SUBMISSION OPPOSING NORTHCONNEX PROJECT
NorthConnex Application number SSI 13_6136

MYSELF

My name is Dr Helen Nassar (professionally Dr Helen Ward)

I am a specialist Anaesthetist practising at a major tertiary centre in Sydney. I am also a mother to a 4 year old girl who attends KU Wahroonga Preschool and 2 year old boy who is at home fulltime.

I live in Wahroonga, with my family, approximately 450m from the proposed northern ventilation stack.
I have lived in Wahroonga since 2006 and love the suburb.

I fiercely oppose the placement of portals and stacks in residential areas.
I OPPOSE THE NORTHCONNEX PROJECT IN ITS CURRENT DESIGN.

There are multiple reasons

1. POTENTIAL HEALTH IMPACTS

As a medical practitioner I have grave concerns that this tunnel and its proposed design with portals and stacks in densely populated residential areas will have a major negative impact on the health and wellbeing of the surrounding communities.
I feel the Wahroonga community is being knowingly and deliberately exposed to dangerous pollution, should this design go ahead as planned.

There is overwhelming medical evidence that traffic pollution causes deaths and many significant and debilitating medical problems. (See DOCTORS LETTER IN APPENDIX for such evidence)

The 2013 assessment by World Health Organisation's International Agency for Research on Cancer (IARC) classified outdoor air pollution as carcinogenic to humans (that is, cancer causing) with particulate matter component most closely associated with increased cancer incidence.

Health impacts include:

- Increased death rate from all causes
- Lung cancer
- Bladder cancer
- Heart attacks
- High blood pressure
- Strokes
- Asthma
- Worsening of any pre existing lung disease
- Reduced lung volumes in children
- Premature birth rates and low birth weight babies
- a link to Autism
- Acceleration of dementia
- Short term health impacts such as cough, watery eyes and asthma exacerbations

- THERE IS NO SAFE LEVEL for exposure to air pollutants including PARTICULATE MATTER

- PM1 (microparticules, ultrafine particles) are not modelled in the EIS (Only included in the PM2.5 modelling) however there is a growing body of medical evidence that PM1 cause significant health effects even at low levels.

- The Cowie study on heath effects on people surrounding the lane cove Tunnel stack found health impacts which couldn't be explained by the measured pollutants, suggesting the effects were due to UNMEASURED pollutants.

- The Health impact section of the EIS states health effects will be negligible, however the entire health impact section is based upon data on air pollution levels and particulate matter (PM 2.5 and PM10 only) in the air quality section of the EIS

- The Air Quality section of the EIS is seriously flawed (see next section of submission) and therefore I have absolutely NO CONFIDENCE IN THE CLAIMS MADE BY THE HEALTH IMPACT SECTION OF THE EIS. All conclusions in the health impacts section are based upon this flawed data.

As a doctor, well read in scientific research and trial design, this renders the Health Impact Section totally invalid.

- THE GOVERNMENT HAS A DUTY OF CARE TO THE COMMUNITY TO AVOID DOING HARM

WHAT I WANT TO BE DONE

- **The project should NOT be approved in its current design.**
- Reconsider the tunnel as a means of solving a problem on Pennant Hills Road.
- Consider alternates to a tunnel
- Move the portal and stack to a non residential area and respect the precautionary principle
- Move the stacks to non residential areas
- Filtration of the stacks should be implemented wherever it is.
- Implementation of a long term study into the heath impacts on children and residents within 2 km of the propose stacks. This should be a condition of approval in the proposals current form.
- Notification the public WHO exactly (Transurban or the government?) will be responsible should negative health impacts occur immediately or at a later date. For example a cluster of lung cancer in the area that cannot be explained by anything other than a pollution stack in the area.
- The EIS AIR QUALITY and HUMAN HEALTH IMPACTS sections need re-writing after they are performed properly. New site specific data needs to be collected and used. (see next section)

2. MAJOR FLAWS IN AIR QUALITY SECTION OF EIS

I have no confidence in the EIS air quality section. Multiple flaws exist. I feel that this is totally unacceptable for a project of this size, costing $3billion.
A project of this magnitude should have a near perfect EIS, that a non engineer shouldn't be able to find obvious fault with.
As this project is designated Critical State Significant Infrastruture (CSSI), there is very little avenue for opposing the project. All the more reason that the EIS should be of the very highest quality.

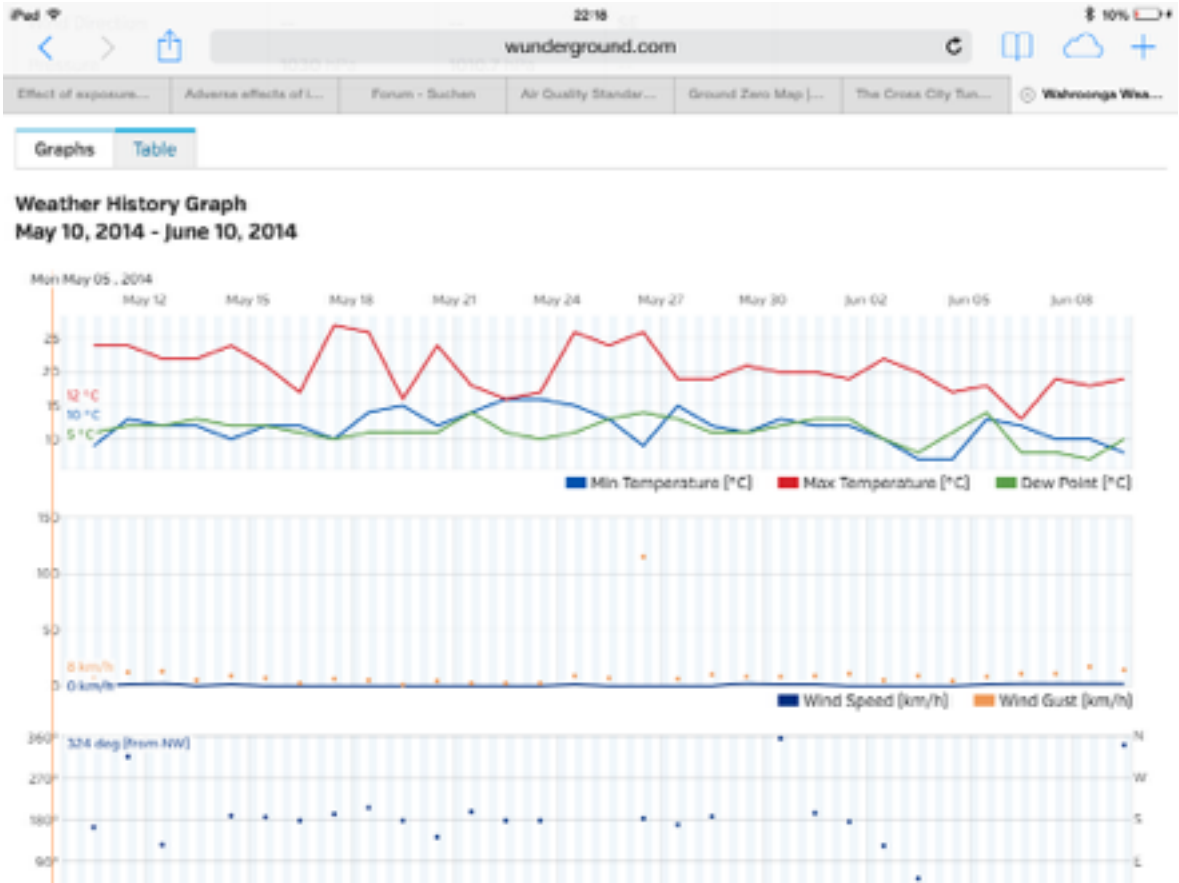
The EIS air quality section should be flawless for such a project to be approved.

Problems with the EIS:

- Computer modelling and assumptions were used for all conclusions drawn
- PM1 ARE NOT MEASURED
- There is a **total failure to collect *site specific* ambient air quality data and meteorological data.** No local area data has been collected for more than few months. Several years of local data should be available to accurately determine air quality.

- **Background air quality** was measured distant from Wahroonga , at Lindfield (10km away) and Prospect (20km away)
- Lindfield monitoring station doesn't comply with Australian Standards and doesn't measure PM2.5
- Complete failure to consider and include the polluted intake of air from the busy M2/Pennant Hills Road interchange as part of contribution to air quality at Wahroonga.

- **Meterological data** used to determine dispersion was taken from 5 weather stations with different weather conditions to Wahroonga.



- Wahroonga wind speeds are often very low and inversion phenomenon common.
- The air in Wahroonga is frequently still. See the link taken from a local Wahroonga weather station: http://www.wunderground.com/personal-weather-station/dashboard?ID=INEWSOUT355#history/s20140707/e20140707/mdaily
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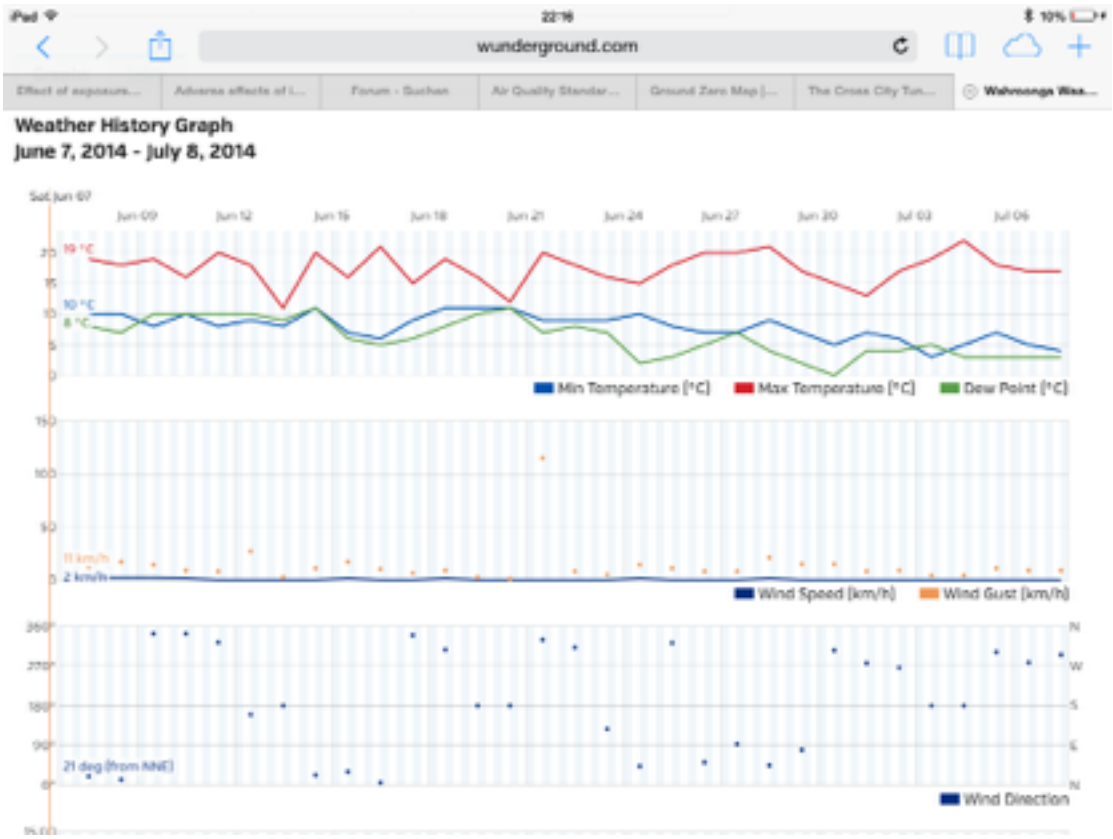
- The information that can be obtained from this is that wind speeds in Wahroonga on a typical winter day can UNDER 5KM/h. The average wind speed since May 2014 is 0.6km/h with the max wind speed being only 14.8km/h. This is insufficient for dispersing pollutants.



The above graph shows an example of average wind speed of 1.6km/h.

This is well below the speed required to assist in dispersion.

- **Topographical data** was modelled using **satellite data only accurate to 6m**. This gives **unacceptable level of error** when dealing with dispersion from a proposed 23m high stack.

- **The proposed Wahroonga stack is also to be in a valley**. It will be only 7m above the valley ridge.

- **These features directly contradict the ideal features needed for ideal dispersion, and in fact fit perfectly for a POOR DISPERSION MODEL AS DESCRIBED BY NORTHCONNEX'S ONLY INDEPENDENT AIR QUALITY EXPERT, Dr Gerde Kuschel.**

- To quote Dr Kuschel (available on video gallery on NorthConnex website at around 19 minute mark:

"*…in an urban environment, what's this big deal about dispersion? What do I mean by that? Well, looking at cases of good dispersion, and that would be an example of where you have a very open area with a lot of wind going through, (umm) the emissions are very well dispersed. If you have those emissions you probably wouldn't see much of a change. The box that constrains the emissions - from your topography, from your meteorology – is quite large.*

A diagram showing a large clear box headed "Good Dispersion" and smaller greyed box headed "Poor Dispersion" was then shown.

However, if you look at a situation for poor dispersion, and this can happen if you've got a built up, (you know) canyon in an urban environment between buildings, or you've got a topography with valleys, or it's a very calm situation, then for the same amount of emissions the box is much smaller because the emissions can't disperse as freely, so that's the concept around dispersion."

See the Topography map below.

This map was provided by independent assessors used in the Ku Ring Gai council submission.
Yellow lines show the NorthConnex data used, and the BLACK lines show actual true topographical readings.
There is a difference of 10m in some places!

JACOBS

Figure 2.1 : Comparison of assumed SRTM data resolutions

WHAT I WANT TO BE DONE:

-Reconsider the tunnel as a means of solving the pennant hills road traffic problem

-Move the portal and stacks to a non residential area, thereby respecting the precautionary principle and the duty of care as a government to do no harm.

-The EIS health impact and therefore air quality sections need to be undertaken again as there are multiple flaws. This is totally unacceptable.

- The Air Quality data needs collecting at WAHROONGA for more than a couple of months. (ideally for a few years) so that reliable raw data is used rather than assumptions and modelling based on data collected distant from the site relevant.

- New data is needed for accurate and site specific topography and meteorology.

-Filtration of the stacks wherever they are should be implemented.

-Reconsider the design of the stack to aid proper dispersion. The 23m high stack is only 7m above valley ridge. For any meaningful dispersion, common sense tells your it should be much higher.

-Should the project be approved, I request continuous air quality monitoring in Wahroonga and a cap on the maximum acceptable level of exposure to all measured pollutants.

3. STACK IN RESIDENTIAL AREA IS NON STANDARD

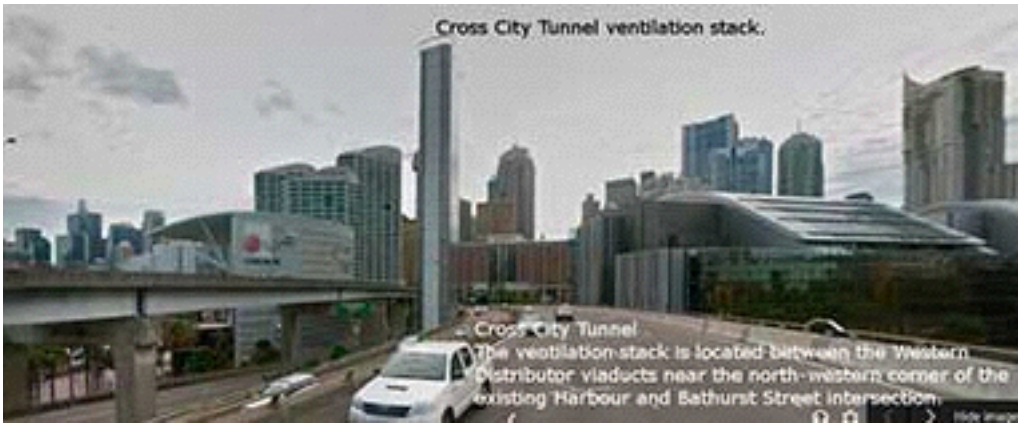
Other ventilation stacks for tunnels in Australia and New Zealand are in non residential (mostly industrial) areas.

The EIS's for both the Lane Cove Tunnels and Cross City Tunnels state that their stacks are in industrial and commercial areas respectively.

This tunnel will be the longest in Australia to date (9km) with a 23m high stack.

EXAMPLES OF OTHER STACKS ALL IN NON RESIDENTIAL AREAS:

Cross City Tunnel: COMMERCIAL AREA (as defined in the EIS for this tunnel)

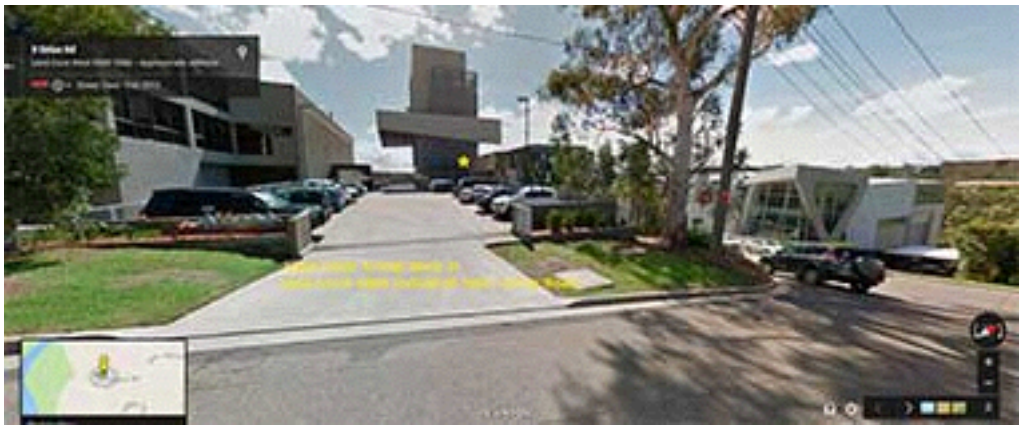


City Link Melbourne:

Clem 7 Brisbane:

Airport link Windsor:

Lane Cove Tunnel : INDUSTRIAL AREA LANE COVE (as defined in the EIS)

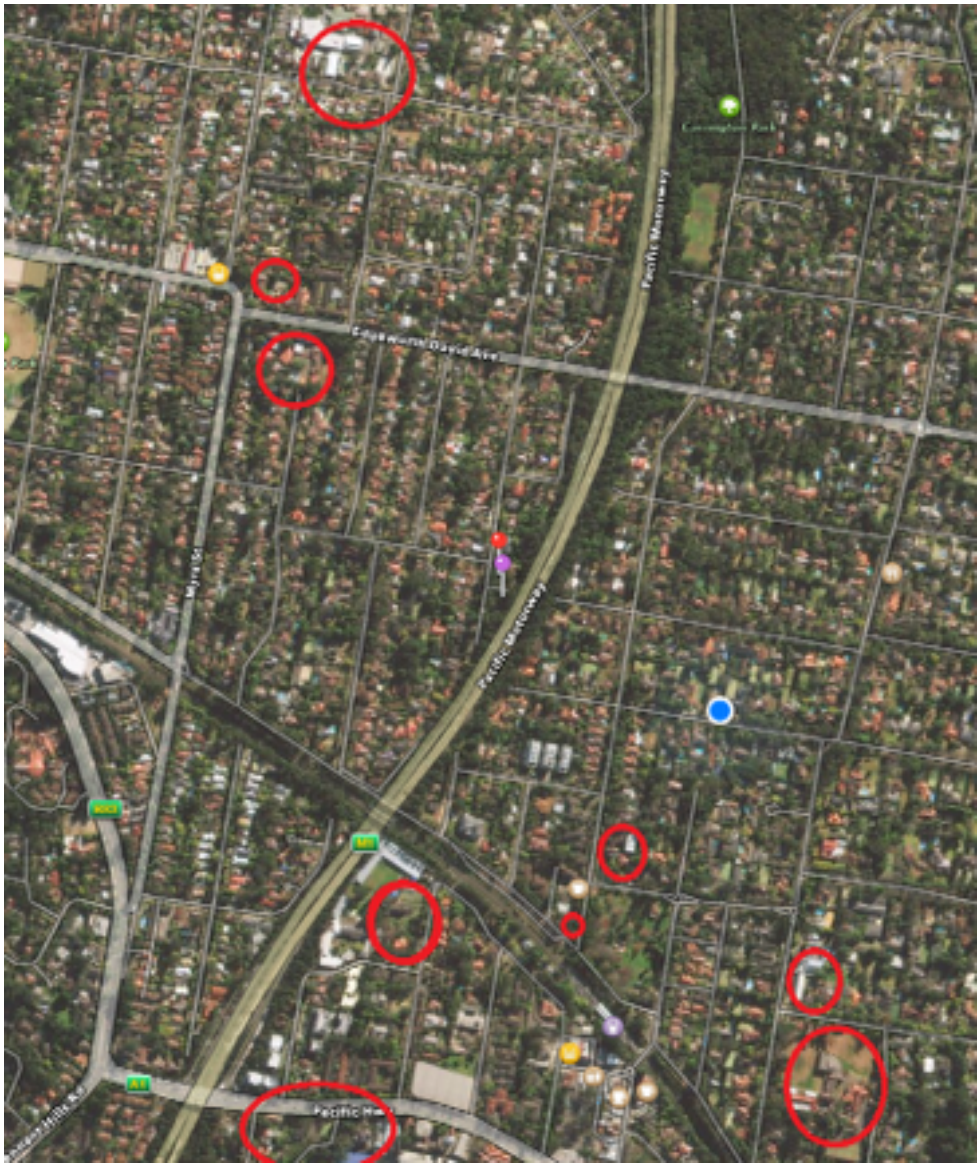


Lane Cone Tunnel: INDUSTRIAL AREA ARTARMON (as defined in the EIS for this tunnel)

In fact in the director generals report for the Lane Cove tunnel, the stack in the Lane Cove industrial area was moved to be further away, within the industrial estate, from the nearest school (Lane Cove West Public School which was near this industrial estate)

There is obviously NO OTHER STACK IN AUSTRALIA IN A COMPARABLE RESIDENTIAL AREA WITH ALMOST 10,000 SCHOOL CHILDREN WITHIN 1.5 Km Radius.
This is unacceptable.

Residents of Wahroonga and West Pennant Hills should mot be made guinea pigs for what may happen to the health of residents living close to stacks.
See below a satellite image of Wahroonga. Clearly a densely populated residential area. No industrial site anywhere.
Schools are circled. The stack site is pinpointed.



The Governments own NHMRC document for Air Quality in and Around Tunnels 2008 (p69) following the M5East tunnel clearly states that:

“From the point of view of the local neighbourhood, it is at the tunnel openings that the air-quality impact of the tunnel is most keenly felt. This is the zone within which the road tunnel will inevitably worsen local air quality in comparison to an equivalent road without a tunnel.”

If it is considered that the impact on the local environment is too high, the tunnel air can be vented elsewhere, at a ventilation station and possibly via a tall stack. In some cases, this stack is some distance from the tunnel so that tunnel air may be vented into the atmosphere in a nonresidential location.

One of the great advantages of road tunnels is the opportunity to deliberately site portals (or stacks) away from sensitive receptors so that road transport emissions may be removed from dense residential areas, improving local air quality.

WHAT I WANT TO BE DONE:

- **The project must not be approved in its current design.**

- Move the stacks into non residential areas, thereby RESPECTING THE PRECAUTIONARY PRINCIPLE, and the DUTY OF CARE of a government to do no harm.

- Undertaking of an independent options assessment process, for assessing alternate location for the stacks and portals.

4. FILTRATION HAS NOT BEEN EVALUATED

ESP (Electrostatic Precipitation) hasn't even been evaluated at all in the EIS. These ESPs are in use in stacks in other countries which have tunnels such as Norway, Spain, Germany and Japan.
The justification in the EIS for not considering filtration is unconvincing.

Australia is a FIRST WORLD COUNTRY.

Filtration eliminates 90% of the dangerous particulate matter when fitted correctly (not retrofitted as an after thought) and turned ON!

WE SHOULD HAVE A TUNNEL AND STACK WITH A FIRST WORLD DESIGN.

WHAT I WANT TO BE DONE:

- Filtration to be fully evaluated and considered as a real option for these stacks , ESPECIALLY if they are to be near residential areas.
- Undertaking of a LifeCycle Analysis and assessment for the provision of filtration.

5. PORTAL EMISSIONS

I am very concerned about future provisions for portal emissions in densely populated residential areas. These emissions are very dangerous to human health as they are undiluted and at ground level.
I cannot believe the NorthConnex claim that there will be ZERO portal emissions. They have not verified this adequately.

WHAT I WANT TO BE DONE

- an independent review to be undertaken of the ventilation systems, to ensure the claim of zero portal emissions is justifiable.
- A guarantee for ZERO portal emissions at any point in the future and transparent monitoring results of any such portal emissions.

6. ECONOMIC IMPACTS

I am concerned that economic effects that have not been taken into consideration will play a major role in costs:
• future health costs
• school enrolments
• house prices (I have personally had a real estate value my house with and with our the stack, the difference being 30%)

Construction of major permanent infrastructure projects need to be designed with minimal health impacts based on a precautionary principle. I strongly feel that this has not occurred in the design of the NorthConnex project.

Major infrastructure projects need to have transparent and thorough cost benefit analysis performed prior to commencement of the approval processes. This needs to be displayed in any associated EIS. NorthConnex needs to undergo such a process as part of its EIS review process. This needs to be transparent and accessible to the general public.

WHAT I WANT TO BE DONE

- Move the stack way from residential area, densely populated with schools and aged care facilities and hospitals.
- Produce a transparent Cost-Benefit analysis to be made available to the public.

7. NOISE

As a resident living 450m away form this development, I am very concerned about the negative effect construction noise will have on our household. I am concerned about it increasing stress and causing poor sleep. My children sleep during the day and it will no doubt impact on this. The noise from construction will take its toll on our family's quality of life.

WHAT I WANT TO BE DONE:

- I request that alternatives to this project be seriously considered
- I would request a guarantee that if the project is approved that construction only occur in standard construction hours.
- I request a 24 hour hotline for complaints should conditions for construction with regard to noise, be broken.

8. ENDORSEMENTS

I would also like to endorse other submissions, namely:

1. Dr Raymond Nassar's submission
2. CAPS group submission
3. PHAA (Public Health Association of Australia) submission
4. Ku Ring Gai Council's submission
5. Prof. Richard Chard's submission
6. Mr Graeme Foley's submission
7. Dr Kirthana Sharma's submission
8. Sydney Adventist Hospital's submission
9. Mr Lin Ma's submission (re cut and cover option)
10. Mr Jonas Ball's submission
11. Ms Fiona Schweer's submission
12. Mrs Doris Hill's submission

9. CONCLUSION

I strongly oppose the NorthConnex project in its current design.

I oppose placement of stacks and portals within densely populated residential areas.
I have no confidence in the conclusions drawn in the human health impacts section of the EIS as they are based on seriously flawed air quality data. This, in my opinion, renders the health impact section totally invalid.

I feel the current design is NOT a Gold standard design.

The locations and heights of the stacks is inadequate to ensure dispersion. The Wahroonga stack is in a valley and is in an area with little to low wind speed at all times, prone to inversion phenomena.

As a doctor, I feel the current design poses a serious threat to human health. This is my major concern.

I am putting the government on notice regarding what I believe to be gross negligence in DUTY OF CARE to the community and public health, should this project be approved in its current state.