

**Submission on the Environmental Impact Statement  
for the Beaches Link and Gore Hill Freeway Connection  
Project Application Number: SSI-8862**

**Air Pollution in North Sydney**

**Objection:**

I wish to object to the fact that the area of North Sydney, especially those parts close to the very large ventilation stacks proposed for the small 'island' near the Ernest Street bridge, will be subject to increased air pollution.

In the booklet, *Technical Paper TP05: Road Tunnel Stack Emissions*, dated November 2018, Dr Ian Longley writes

Stacks are usually required to be taller than adjacent buildings and vegetation to be effective. Consequently, stacks in highly built-up areas tend to be taller. Where the stack is located in close proximity to a building taller than around one-third the height of the stack, modelling should be conducted that explicitly accounts for the interaction between the building and the plume to ensure that dispersion will be appropriate.

Figure 5 in this booklet also states, "Maximum concentration from stack emission is 200-1200 metres away from the stack for a 20-40 metre stack."

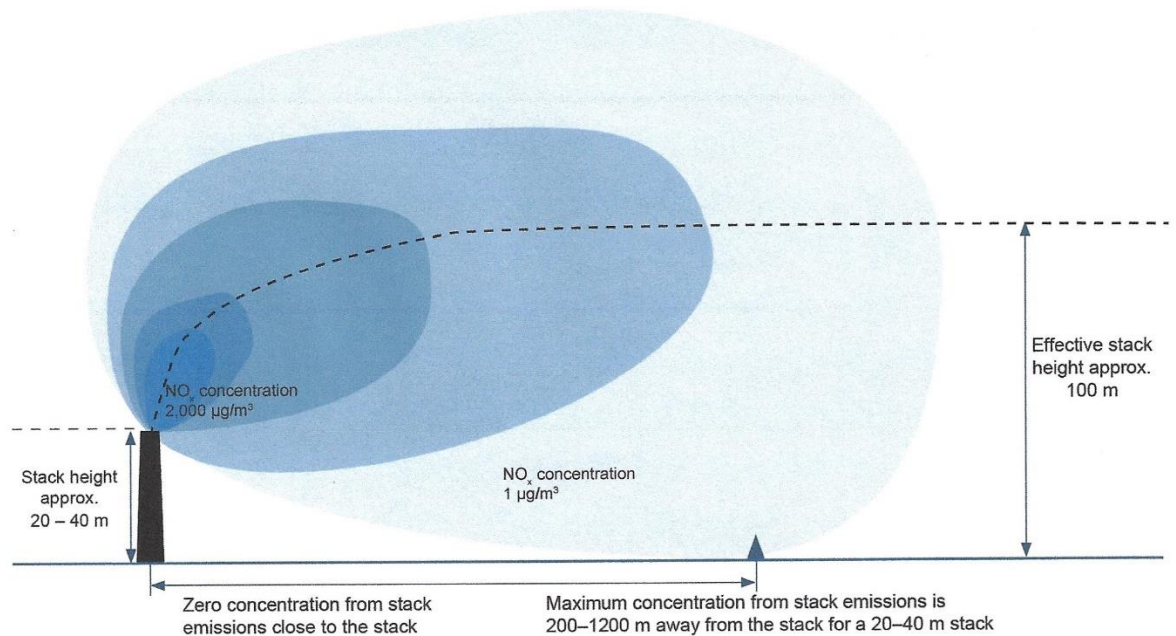
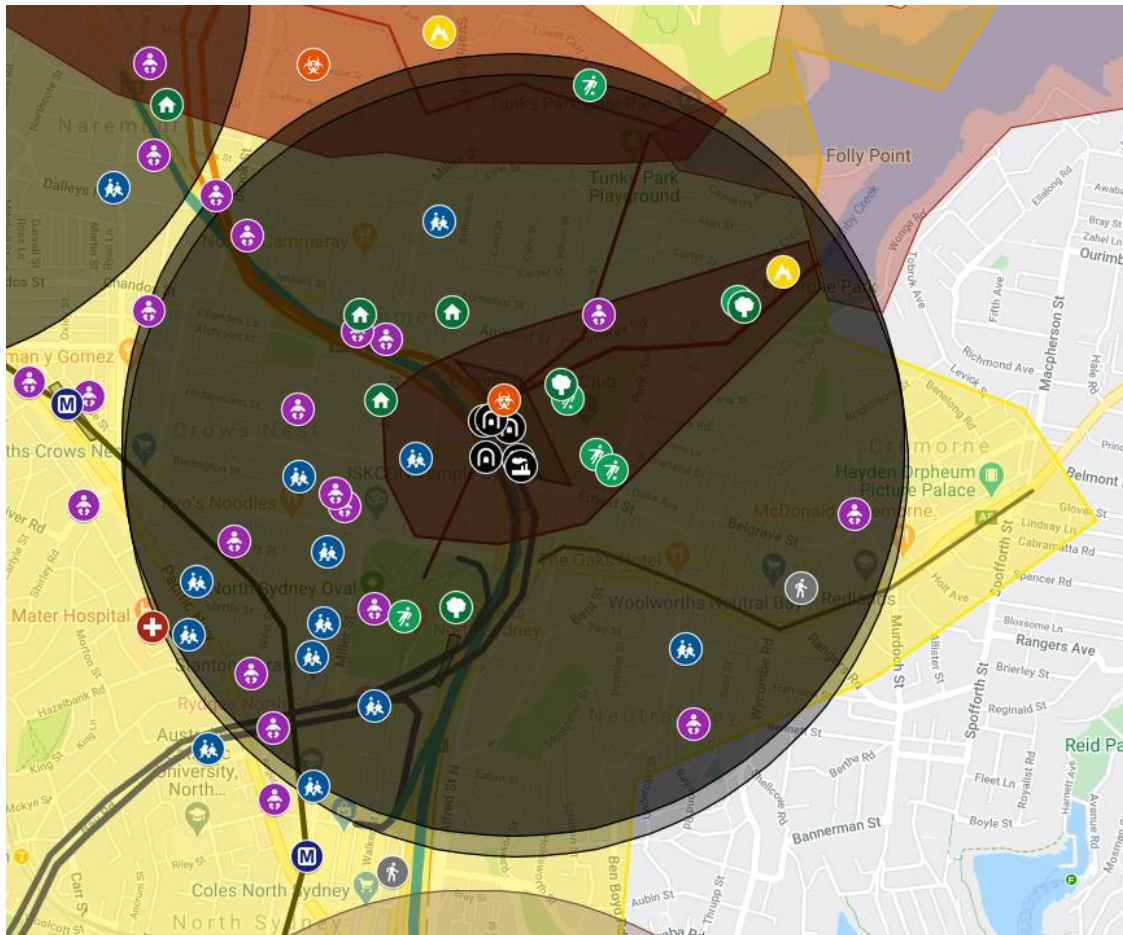


Figure 5: Features of dispersion from a typical stack. The air pollution leaving the stack is rapidly diluted by wind and air movements. Note how only a small proportion of the plume is likely to reach the ground – most remains above the height of the top of the stack

Source: Technical Paper TP05: Road Tunnel Stack Emissions by Dr Ian Longley, November 2018, page 8

The proposed ventilation stack will be 30 metres high. The above statement therefore applies to the areas 200-1200 metres away from the stack.

The circle in the following diagram has a radius of 1600 metres.



Aside from the local residents living within this circle, there are Schools (Blue circles), Preschools (Purple circles), Children's and others' Sporting Facilities (Green Circles) and a Hospital (Burgundy Circle).

The North Sydney area is Sydney's largest precinct for schools. More than 10,000 children will be directly impacted by the emissions from this project, as well as from the emissions from the Western Harbour Tunnel.

The schools within a radius of 200-1200 metres from the ventilation stack are as follows:

- Anzac Park Public School - 250 metres from the ventilation stack
- Cammeraygal Senior campus - 800 metres from the ventilation stack
- North Sydney Boys High School - 800 metres from the ventilation stack
- Neutral Bay Public School - 900 metres from the ventilation stack
- Marist North Shore - 950 metres from the ventilation stack
- Cammeray Public School - 950 metres from the ventilation stack
- St Marys Primary School - 1000 metres from the ventilation stack
- Wenona - 1100 metres from the ventilation stack
- Monte Sant' Angelo - 1200 metres from the ventilation stack
- Redlands - 1200 metres from the ventilation stack
- Cammeraygal High School Pacific Highway - 1600 metres from the ventilation stack

This list does not include child care centres of preschools which will also be impacted.





















Furthermore, in North Sydney, Crows Nest and St Leonards, there are many buildings taller than 30 metres within this circle – either existing buildings, buildings under construction or proposed developments. These tall buildings are an obstruction to the dispersal of the polluted air coming from the stacks. The residents/occupants of these buildings are also subject to poorer air quality at heights above 30-40 metres.






The new developments at St Leonards include residential apartments located higher than 30 metres.

A list of buildings in North Sydney higher than 30 metres include:

**Tallest buildings in North Sydney**

Here you see the 20 tallest buildings of [North Sydney](#). This list only regards multi-story buildings.

#	Building	City	Floors	Height	Year
1	 100 Mount Street	<a href="#">North Sydney</a>	38	149 m	2019
2	 Northpoint Tower	<a href="#">North Sydney</a>	35	131 m	1980
3	 177 Pacific Highway	<a href="#">North Sydney</a>	32	130 m	2016
4	 Optus Plaza	<a href="#">North Sydney</a>	28	120 m	1992
5	 Beau Monde Apartments	<a href="#">North Sydney</a>	36	115 m	2004
6	 Innovation Place	<a href="#">North Sydney</a>	25	112 m	2007
7	 80 Arthur Street	<a href="#">North Sydney</a>	30	97 m	2016
8	 141 Walker Street	<a href="#">North Sydney</a>	30	97 m	1987
9	 Novell House	<a href="#">North Sydney</a>	23	95 m	1972
10	 100 Pacific Highway	<a href="#">North Sydney</a>	22	90 m	2006
11	 AAMI Centre	<a href="#">North Sydney</a>	25	86 m	1992
12	 Latitude on Lavender Bay	<a href="#">North Sydney</a>	25	85 m	1974
13	 Belvedere	<a href="#">North Sydney</a>	22	84 m	2013
14	 Blues Point Tower Apartments	<a href="#">North Sydney</a>	26	83 m	1961
15	 The Ark	<a href="#">North Sydney</a>	21	82 m	2010
16	 Fujitsu	<a href="#">North Sydney</a>	20	81 m	1975
17	 Holmsdale Tower	<a href="#">North Sydney</a>	24	75 m	1970
18	 168 Walker	<a href="#">North Sydney</a>	20	73 m	1973
19	 Young & Rubicam	<a href="#">North Sydney</a>	17	71 m	1986
20	 The Milson	<a href="#">North Sydney</a>	25	70 m	2000

 existing
  under construction
  planned
  unbuilt
  demolished

Source: <https://www.emporis.com/statistics/tallest-buildings/city/103393/north-sydney-australia>

The emissions from these ventilation stacks are therefore going to impact on the people living, working, or playing within the 200-1200 metre distance from the stacks.

There is going to be a significant risk to health and safety, especially to children, the elderly and vulnerable people.

As Dr David Boyd states in his article *The Human Right to Breathe Clean Air*:

For decades, governments have treated air pollution as an environmental issue. Recently it has started being treated as a health issue ... Clean air is not an optional policy objective. It's a fundamental human right.

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6923778/>

## **Solution:**

One solution is to improve the public transport option to the northern beaches by increasing the number of buses and feeder parking stations to encourage people to use public transport more and cars less.

An additional solution is to filter the ventilation stacks.

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