8. 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 a 'flawed' design.
9. 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.

I would like to add that this submission has taken up an inordinate amount of my time during a time when I have uni exams and thus I do hope it will in turn, be given due consideration.

I also feel that the mainstream print media, specifically *The Australian*, have not informed the public adequately on this pertinent state issue.

Yours Sincerely

[Redacted signature]

[Redacted contact information]

[Redacted contact information]