A People's M4 EIS

A People's M4 EIS

This website exists to help people take back some control over the planning process. It is independent of any other organisation and is entirely volunteer run and funded.

Our aim is to help people access information needed to understand how the NSW Baird government's 33 kilometre Westconnex tollway project would affect not just transport options but also the future environment and health of Sydney. The People's M4 EIS is part of a broader community attempt to open up public debate about the Westconnex and counter the lack of transparency in decision making surrounding it.

The Westconnex is a single project, to be delivered in five separate stages. This means that while supposed broad benefits of the whole project are constantly proclaimed by the NSW government and Sydney Motorway Corporation, the negative impacts of the whole project are never assessed.

The EIS for the Westconnex M4 East was published by the NSW Department of Planning as a large PDF document – over 1GB, and nearly 5000 thousands of pages – on September 9, 2015. The community was given only 45 days to submit responses, although this was extended by ten days to November 2 because of a failure by the Westconnex Delivery Authority to file all the required documents.

Before waiting for the results of the EIS and planning process, the Westconnex Delivery Authority has already awarded the contract to build the M4 East to a consortium led by CIMIC (previously Leightons) and Samsung.

The way that NSW Planning Department and the Westconnex Delivery Authority have designed and published the EIS does not make it accessible. We've made it a little easier to find the bits you want (http://m4eis.org/category/table-of-contents/) in the PDFs.

We have published several parts of the EIS in a format that is easier to read (http://m4eis.org/category/selected-sections/) and enables you to cut and paste text more easily to build your own submission.

We have solicited and shared some 'plain English' commentaries to help you to make your own informed assessment of the Westconnex M4 tunnel. One of the problems with the EIS is that it fails to engage with contemporary developments in transport planning and critiques of its approach. This is a serious problem when the decisions to be made will have a huge impact.

We will be publishing some sample submissions, so that you can see what other people do or don't like about the M4 East project.

You can comment on any page or reply to anyone else's comments. If you have made a submission you would like us to share, please let us know. If you have ideas for how we can develop the People's EIS, leave a comment on this page.

In this way we hope together to break through the daunting amount of data and help the community to build strong individual and group responses.

Your contributions will help build an independent source of information for the community about the project.

Here's how you make a submission to the official planning process :

http://m4eis.org/2015/09/11/how-to-object/ (http://m4eis.org/2015/09/11/how-to-object/)

Additional Note on November 2

Parts of the People's M4 EIS has been submitted to the NSW Department of Planning to be considered as part of the assessment process.

We will continue provide updates on the rest of the planning process.

People: Many people have contributed to this project including Ben Aveling, Wendy Bacon, Luke Bacon, Henare Degan, Nicole Gooch, Miska Mandic and others.

8 thoughts on "**A People's M4 EIS**"

1. **Kerry** says:
   27/09/2015 at 11:10 am Edit

   Fantastic! Thank you to those who have worked so hard to get this site up-and-running. It will assist us residents to share our concerns and share what we have learned in interactions with the WDA "team".

Reply (http://m4eis.org/?replytocom=45#respond)

2. **Kathryn Calman** says:
   27/09/2015 at 3:14 pm Edit

   This is an amazing piece of work that you have put together. Thank you!!!

   Reply (http://m4eis.org/?replytocom=46#respond)
3. **Anthony johns** says:
   30/09/2015 at 9:44 pm Edit

   I think the project would be more worthwhile if it were less obviously partisan. As it stands, it's hard to believe anything you solicit written in "plain English" won't just be polemic

   Reply (http://m4eis.org/?replytocom=47#respond)
   - **wendybaconblog** says:
     01/10/2015 at 3:34 pm Edit

     The EIS is written entirely from the perspective of the 'proponent' which is Westconnex. Aecom that managed and prepared much of the EIS has involvement in many aspects of this project – from concept design to 'traffic director'. So it is reasonable to warn people to treat official EIS data and its presentation with scepticism. Likewise claims of critics should also be tested. One of the ideas behind the project is to subject the empirical claims to scrutiny so if you see any factual claims by critics you think are false Anthony Johns please be sure to comment.

     Reply (http://m4eis.org/?replytocom=48#respond)
4. **Michael Luis** says:
   06/10/2015 at 8:30 pm Edit

   Keep up the good work.
   Big thanks to all the contributors.

   Reply (http://m4eis.org/?replytocom=76#respond)
5. **Janet Dandy-Ward** says:
   26/10/2015 at 10:22 pm Edit

   Thank you so much for putting this together, this is really great information!

   Reply (http://m4eis.org/?replytocom=233#respond)
6. **Phil Siefert** says:
   31/10/2015 at 5:43 pm Edit

   Given the steps that have been taken by the NSW Government to privatise Westconnex Delivery Authority and NSW Planning department in the name of "fast tracking": such as construction awards before planning approval, lack of independent review, and no obvious review of public transport options – I have never felt more sceptical and disillusioned by a government.

   Thank you for the clarity of your submission —

   Reply (http://m4eis.org/?replytocom=302#respond)
7. **Matt Mushalik** says:
   02/11/2015 at 9:08 pm Edit

   The full listing of all chapters was very useful when writing my submission which is in the downloads section of my website

http://crudeoilpeak.info/downloads (http://crudeoilpeak.info/downloads)

Reply (http://m4eis.org/?replytocom=354#respond)

A People's M4 EIS

AECOM poor choice for EIS given conflicts of interest

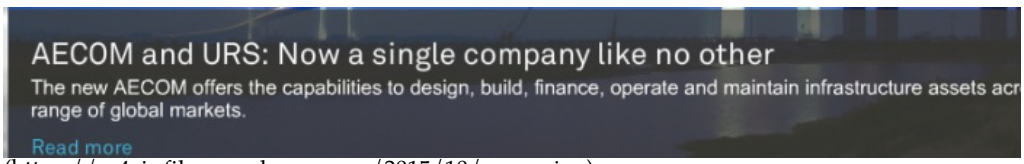
25/10/201528/10/2015 wendybaconblog Commentaries & Objections AECOM, Ashfield Council submission, Clem7, Leightons Contractors, Nimbus Consulting, RiverCity Class Action, Tishman Constructions, Traffic Predictions
By Wendy Bacon

Those who have submitted contributions to People's EIS have pointed out serious flaws in Westconnex EIS reports. On Friday, Ashfield Council published its submission (http://www.ashfield.nsw.gov.au/page/our_submission.html), which includes further critical reports from independent consultants.

It is therefore relevant to look more closely at the company that prepared the M4 EIS.

If you look inside the volumes of the M4 EIS report, you will see that they have been signed off by AECOM. This is the company that has been commissioned by Westconnex to produce the 5000 page EIS for the M4 East. It will also be responsible for the EIS M5 tunnel report that will be lodged with the Department of Planning before the end of this year.

Although not known to many Australians, AECOM is a huge global engineering company which has 100,000 employees involved in everything from oil and gas (http://www.aecom.com/What+We+Do/Oil+and+Gas/_projectsList/Firebag+Oil+Sands) to military contracting (http://www.aecom.com/What+We+Do/Government/Logistics,+Operations+and+Maintenance/Vehicle+and+Equipment+Maintanence) in 150 countries. If you imagined that the NSW Baird government would insist that Westconnex hire a company with a key focus on environmental science and social impact assessments to do an independent evaluation of a project of this significance, you would be wrong. Visit AECOM's website and you will see that it features tall buildings, US tanks and a huge ferris wheel. Look at its recent releases and you will see that a couple of months ago, AECOM was awarded a contract to provide engineering and technical support services to the Naval Surface Warfare Center (NSWC) Dahlgren Division. Just a few weeks later it announced had won a $95 million contract to support the Corpus Christi Army Depot (CCAD) in Texas. It owns Tishman Constructions that has been contracted to build new headquarters for Citi bank (http://www.marketwatch.com/story/aecoms-tishman-construction-to-manage-construction-of-leading-financial-firms-global-headquarters-in-lower-manhattan-2015-06-09) in Lower Manhattan in New York.



(https://m4eis.files.wordpress.com/2015/10/aecom.jpg)

Over the past 12 months, AECOM has more than doubled its revenue to $20 billion via several acquisitions, the biggest of which was URS Corp. It claims to have "dramatically accelerated its strategy to create an integrated-delivery platform with superior capabilities to design, build, finance and operate infrastructure assets around the world." In February this year, AECOM was the first big company to sign a covenant with the UK defence forces pledging that by 2017 it would like to see "75% of the companies in its supply chain demonstrate their support for the Armed Forces through their recruitment, charitable work or other initiatives." In Australia the company announced that it would become more involved in maintenance, construction (http://www.smh.com.au/business/construction/aecom-uses-76b-urs-takeover-to-expand-into-construction-20150325-1m7drz.html) and military contracts. It is also moving into the area of real estate financing which is another shift away from its more traditional Australian focus on engineering and design.

One might like to think that a company of this size would have the clout to produce a study with the independence that the public has a right to expect for a project that will affect the lives of millions and cost the public $15.5 billion. AECOM undoubtedly employs highly skilled environmental scientists and engineers, many of whom would prefer to be working on more socially constructive projects. But the company in Australia is under a lot of pressure. Last year the SMH reported (http://www.smh.com.au/business/construction/aecom-uses-76b-urs-takeover-to-expand-into-construction-20150325-1m7drz.html):

> "Its (AECOM's) Australian business also needs to find new sources of income to counter falling revenues. Its Australian revenues dropped by around $US150 million (A$190 million) in the 12 months to September 2014, halving a $US300 million (A$381 million) drop in revenues over the previous 12 months as demand for mining-related services weakened, according to AECOM's annual report."

The Australian arm is only a small part of the global company and is totally dependent for its survival on turning around a solid flow of contracts to satisfy the company directors and managers in New York, who in turn must keep profits flowing through to the managers of the hedge and retirement funds that are its major shareholders on the New York Stock Exchange. Government contracts are crucial in providing a solid flow of funds and jobs, which are dependent on healthy margins on contracts. This may explain why there appears to be many gaps in the EIS which gives the impression of being hastily thrown together to meet the tight deadlines set by the Westconnex Delivery Authority, NSW Roads and Maritime Services and the project's biggest fan the Minister for Roads Duncan Gay.

(https://m4eis.files.wordpress.com/2015/10/11011815_1910095755881272_916482937727738566_n.jpg)

Stop Westconnex campaigners were out and about in NY this week – AECOM's headquarters are in New York

But apart from its interest in ongoing contracts in the competitive global world of infrastructure provision, there are other reasons why when it comes to Westconnex, AECOM is far from independent,

For a start AECOM is deeply involved in a number of other aspects of Westconnex. It has been paid for a range of other services including project concept development, tunnel design and for communication services. The apparent conflict of interest between its involvement in the construction process and its management of the EIS was raised earlier in the year by New Matilda in an article by the author and Luke Bacon (https://newmatilda.com/2015/06/04/westconnex-mike-bairds-tunnel-big-corporate-love/).

AECOM has also been working with Urban Growth NSW to develop proposals for redevelopment along Parramatta Road. Urban Growth NSW works in close partnership with Westconnex.

It is not clear how AECOM manages these apparent conflicts of interest internally because questions from the media and the public to AECOM about its relationship to Westconnex and its role in the planning process are steered back to the communications branch of Westconnex.

According to searches of the NSW tender database and freedom of information searches by online publication New Matilda, the NSW government has already paid AECOM more than $33 million to work on the Westconnex. Of this amount, AECOM has be paid nearly $5.8 million for the M4 EIS.

AECOM has also been paid nearly $25 million to work on the Stage 2 M5 tunnel, including:

- nearly $13 million to be the 'technical and environmental' advisor for the M5 tunnel
- $1.3 million for 'industry partner design' which presumably meant working closely with the construction companies and sub-contractors who were interested in constructing the Westconnex M5 tunnel. These industry partners would have included Leightons Contractors with which AECOM has an ongoing business relationship including through the Kempsey by pass (https://www.leightoncontractors.com.au/projects/kempsey-bypass/) project on the Pacific Highway, the construction of a command headquarters for the Australian Defence Forces and a major road project in Western Australia.
- nearly $2 million to develop a 'close-down' plan for the Alexandria Landfill site (no information on this contract is publicly available although the waste facility on the site closed down 10 months ago). There have been repeated complaints to the NSW EPA, local Councils and in the parliament that work to remove asbestos waste from the site involves environmental breaches.

AECOM has even been paid for business services for Stage 3 which probably means that it has played a role in developing the still hidden business case for the whole Westconnex project. So a company that is already profiting out of the existing Westconnex contracts is involved in the business case for the project.

You can track Westconnex and other company contracts on http://whywestconnex.herokuapp.com/ (http://whywestconnex.herokuapp.com/) which tracks all Westconnex contracts that are above $150,000, apart from the large road construction contracts worth billions of dollars. The M4 widening, M4 East and M5 contracts have all been awarded to consortiums that include Leightons Contractors. After a series of takeovers, Leightons are now owned by the Spanish construction giant CIMIC (http://www.cimic.com.au/).

AECOM pays $280 million to settle negligent traffic modelling case

While AECOM has used the work of other companies for its air quality, heritage and other studies, it is directly responsibility for the crucial traffic studies. Indeed from as early as January 2013, the then O'Farrell government appointed AECOM to develop traffic modelling which would be used for the development of Westconnex & toll revenue forecasts for its business case.

It's on AECOM's traffic modeling that M4 East predictions for air quality and noise depend. From this point of view, AECOM's record in traffic modelling is crucial.

At the same time as AECOM was finalising its traffic study for Westconnex M4 East EIS, its lawyers were quietly mopping up the first tranche of law suits that followed its wrong traffic predictions for the failed Clem 7 RiverCity tunnel in Brisbane.

RiverCity company went into receivership in 2011 when traffic fell well below predictions. Class actions were launched against AECOM in May 2013.

By then AECOM was already involved in Westconnex. But instead of pulling back, the NSW government has granted AECOM more Westconnex contracts than any other company, apart from the winners of the big billion dollar construction contracts.

In September 2015, some the world's biggest banks, which claimed that AECOM's traffic predictions work had cost them more than $1.5 billion, settled their claim against the company for approximately $280 million. That still leaves 650 investors represented by legal firm Maurice Blackburn pursuing their claim for more than $150 million. Their case alleges that AECOM made forecasts without reasonable grounds, and left critical information out of its report published in RiverCity's Disclosure Statements. AECOM also allegedly failed to reveal that earlier traffic forecasts it had developed for Brisbane City Council showed traffic volumes substantially lower than those in the RiverCity Disclosure Statements. AECOM is defending the action and has made cross claims against directors of RiverCity.

Although its crucial role in Westconnex continues, an AECOM spokesperson told the Wall Street Journal that the company had decided to "no longer provide traffic and revenue forecasting for toll road operators or owners in Australia."

Surprisingly, the social impact study submitted by AECOM for this M4 East EIS even included a case study of the RiverCity project.

Ex-AECOM executive provides "interface" between companies and NSW government.

Last year AECOM Australia had a change of leadership when Managing Director Michael Batchelor left AECOM in May to set up his own consultancy Nimbus Consulting Pty Ltd, which Westconnex paid $445,000 between January and July this year to provide an "interface between industry and the government". (This contract has been removed by http://www.tenders.nsw.gov.au (http://www.tenders.nsw.gov.au) but can still be viewed at http://whywestconnex.herokuapp.com/ (http://whywestconnex.herokuapp.com/))

Batchelor describes his job on his LinkedIn profile as providing advice to NSW Roads and Maritime Services on its governance of, and interface with, WestConnex.

When contacted by New Matilda, Batchelor sent a message to say that as a "humble consultant to RMS", he was not authorised to speak on behalf of WDA and suggested we contact WestConnex.

There was no inference from New Matilda that Mr Batchelor is in any way involved in any corrupt conduct and the same applies to this website. But it further highlights the close relationships between AECOM, other consultants, Westconnex and the NSW government. Recently the delivery of the Westconnex was transferred to a private company, the Sydney Motorway Corporation which although publicly owned is likely to be even less transparent than the Westconnex Delivery Authority.

Independent experts concerned that assumptions underlying Westconnex traffic model are not available for testing

Experts and academics have been critical of the AECOM traffic studies for this project, one complaining that there is insufficient information about assumptions behind the Westconnex Traffic Model for other researchers to test it independently.

This can only add to community unease about the EIS and planning process, especially because AECOM has not used the opportunity of the EIS report to respond to or engage with independent consultants such as SGS Consulting that have questioned its traffic predictions for the Westconnex M4 (http://www.smh.com.au/nsw/nsw-state-election-2015/westconnex-the-wrong-project-for-sydney-report-says--invest-in-public-transport-instead-20150223-13m8f0.html).

The situation would not be so bad if the public could rely on government departments to seriously evaluate the project and engage with critiques. Unfortunately, the Planning Department will publish the responses to the EIS on its website. Westconnex and AECOM will then prepare a 'responses report'. Planners, health experts and others inside government say they will then be pressured to sign off on the EIS, although many know it is poor social policy.

Is it too much to hope that the Minister for Planning Rob Stokes and professional planners employed by the NSW government take time to seriously consider the substantial critiques of the project? From the public's point of view, it would be so much better to stop now rather than be stuck with another failed tollway project.

Here's how to make a submission (http://m4eis.org/2015/09/11/how-to-object/) to the EIS.

One thought on "**AECOM poor choice for EIS given conflicts of interest**"

1. **Police called as WestConnex protesters occupy Baird's office | Altmedia** says:
   29/10/2015 at 8:59 am Edit

   […] giant AECOM was paid millions to do the EIS, although it has strong commercial interests in the project and recently settled a damages case […]

   Reply (http://m4eis.org/2015/10/25/aecom-poor-choice-for-eis-given-conflicts-of-interest/?replytocom=262#respond)

A People's M4 EIS

Alternatives to WestConnex

01/11/201502/11/2015 Ben Aveling Commentaries & Objections Alternatives, Costs Westconnex

At full capacity, based on similar infrastructure, the entire WestConnex tollway is estimated (http://www.smh.com.au/nsw/what-you-need-to-know-about-westconnex-the-biggest-road-weve-ever-seen-20150313-143ujn.html)to have a commercial value of perhaps five billion dollars – less than a third of its forecast cost.

In 2012, WestConnex was to cost $10 billion dollars, and the estimated benefits were $12 billion dollars. By 2013, it was to cost $11.5 billion dollars. At the end of 2014, it was forecast to cost $14.9 billion dollars. The latest (gu)estimated cost is $15.4 billion dollars. That's $15,400,000,000 – about $3,500 for every person in Sydney, whether they use it not.

The current forecast cost of WestConnex already exceeds the original estimate of benefits, and both estimates are likely to be optimistic.

All of this, to move perhaps an extra 100,000 drivers per day.

Surely, for that much money there have to be better options. And there are. There are a number of things that could be done that would, collectively, do more to relieve congestion, for less money, and without the pollution and all the other downsides.

Roads are an inefficient means of moving people. Estimates vary, but during morning peak hour under Sydney conditions, a motorway lane is typically considered to move between 2,000 cars per hour – with 1.1 to 1.2 people per car, that's somewhere between 2,200 and 2,400 people per hour. A single dedicated bus lane can move perhaps 3,500 people per hour. Depending on the configuration, a single light rail line can move around 10,000 people. Whereas a single line of heavy rail can move up to 20,000 people an hour, the approximate equivalent of 9 or 10 lanes of cars.

Ecotransit Sydney, a public transport advocacy group, has been investigating alternatives (https://www.youtube.com/user/EcoTransitSydney):

- **For less than $2 billion** the government could build a **light rail loop** that connects Balmain to Marrickville, Marrickville to Botany, continue to Randwick, enter the CBD, and go back to Balmain via Victoria Road and from Strathfield down Parramatta Road and into the CBD.

- **Light rail to Parramatta and up Victoria Road** might each cost another **$1.5 billion**. Either would move a good percentage of the capacity of the entire WestConnex project, and could be built for a fraction of the cost and time of WestConnex.
- **A new train station** could be added to the airport rail line at Doody St, midway between Mascot and Green Square, for perhaps **$75 million**.
- To take traffic off the M4, a **Bus/train/park-and-ride interchange** could provide an express service to the CBD from the former site of Pippita Station, on what was once the Abattoirs Branch line, now the Olympic Park line. A similar facility could be build at Kingsgrove, to do the same for the M5, and for less than **$100 million each**.
- Any number of existing roads in and out of the city could easily, quickly and cheaply have one lane converted to **bus only or to T2/T3 lanes**. Such measures will reduce the number of cars but increase the number of people carried.
- A more dramatic alternative would be to **use an additional two lanes of Sydney Harbour Bridge for rail**, which is how it was originally designed. The consequence would be 6000 fewer motorists per hour and up to 50,000 extra rail passengers – for a fraction of the cost and time that building WestConnex will take.

Public transport will not suit everyone. It doesn't have to. Many commuters are flexible, they switch between public and private transport as circumstances change. For example, when the M5 Cashback was introduced, congestion on the M5 increased significantly. Conversely, taking even small volumes of traffic off the road means that the remaining traffic moves far more quickly. Consider school holidays: reduction in the volume of traffic is small, the increase in the speed of traffic is significant. A nearly full road still moves quite quickly. A completely full road does not.

And have the team behind EIS considered these alternatives? You guessed it, they haven't, not properly. Or if they have, they haven't released the results in the EIS.

One thought on "**Alternatives to WestConnex**"

1. **achuter** says:
   01/11/2015 at 7:50 pm Edit

   Great post Ben. When I asked Terry Chapman why WestConnex wasn't compared against public transport alternatives, he basically said the purpose of it is to solve the problems of heavy/commercial vehicles.

   This logic is totally flawed as you have explained above. They know this though they don't care.

Reply (http://m4eis.org/2015/11/01/alternatives-to-westconnex/?replytocom=319#respond)

A People's M4 EIS

Comments on Air Quality Impact Statement

22/10/201531/10/2015 wendybaconblog Commentaries & Objections Air quality, Haberfield, Hot spots, No2, Parramatta Rd., PM10, PM2.5, pollution, Westconnex

By Kerry Barlow

The Air Quality Impact statement is in Appendix H (http://m4eis.org/category/table-of-contents/pollution/) (This will shortly be published on this site.)

Executive Summary:

- this Air Quality Impact Statement relies too heavily on the WestConnex Road Traffic Model (WRTM) forecast of reduced traffic on Parramatta Road for its claim that there will be negligible impact on the overall air quality in the vicinity of the WestConnex project; in what should have been an independent study, **the EIS needed to model a fuller range of traffic scenarios for the corridor, including possible "rat runs" used to avoid tolls and thus changing the air quality at those points.**
- the fact that the **Parramatta Road corridor has numerous traffic "hot spots", where levels of dangerous pollutants are already elevated, is glossed over,** and the dangers of adding to these "hot spots" and creating more of them is not taken into account by the overly conservative (ie optimistic) induced traffic forecasts
- there has been no modelling of estimates for any pollutants in a scenario where the traffic on Parramatta Road is more than the modelled forecast of a "53% reduction" (by 2021) along the Concord to Haberfield section.
- the new (to be endorsed) National Environment Protection (Ambient Air Quality) Measure (NEPM) standard (of 20ug/m3 for average 24-hours)should have been used, rather than the current standard (25ug/m3)
- there has been no comparison between the project and other cleaner forms of transport. In other words there has been no cost-benefit analysis.
- the EIS Statement makes no mention of the possibility of phasing out diesel fuel passenger vehicles as one way of assisting with the problem of elevated levels of PM2.5 and NO2 in the corridor

- the final length of 33kms of unfiltered tunnels could be dangerous for regular users of the full tunnel; this is especially true for motor cycle riders

Key findings from the EIS report

- the contribution of tunnel ventilation to pollutants is calculated as negligible for all receptors (ie locations where pollutants were measured)
- there will be general improvements in air quality along Parramatta Road as a result of the project, due to reduction in traffic along the road and improved dispersion of emissions from diverted traffic through tunnel ventilation outlets
- predicted concentrations of pollutants are dominated by existing background levels, both short-term readings and longer-term readings; with background concentrations particularly dominant for PM10 and PM2.5
- whilst exhaust emissions from some pollutants from road transport have decreased as legislation has tightened, over the longer term levels will start to rise again as increases in annual vehicle activity begin to offset reductions achieved by legislation and improved technology
- there are no controls or legislation for non-exhaust particles emissions, which are significant in Sydney and these will increase as vehicle activity increases
- the NSW Office of Environment and Heritage (OEH) Sydney Basin air quality monitoring stations are collecting data on PM2.5 from 3 out of 7 sites (Vol 2B, part 6, Appendix J, Table F2); the three sites show both annual mean PM2.5 concentrations and maximum 1-hr concentrations are above the advisory reporting standards of 25ug/m3 and 8ug/m3 (respectively)
- time-series for PM2.5 only available at Chullora and Earlwood; there are considerable uncertainties in measurement of PM2.5 (but has been more accurately measured since 2012 – using USEPA-equivalent monitoring)
- long-term mean nitrogen oxide concentrations at the RMS roadside sites (F1, M1 = Flat Rock Rd Kingsgrove, M5E tunnel portal) substantially higher than at the background sites at 106 and 107 ug/m3; "illustrates the ongoing contribution of NOx emissions from road transport" (Vol 2B, part 6, Appendix J, Table F2, p F-12)
- long-term trend in NO2 shows some background decreases at OEH sites, but increases or no change at several RMS urban background sites
- the ambient air quality in this part of Sydney has PM2.5 levels well above the advisory standard for both 24-hr (25ug/m3, moving to 20ug/m3) and annual (8ug/m3 moving to 7ug/m3) concentrations, judging by the readings at Edward Street Concord and the Bill Boyce Reserve Homebush and the levels at the 31 community receptors (Table K-47, p K-83). **The modelled data of forecasted PM2.5 increases and decreases shows one locality is traded against another. The top 10 ranked receptor readings, 2014 (Table K-47, pK-83) for annual mean concentrations show a range from 14.1 ug/m3 to 12.5ug/m3 (all well above the advisory standard of 8ug/m3), with the "do minimum" and "do something" scenarios still showing modelled data above the advisory standard. With the completion of all stages of the project by 2031, these modelled readings are still above the advisory standard and will be well above the recommended new standard of 7ug/m3 (to be adopted possibly by end of 2015)**

- the top 10 ranked receptor readings, 2014 (Table K-51, p K98) for maximum 24-hr concentrations show a range from 26.5ug/m3 to 24.3ug/m3 (all above the advisory standard of 25ug/m3) with the "do minimum" and "do something" scenarios still showing modelled data above the advisory standard. With the completion of all stages of the project by 2031, these modelled readings will still be above the new advisory standard (20ug/m3)
- data reported against the current standard of 25ug/m3 (24-hour average) does not give an accurate picture of the peak hour traffic emissions, which would be well above the standard; the fact that children are walking to school near several of these sites in the morning peak hour means they are being daily exposed to dangerous emission levels. If their classrooms are also located near the sites with elevated emissions, they are exposed for lengthy periods. Dobroyd Point and Haberfield Public Schools will be particularly affected, and Homebush Public School slightly less so.
- the thirty one community receptors used to indicate changes to emission levels at 2021 and 2031 already show levels of PM2.5 are above the new proposed NEPM standard of 20 ug/m3 (24 hour average), with most sitting just below the current standard (25ug/m3) (page K100). If the WestConnex project induces more traffic to the area by 2031 (or the population grows faster than planned or more diesel vehicles use the road or tunnel) then PM2.5 levels will be well over the current standard, let alone the new standard

Flaws in the methodology of the EIS report

- relies on the traffic modelling for its claim receptors will, generally, be improved – this traffic modelling did not include a scenario where traffic on Parramatta Road is greater than model estimates. Independent experts are predicting that this will be the case.
- the WRTM traffic forecasts rely on the Bureau of Transport Statistics (BTM) population model, which uses the main inputs from the Department of Planning and Environment's (DP&E) 2014 NSW population, household and dwelling projections and Australian Bureau of Statistics' (ABS) 2011 Census data on population and dwellings. The model makes adjustments to incorporate known major developments and future plans. Given that the EIS uses BTM data from 2013, before the Parramatta Road Renewal Plan was released, the model may not allow for an estimated additional 40,000 units (80,00 – 100,000 people) along the Parramatta Road corridor, most of whom will own at least one vehicle.
- the estimations for "induced demand" in traffic (claimed as between 2%-7% – Vol 2A, Traffic and Transport Assessment, p4-6) are very conservative, given they rely on population forecasts which may underestimate population growth along the corridor (collected prior to the Parramatta Road Renewal Plan)
- the planned height of the ventilation stacks is not modeled to show other scenarios, including effects of greater heights on dispersal of pollutants; there is a lot of international research that indicates a greater height of stack results in better dispersion
- the model claims the data from the OEH monitors and the WDA St Lukes Park Concord (M4E:05) is representative of the air quality of the project; the data from the other 4 WDA (road-side) monitoring sites is down-played, yet there are currently many residents living within 200-300 metres of these "hot spots"
- the statement seems to downplay the key findings from the Human Health Risk Assessment (Volume 2D, Appendices J-L) including:

by 2021, without the project, the maximum (residential and commercial) 1-hour concentration of NO2 estimated to be (in micrograms per cubic metre) 375ug/m3 and 360ug/m3 (respectively) – which is well above the guideline (of 246ug/m3); with the project completion, the levels estimated as 307ug/m3 and 286ug/m3 (respectively) – still well above the guideline

by 2021, without the project, the maximum (residential and commercial) 24-hr average concentration of PM2.5 estimated to be 29.3 ug/m3 and 30.5ug/m3 (respectively) – which is significantly above the guideline (25ug/m3); with the project completion, the levels estimated as 28.2ug/m3 and 26.6ug/m3 (respectively)-still above the guideline

by 2031,with the project, PM2.5 levels estimated as above the guideline

by 2021, without the project, the maximum (residential and commercial) 24-hr average PM10 concentration estimated as 54ug/m3 and 55.4ug/m3 (respectively) – above the current guideline (50ug/m3) and well above the recommended (from the 2014/15 review) of 40-50ug/m3

by 2021, with the project, the maximum (residential and commercial) 24-hr average PM10 concentration estimated as 52 ug/m3 and 50ug/m3 (respectively) – above both the current guideline and recommended (review) guideline

by 2031, both without and with the project, PM10 will be above both guidelines

- the claim there will be no emissions from portal sites is questionable, given that any congestion on the feeder road into a portal entrance or the exit point will produce concentrated sites of emissions
- Bureau of Metereology data from Canterbury Racecourse is used to model the atmospheric conditions for dispersion of the plume at Wattle Street Haberfield; this may not be appropriate, given the location of the very large Parramatta River to the East of the stack and thus different terrain compared to Canterbury; more suitable local data should have been collected for such a major project

Flaws in Model's Assumptions

- the benefits from the project, in terms of some reduced pollutant concentrations at particular points (as shown on contour maps (Fig K-98, K-99, K- 100), depend on completion of stage 3 of the project, which may not eventuate if tolling of stage 1 does not meet estimated revenue. **If stage 3 is not completed, the levels of PM2.5 throughout many parts of Haberfield, Ashfield and Leichhardt will exceed current advisory and new standards.**

- the overall benefits rely on the traffic on Parramatta Road being significantly reduced, as claimed in the EIS. The WRTM traffic model depends on the BTR population forecasts (which use ABS Census of Population & Housing data) and the toll-resistance modelling estimations. Traffic forecasting is a major issue in Australia, given the number of projects

with significantly incorrect forecasts of volume, including the Brisbane N-S By-Pass, Sydney Cross City Tunnel, Brisbane Connections, Lane Cove Tunnel and East-Link Melbourne. As the Australian Bureau of Transport and Communication Economics, Canberra states, traffic models are … "radical simplifications of real urban systems" (cited in Black, J (2014) Traffic Risk in the Australian Toll Road Sector, Public Infrastructure Bulletin, Vol 1, Issue 9, Art 3). **So all the claims of improvements in overall air quality, or at best negligible impacts on air quality, are reliant on the accuracy of the traffic modelling.** As Black (ib id, p5) shows, the eight most recently built toll-roads in Australia have all had significant underestimation of traffic volumes by an average ratio of .48 (total traffic from the 8 projects forecast as 945,286 vehicles, but actual volume was 455,939 vehicles). The WDA must be very optimistic that this project will be the first one in many years to get the traffic forecasts correct. The problem is that local residents lives are about to be severely interrupted and possibly have the air quality worsened if this project attracts more traffic than estimated onto the surface roads, particularly Parramatta Road. Following a review of local and international reports and data, the Australian Department of Infrastructure and Transport, Bureau of Transport and Regional Economics (BITRE) in its Review of Traffic Forecasting Performance Toll Roads (2011) sets out what it sees as the major sources of errors in toll road forecasting. These errors include both technical (inadequate models, data limitations, unrealistic model input assumptions and ramp-up risk) and non-technical (optimism bias and strategic misrepresentation) sources of errors. Given that the Project Manager of the WDA stated at an Ashfield Council Forum (23/09/2015) that a key element of the business case for the project is .."as an enabler for the Parramatta Road Renewal Plan", one would have to wonder whether the traffic forecast that the M4 will reduce surface traffic on Parramatta Road by 53% by 2021 is an error of misrepresentation (to cite the BITRE classification of errors). The robustness of the WRTM model is crucial to the claims that the air quality will not be adversely affected by the project, and this Air Quality Report should have included a worst-case scenario of more than projected traffic on Parramatta Road.

- this assessment ignores the fact that the air quality standards or guidelines used in the EIS may be superseded by stricter ones at the end of 2015 when the new National Environment Protection (Ambient Air Quality) Measure (NEPM) standards are passed
- this assessment appears to ignore some of the actions recommended in the new National Clean Air Act, including initiatives to reduce localised emissions. **This WestConnex project will not only increase levels of NO2 and PM2.5 at several community receptors, it also runs the risk (if estimated traffic flows are greater on Parramatta Road than predicted) of increasing these levels across the Corridor.**

- five air quality monitors have been collecting data for about eight months, yet the WDA has only very recently posted three months of data (June/July/Aug 2015) on the website. The data indicates there were exceedences of PM2.5 as follows:

  o 6 occurrences at Wattle Street (the maximum one on 7 June being 9.4ug/m3 above the average 24-hour standard of 25ug/m3); 2 occurrences at Concord Oval (maximum one 30 June, 11ug/m3 above standard)
  o 2 occurrences at Concord Oval (maximum one on 5 July 1.5ug/m3 above standard)
  o 1 occurrence at Wattle Street (21 Aug 12.9 ug/m3 above standard); 1 occurrence at Edward St (21 Aug 10.8ug/m3 above standard); 1 occurrence at Bill Boyce Res (21 Aug 11.9ug/m3 above standard); 1 occurrence at Concord Oval (21 Aug 14.8ug/m3 above

standard); 1 occurrence at St Lukes Pk (21 Aug 8.6ug/m3 above standard) – there was back-burning in national parks in Sydney on 21 Aug which would account for higher readings, but it shows that the air quality is readily affected in these parts of Sydney which have already elevated readings; **once the new NEPM is adopted (20ug/m3), there will be many more average 24-hour readings for the WestConnex corridor that will exceed the standard**

- This assessment appears to ignore some of the actions recommended in the new National Clean Air Act, including initiatives to reduce localised emissions. This WestConnex project will not only increase levels of NO2 and PM2.5 at several community receptors, it also runs the risk (if estimated traffic flows are greater on Parramatta Road than predicted) of increasing these levels across the Corridor. This project will not be future-proofing Sydney.

(Ed:This post was updated on October 31,2015)

For other posts relevant to Air Quality read Westconnex (http://m4eis.org/2015/10/15/environmental-justice-westconnex-and-air-pollution/) and Air Pollution from Environmental Justice and the Critique of the Health Risk assessment (http://m4eis.org/2015/10/11/critique-of-m4-east-tunnel-eis-human-risk-assessment/), also by Kerry Barlow

A People's M4 EIS

Environmental Justice : Westconnex and Air Pollution

15/10/201525/10/2015 wendybaconblog Commentaries & Objections Air pollution, Environmental Justice. Air quality, Induced traffic, Particle Pollution, PM10, PM2.5

This submission from Environmental Justice Australia (https://envirojustice.org.au/) provides an important analysis of WestConnex and air pollution
It is based on an Analysis of Appendix H: Air quality impacts (http://m4eis.org/category/table-of-contents/pollution/air-quality/)

Context

Air pollution kills more Australians than car crashes. More than 3,000 people die prematurely each year from air pollution. Particle pollution is the largest contributor to this health toll, causing respiratory disease, hospital admissions, asthma attacks and premature death.

Diesel emissions are significant sources of fine particle emissions. Diesel-powered passenger cars and light commercial vehicles (LCVs) are rapidly increasing as a proportion of the NSW vehicle fleet. In coming years, they will represent a growing proportion of traffic in the WestConnex catchment.

The health costs of particle pollution in Sydney are estimated to be approximately $4.7 billion each year, with most of this health impact attributable to long-term exposure to PM2.5. Motor vehicles are a significant contributor to these fine particles, accounting for between 12-17% of total PM2.5 emissions.

New pollution standards and their application to WestConnex

Australia's nine environment ministers representing the states, territories and Commonwealth, are currently revising the national standards for particle pollution. The NSW Government is leading this process and released an Impact Statement for comment in August 2014, presenting the costs and benefits of various options for these new standards.

At their 14 July meeting this year, ministers agreed in principle to new standards for PM2.5. At their December meeting, ministers are expected to finalise new standards for both PM10 and PM2.5. The table below compares current Australian standards to the standards currently being considered, and to the standards that are referenced in the WestConnex EIS (Appendix H, p.48).

	$PM_{2.5}$ 24 hour average	$PM_{2.5}$ Annual average	PM_{10} 24 hour average	PM_{10} Annual average
Current standard	25µg/m³	8µg/m³	50µg/m³	n/a
Proposed NEPM standards	15, 20 or 25µg/m³	6, 8 or 10µg/m³	30, 40 or 50µg/m³	12, 16 or 20µg/m³
Standards referred to in WestConnex EIS	25µg/m³ (and a 'target' of 20µg/m³)	8µg/m³ (and a 'target' of 7µg/m³)	50µg/m³	30µg/m³

(https://m4eis.files.wordpress.com/2015/10/james-table1.jpg)

(This table will be enlarged soon. In the meantime, click on it to see a bigger image.)

The case for stricter standards outlined in the Impact Statement is compelling: "Decreasing short-term exposure to PM10 would reduce attributable hospital admissions for childhood respiratory disease and pneumonia/bronchitis in people aged 65 and above." Reducing PM10 concentrations to 40µg/m3 is predicted to reduce health impacts in Sydney by around 50%. Meeting the proposed PM2.5 standard of 6µg/m3 nationally would prevent approximately 530 deaths.

The WestConnex EIS (Appendix H, pages 36-37) reveals that the NSW EPA has sought the endorsement of the NSW Cabinet for an annual average PM10 standard of 25µg/m3. This would allow significantly higher pollution concentrations than any of the three options for the standard that are advocated in the Impact Statement prepared by the NSW EPA to guide the variation of these standards. It is important to note that the ministers will determine the new standard collectively. This is not a decision that will be made by the NSW minister alone. There is no reason to expect the standard proposed by the NSW EPA will be endorsed by other states or adopted nationally. It should not be used to assess the impacts and viability of this project.

The EIS (Appendix H p.48, Tables 7-5 and 7-6 on p.76. p.151 and elsewhere) interprets annual average PM10 levels in terms of a standard of 25µg/m3 and a 'target' (10-year objective) of 20µg/m3, ignoring the strong case for stricter standards and the fact that a decision has not yet been made regarding the new PM10 standards.

Similarly, the EIS assumes that the standard for 24-hour average PM10 concentrations will remain unchanged. On page 151, the EIS acknowledges that, "The maximum 24-hour mean PM10 concentrations at the 31 community receptors with the project in 2021 and 2031… At all receptor locations the maximum concentration was below – but close to – the NSW impact assessment criterion of 50µg/m3." If (as expected) a stricter national pollution standard or 30 or 40µg/m3 is adopted in December, it will already be significantly exceeded along the Westconnex route.

Recommendation: Assessment of the environmental and health impacts of the proposed motorway should be based on the strictest standards currently being considered by Australia's environment ministers, not on standards that are significantly less strict.

Existing air pollution levels and the need for action to improve air quality

Particle pollution levels along the proposed WestConnex route are at or above current standards, and well above proposed standards.

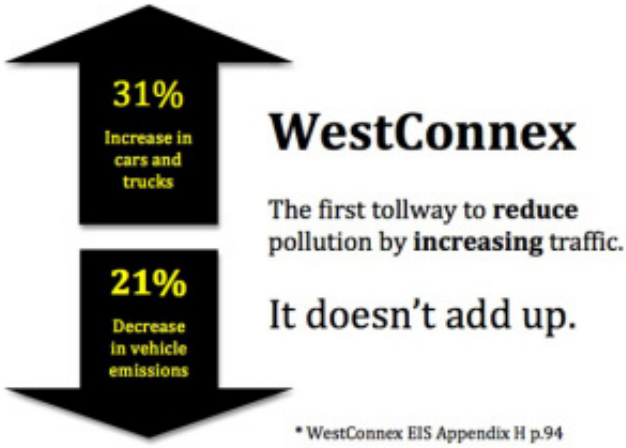
The EIS (p.66) states that annual PM2.5 concentrations measured in 2014 in the study area were "very close to or above" the current advisory reporting guideline (noting that the new national standards is expected to include a stricter target of 7μg/m3 to be achieved over 10 years). Current 24-hour average concentrations of PM2.5 are "close to or above" the current NSW reporting standard of 25μg/m3 and well above the likely national target of 7μg/m3.

This is also true of coarse particle (PM10) pollution levels. Figure 8-54 (p,149) identifies several locations along the WestConnex route where annual average PM10 concentrations are already above 20μg/m3 (in the range 20-24μg/m3). Similarly. Figure 8-62 (p.155) identifies large residential areas adjacent to the M4 Western Motorway and A6 (Olympic Drive) where PM10 concentrations are already above 20μg/m3.

Figure 8-56 (Appendix H p.151) forecasts the maximum 24-hour mean PM10 concentrations at 31 'community receptors' in 2021 and 2031. At all these receptor locations the maximum concentration was "below – but close to – the NSW impact assessment criterion of 50μg/m3".

Particle pollution levels near the motorway already exceed the current PM10 and PM2.5 standards. Construction and operation of WestConnex will increase pollution concentrations and adverse health impacts.

Recommendation: The NSW Government needs to prevent any additional sources of fine particle pollution and to actively manage existing polluters.



(https://m4eis.files.wordpress.com/2015/10/james-graphic.jpg)

The myth that building roads can improve air quality

The WestConnex proponents allege (Appendix H, Figure 5.2, page 50) that WestConnex will improve air quality. Building and expanding motorways increases air pollution.

Motorways induce traffic. The EIS assumes a 31% increase in vehicle kilometres travelled (vkt) in the WestConnex domain (p.94). Increasing road capacity will directly increase vkt. As a result, air pollution worsens.

The EIS predicts that PM2.5 emissions in the WestConnex domain will decrease by 21% while vkt increases by 31% (Table 8.6 p.94), from 234 tonnes per annum in 2014 to 182 tonnes in 2031. Similarly, the EIS predicts a reduction in PM10 and PM2.5 emissions from the M5 East tunnel stack.

Across Sydney, ambient concentrations of PM2.5 and PM10 are increasing. This compels the NSW Government to act to improve air quality and take all available measures to reduce particle emissions.

The prediction that constructing WestConnex can reduce emissions is based in part on the assumption that the motorway will ensure that traffic moves faster and more freely. In reality, many motorways become congested more rapidly than expected, due in part to induced traffic.

James Whelan
Researcher
Environmental Justice Australia
James.Whelan@envirojustice.org.au

(https://m4eis.files.wordpress.com/2015/10/logo.jpg)

Bibliography

Australian Medical Association submission to the 2013 Senate Inquiry 'Health Impacts of Air Pollution'

Begg S, Vos T, Barker B, Stephenson, C., Stanley, L. & Lopez, A.D. The burden of disease and injury in Australia 2003, Australian Institute of Health and Welfare, Cat. no. PHE 82, Canberra (2007), p234. http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442459747 (http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442459747)

National Environment Protection Council, July 2014, 'Impact Statement: Draft Variation to the National Environment Protection (Ambient Air Quality) Measure', p.xi.

The WestConnex M4 EIS suggests that motor vehicles were responsible for 12% of PM2.5 emissions in Sydney in 2011. The Australian Motor Vehicle Emissions Inventory estimates that motor vehicles were responsible for 17% of PM2.5 emissions nationally in 2010.

NEPC, July 2014, 'Impact Statement: Draft Variation to the National Environment Protection (Ambient Air Quality) Measure'.

NEPM Impact Statement, p.xviii

NSW Chief Scientist, 2014, Advisory Committee on Tunnel Air Quality, p.6 http://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0003/52986/Road-Tunnels_TP02_Air_Quality_Trends_in_Sydney.pdf (http://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0003/52986/Road-Tunnels_TP02_Air_Quality_Trends_in_Sydney.pdf)

More commentary on Westconnex Health Risks to use in submissions here (http://m4eis.org/2015/10/11/critique-of-m4-east-tunnel-eis-human-risk-assessment/)

Support and submissions

Here's how you can support (https://envirojustice.org.au/blog/i-support-clean-air-laws) Environmental Justice Australia's work for stronger pollution laws

Would you like to make a submission to the M4 East EIS about air quality issues?

Remember you can make more than one submission.

Submissions can be sent to the Sec of DP&E, quoting project number (SSI 6307). Submissions received will be published on the DP&E website but only after the end of the exhibition period.

Written submissions can be made online via the Department Planning website http://majorprojects.planning.nsw.gov.au (http://majorprojects.planning.nsw.gov.au) or sent to:
SSI 6307
NSW Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

A People's M4 EIS

Environmental Scientist finds more work needed on noise and vibration EIS

30/10/201531/10/2015 wendybaconblog Commentaries & Objections noise, demolition, vibration, SLR Consulting, INCG, construction noise management levels, SEARS

Comments on Noise and Vibration Assessment

SLR Consulting was hired by Westconnex to conduct an assessment of the noise and vibration impacts of the Westconnex. Its report can be found in Chapter 10 of Volume 1A from 10.1 onwards (https://m4eis.files.wordpress.com/2015/09/m4_east_eis_volume_1a_part_5.pdf) continued at 10-3 -10-47 [here](10-3 -10-47) and also in Volume 2C, Appendix I (http://m4eis.org/category/table-of-contents/noise-and-vibration/).

Noise could have a long term impact on those who would live beside the proposed M4 East or in local streets and roads carrying extra traffic nearer tunnel exits and on 'rat runs'. Construction noise from demolition, thousands of truck movements a day and rock crushers would impact on local communities and businesses. In some situations this could occur for several years. In others, the impact would be over shorter periods. Research has shown that noise does have negative effects on health (http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2004;volume=6;issue=22;spage=5;epage=13;aulast=Ising). Vibration from construction including tunneling could cause cracked walls. Westconnex has already begun warning residents of this risk.

The SLR report does recommend noise mitigation for some buildings, although only up to the first story. It recommends noise walls and other strategies that would reduce the noise. Some buildings on Parramatta Rd that would under normal circumstances be offered noise protection would be left exposed so that the land between these buildings and the motorway can later be developed.

In the absence of that we asked an environmental scientist to review the material in Chapter 10 in the EIS . For personal reasons to do with her employment, we cannot publish the environmental scientist's name.

It's worrying that there are many gaps in the EIS and much is also left to future decision making during the final design phase. There are many issues here that need following up.

The EIS reports are presented in ways that even make it difficult for residents to see whether their neighbourhoods would be affected by excessive noise levels or not. While it's expected that technical data can be hard to understand, the summary chapter should be presented in a more accessible way. This is just one of the reasons why residents want more time for the consultation period so that they could hire their own independent consultants. We can safely say that the EIS shows that hundreds of homes and thousands of residents would be affected by noise either during the 3 year long construction period or after the opening of the tunnel should it be allowed to proceed.

If you are worried about this issue and cannot understand the EIS. we suggest asking your local Council to arrange for it to be fully explained.

Overall conclusion

Given the uncertainty raised in a range of areas of the noise and vibration assessment and the number of potentially impacted properties and people within the project area, further work needs to be done to ensure the local community and other affected stakeholders are provided with a fully informed assessment. This must occur **as part of the EIS consultation process** where further comment can be sought from the community, and not simply resolved through the Submissions Report which does not allow any further input from the community.

Gaps in Westconnex EIS analysis.

Deficiencies in reporting of noise monitoring results

Table 10.2 does not provide information on what times of day, evening or night the noise levels presented for the attended noise monitoring was undertaken. If the purpose of the attended monitoring was to support the data gathered through unattended monitoring, then attended noise monitoring results for each of these time periods should be provided.

Construction noise management levels

Table 10.3 states out that the noise management levels (NMLs) for construction works during standard hours should be the rating background level (RBL) +10dBA and the rating background level +5dBA for out of hours works (based on the Interim Construction Noise Guideline (http://www.epa.nsw.gov.au/resources/noise/09265cng.pdf) (INCG), however not all of the NMLS for the project have been accurately calculated in Table 10.4 when compared to the measured INCG RBLs in Table 10.2.

For example:
INCG RBLs for monitoring location L23 are 53dBA (day-time), 52dBA (evening) and 46dBA (night-time) which should make the out of hours NMLs for this location 58dBA (day-time), 57dBA (evening) and 51dBA (night-time), however the night-time NML in this table is shown as being 54dBA

INCG RBLs for monitoring location L22 are 53dBA (day-time), 53dBA (evening) and 49dBA (night-time) which should make the out of hours NMLs for this location 58dBA (day-time), 58dBA (evening) and 54dBA (night-time), however the NMLs shown in this table are 66dBA (day-time), 62dBA (evening) and 47dBA (night-time)

There are other inaccuracies in the calculations given and this whole section needs to be reviewed and amended as necessary. This would then need to be compared against the data predicting exceedences of the NMLs to ensure that these are based on accurate NMLs.

Given the significant predicted noise impacts discussed in later sections of the EIS, this is absolutely critical to get right so that the local community can make an informed decision about what the potential noise impacts are likely to be.

Sleep disturbance during construction

Page 10-11 states that a sleep disturbance NML of 55dBA LAFmax (internal) and 65DBA LAFmax (external) has been adopted, however Table 10.4 provides varying sleep disturbance NMLs for each noise catchment area and does not specify whether the sleep disturbance NML is internal or external.

** Page 10-29 summarises that Tables 10.14 to 10.19 show that sleep disturbance criteria are predicted to be exceeded during all construction scenarios that are proposed at night and notes that the INCG only requires consideration of maximum noise levels when more than two consecutive nights are proposed. More detail on how potential sleep disturbance would be managed must be included in the EIS given the proposal to conduct such extensive out of hours works as identified throughout this section of the EIS.**

Construction vibration

In s10.3.2 on page 10-15 there is discussion about the application of blast vibration criteria with a statement:

"For projects such as this, with a shorter duration of blasting of 12 months or less, a higher vibration criterion may be reasonable. For this project, the location of the blast moves along the alignment such that any one receiver is affected for only a short period of time."

With no detail given about how long 'a short period of time' is, there is no way to determine whether it is appropriate that a higher vibration criterion be permitted, irrespective of whether or not the referenced standard was developed for mining operations rather than road tunnel construction. Given the range of sensitivities to vibration within any one community, it would be more appropriate to apply a conservation measure in the first instance.**

In s10.3.2 the control of damage from air blast is discussed and there is a statement that:

"Nominating appropriate criteria for heritage buildings generally require site inspections; this would be confirmed during detailed design."

The SEARs state that the EIS must "include an environmental risk analysis to identify the potential environmental impacts associated with the infrastructure" and "where relevant… must include…measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment."

If nominating appropriate criteria for the control of damage from air blast requires further site inspection then this should be conducted as part of the EIS process in order to meet the requirements of the SEARs as referenced above. Delaying this until detailed design, the completion of which would realistically occur some time after the commencement of construction should the project be approved, is not adequate given the potential impacts to the heritage and the concerns about this in the community.

Table 10-23 shows a total of 203 residential and light commercial buildings, 238 typical buildings, 11 heritage listed and 13 structurally unsound buildings are within safe working distances of highest vibration plant for cosmetic damage. 493 buildings are within the human response criteria for vibration. Additionally, three more properties are within the safe working distance for human response due to proposed tunneling activities.

This is a large number of buildings that are going to be placed at risk of cosmetic damage and an even more significant number of buildings within which people would be at risk of experiencing adverse effects from vibration. The number of buildings predicted to be impacted by vibration is worrying, particularly for the human response criteria as this impacts on the health and wellbeing of residents.

Page 10-35 refers to a detailed analysis of the potential vibration impacts needing to be undertaken for locations where the predicted and/or measured vibration levels are greater than the nominated screening levels, but no timeframe is supplied for this. Similarly, s10.4.5

discusses the need for further investigation into predicted noise and vibration levels after confirmation of the scope of blasting to determine whether or not the cosmetic damage and human comfort criteria would be met.

Given the significant numbers that are predicted to experience vibration impacts, both of these analyses should be undertaken as part of the EIS process so that the local community and potentially impacted residents can make a fully informed opinion on the proposed project.

The proposed management measures in this EIS are also not adequate to mitigate the potential vibration impacts on such large numbers of receivers as they do not discuss ways to reduce or eliminate vibration impacts or provision of respite. More rigor should be applied to determining the exact extent of potential impact and what would be done in a practical sense to ensure that people and buildings are not exposed to potentially damaging levels of vibration.

Demolition of buildings

Table 10-13 shows that in 13 NCAs exceedences of the NMLss are predicted to be up to or more than 25dBA during day-time works. Given the RBLs are 10dBA less than the NMLs, then this means that over half of the NCAs would experience noise levels of up to or more than 35dBA above the existing background level during demolition. **The Transport for NSW Construction Noise Strategy referenced on page 10-5 of the EIS categorises this level of noise impact to be "highly intrusive" as it uses the rating background level as the starting point for determining exceedences.**

What is proposed to mitigate noise impacts associated with demolition? As a minimum, highly affected receivers should be offered respite (accommodation elsewhere paid for during construction period.)

Work area establishment

Table 10-14 shows exceedences of up to or more than 25dBA above the NMLs are predicted for work areas establishment in 14 NCAs during standard daytime hours, with exceedences of more than 25dBA predicted for all but two sets of receivers during out-of-hours works. **These exceedences are excessive and would have a significant impact on nearby receivers.**

Construction facilities

Table 10-16 shows that operation of construction facilities is predicted to significantly exceed NMLs during night-time operations, including exceedences of 50dBA or more in 4 NCAs and 11 NCAs that are predicted to exceed night-time NMLs by 30-50dBA. This represents a significantly intrusive impact to residents and night-time operations should not be considered reasonable for residents to have to endure in these locations.

Road construction

The opening paragraph on road construction states that new road works would be undertaken within the construction footprint, however out of hours works would be likely to minimise impacts to traffic and reduce safety risks for workers. If the works are being conducted entirely within the construction footprint, then why would there be potential impacts to traffic and workers safety? Does this actually mean that new road works would be undertaken within areas that are currently in use for road operations?

Table 10-17 shows that exceedences of over 25dBA above the NMLs are predicted for the majority of NCAs for all time periods during road construction works. Given the significance of this level of exceedence, more detail should be provided about exactly how much over 25dBA predicted exceedences are for each of these time periods. The information presented in the table indicates that the majority of the NCAs would experience high noise impacts (at the higher end of "moderately intrusive" as defined by the TfNSW CNS) for the duration of road works. This represents a significant burden on the local community, particularly during out of hours works when sleep disturbance is likely.

Tunnelling

Tunneling is proposed to be carried out 24 hours a day, seven days a week and some above ground tunnel construction ancillary facilities would also be in use 24 hours a day, seven days a week to support tunneling works. Page 10-28 states that:
"NMLs for residential properties located close to the tunnel construction ancillary facilities are predicted to be exceeded by more than 25dBA during the night-time periods. These exceedences would be restricted to residential properties directly adjacent to tunneling sites. Where exceedences are expected, properties would be considered for construction mitigation."

Even with the proposed installation of acoustic hoarding and the assumption that this would afford a 10dBA reduction in noise levels, there would still be residential receivers who would experience exceedences of more than 25dBA above the NML, as shown in Table 40 of Appendix I.

It is unacceptable to expect residents to be subjected to such potentially high noise levels 24 hours a day, seven days a week as this provides no respite from noise, light, dust and traffic impacts. It is also noted that the statement above gives no certainty about whether or not

mitigation would actually be implemented, merely considered.

(https://m4eis.files.wordpress.com/2015/10/img_3544-1.jpg)

Residents studying the EIS while questioning the legality of early drilling in Haberfield

Highly noise affected residential receivers

Table 10.21 shows more highly noise affected receivers after acoustic hoarding is installed in NCA 13 and NCA 21– why is this? Installation of acoustic hoarding should reduce the numbers of impacted receivers, not increase.

Ground-borne noise

Section 10.4.2 indicates that there are a number of locations within 40 metres of tunneling works where the criteria for ground-borne noise would be exceeded in both the evening and night-time. While it is mentioned that the duration of these impacts would be a relatively short period of time at each location, there is no discussion on what mitigation would be implemented to reduce the impacts on the directly impacted residents. Given exceedences are predicted for the time periods that people are more likely to be at home and trying to sleep, this is not adequate.

Construction traffic noise

Given that spoil removal and concrete delivery are proposed during the night in s10.4.3, with potential impacts at Short Street East, the fact that detailed assessment of potential maximum night-time noise events on local roads has not yet been undertaken is inadequate and does not allow affected residents in this area to be able to determine what the potential impacts on them are.
The reference to sleep disturbance in s10.4.3 is disingenuous as it only refers to light vehicles whereas sleep disturbance is more likely to be caused by heavier vehicles that would be undertaking night-time spoil removal and concrete delivery.

Operational noise and vibration impacts from ventilation facilities

Table 10-28 and the text below it shows that modelling has not been undertaken to predict potential operational impacts from the three proposed ventilation facilities. This does not allow potentially affected receivers to be able to make an informed opinion on what the impacts may be.
Is it known whether or not the proposed maximum allowable sound power level for these facilities is achievable? What is the process if it is not?

Operational noise impacts and mitigation

Page 10-37 states that:
"…the project is predicted to result in an overall reduction in the number of receivers where exceedences of the noise criteria are experienced….This reduction is a result of reductions in the numbers of vehicles using some surface roads…
Large reductions in noise levels (up to 8dBA) have been identified…due to a reduction in the number of vehicles using the surface M4…"

A reduction of up to 8dBA while noticeable, would not necessarily be clearly audible, and as such is better described as a moderate reduction rather than large. The predicted "increases in noise levels (up to 16dBA)" are however more accurately described as large when they are at the upper end of being clearly audible.

The predicted reductions are based on the traffic modelling for the project undertaken on behalf of a proponent with a vested interest in undertaking road projects and as has been seen in a number of other large road infrastructure projects in Sydney in recent years, inaccuracies in traffic modelling can have disastrous impacts on the viability of a project on completion and on the community who are left shouldering the burden of such infrastructure in their local environment. This, combined with the fact that predicted increases in operational noise impacts are significantly higher than the predicted reductions in other areas, does not provide ample evidence that the project is justified.

Seven new or increased height noise barriers are proposed as part of the project. Some of the new noise walls are proposed to be 5m or 6m high which has the potential to significantly impact on the amenity (visual impact and overshadowing) of residential properties that are immediately adjacent to the proposed noise walls. Even with construction of these noise walls and the installation of low noise pavement, a large number of receivers (310) would still need consideration of additional mitigation. At-property treatment for noise mitigation, while being able to help achieve operational noise goals, also means that people are restricted in being able to open their windows without experiencing noise impacts, so can have a significant impact on the amenity of their property. The number of receivers that may need further at-property treatment is very high and further work should be done on the design and/or alignment of the proposal to reduce this number to a more acceptable level.

Table 10.24 shows number of receivers still affected operational traffic noise with mitigation installed in a number of scenarios. As this table uses different terminology to that of the scenarios at the beginning of the noise and vibration assessment on page 10-6 of the EIS, a direct comparison is made more difficult and it can only be assumed that the four scenarios presented in Table 10.26 are meant to mirror those given on page 10-6. There is also confusion caused by the explanatory text above this table that refers to data about numbers of affected receivers in scenarios without mitigation that is not shown in the table. The EIS should clearly communicate what the predicted operational impacts are likely to be and it does not do that.

The assessment of maximum noise levels discussed on page 10-42 indicates that there are a number of locations where the maximum noise level would increase but that not all of these potentially affected receivers would be eligible for property treatments. As some of these receivers would also be in line of sight to elevated vehicle exhausts, this is not an adequate response to a potential increase in maximum noise levels and impacts to health, wellbeing, visual amenity and air quality.

Environmental management measures

A number of environmental management measures for noise and vibration are proposed in the EIS. Of particular concern are the following:

NV6

"Permanent noise barriers will be scheduled for completion as early as possible in order to minimise construction noise"

NV7

"Property treatments identified for the operational phase of the project will be considered for installation before or early in the construction period, where they would improve noise levels"

Given the number of areas where the EIS delays the detailed assessment of noise and vibration impacts, presumably until after project determination, it is most likely that construction would commence well before information is available to base noise barrier design on, let alone construct them. Detailed noise and vibration assessment should be included in the EIS rather than deferred to after the project has been assessed and determined so that a more accurate picture of what is proposed is presented to the community for consideration and so that management measures such as these can be realistically implemented.

NV10

"Night works will be programmed to minimise the number of consecutive nights that work affects the same receivers, where feasible. This would not apply to civil and tunnel sites."

The proposal to undertaken tunneling activities 24 hours a day, seven days a week is inconsistent with this management measure, particularly given the need for supporting tunneling facilities to be utilized at the same time. The exemption of civil and tunnel sites covers a significant portion of the project works, making this exemption almost universal.

Out of hours/night works should only be undertaken when it can be demonstrated that no other options are safe or the impacts to the surrounding receivers are absent or minimal. This is not the case being presented in this EIS and therefore more stringent limits on out of hours works should be applied, rather than more lenient as being proposed here.

NV11

"When working adjacent to schools, particularly noisy activities will be scheduled outside normal school hours, where practicable."
While this proposed management measure is positive for schools, it also has the potential to increase the need for out of hours works and therefore must be considered in conjunction with other proposed management measures that relate to out of hours works. Given there are areas within the project's influence that may be subjected to prolonged and/or noise out of hours works, a balance needs to be struck between impacts to schools and impacts to residential receivers.

NV24

"Respite periods (eg one hour respite for every three hours of continuous construction activity) will be scheduled for high noise impact works where appropriate"
The EIS does not state that respite periods will be used for properties impacted by 24 hour, seven day a week tunneling activities, however these are likely to be the most highly impacted due to predicted noise levels and duration of works.

NV27

"As far as practicable, construction vehicle movements along local roads at night will be restricted to light vehicles only, subject to further investigation of potential night-time maximum noise levels during detailed design."

NV29

"Spoil removal will be undertaken during the day as far as practicable"
These measures are inconsistent with information discussed above, and NV28 below, which states that spoil removal and concrete delivery will occur at night. Spoil removal and concrete delivery will be undertaken with heavy vehicles so statements about restricting night-time movements to light vehicles is

NV 28

"As far as practicable, heavy vehicle movements outside of standard construction hours associated with tunnel support works (spoil removal, concrete delivery and other heavy vehicle movements) will be limited to access and egress directly to and road network"

This needs further discussion on the numbers and location of potentially affected receivers within the EIS itself rather than this imprecise management measures.

NV31

"The safe working distances will be complied with where feasible and reasonable. This will include the consideration of smaller equipment when working close to existing structures."

As outlined above, it is already known that there is a large number of buildings that would fall within the safe working distances, making the commitment to comply where feasible and reasonable meaningless in these areas. Smaller equipment should be specified, not just considered.

NV 32

"If vibration intensive works are required within the safe working distances, vibration monitoring or attended vibration trials will be undertaken at the outset of these works to ensure that levels are within the relevant criteria."

This management measure gives no assurance that vibration intensive works would not be carried out within safe working distances. Vibration monitoring once vibration intensive works have commenced is not appropriate given this in itself could cause damage and/or human discomfort.

NV44

"Once plant items within the ventilation building are confirmed during detailed design, impacts will be assessed with consideration of the INP modifying factors. Where modifying factors are found to be applicable they will be added to the assessment, and compliance with the INP criteria checked at all receivers."

This management measure is specified as to be undertaken during pre-construction, however given it references detailed design, there is more likelihood that it would occur well after construction has commenced. As discussed above, there should be a specified process for how to manage non-compliances with the criteria prior to commencement of operation.

How to make an objection: http://m4eis.org/2015/09/11/how-to-object/ (http://m4eis.org/2015/09/11/how-to-object/)

A People's M4 EIS

Major flaws in Westconnex EIS Biodiversity study

24/10/201525/10/2015 wendybaconblog Commentaries & Objections Biodiversity, Green space, Grey-headed Flying-foxes, Micro-bats, Open space, Parkland, Private gardens, Superb Blue Wren, Threatened fauna, Vegetation

Biodiversity effects are defined narrowly in focusing on potential impacts on Threatened Species.

By Debra Little

Methodology and EIS statements re “the highly modified nature of the project footprint” (20-14)

Typically an EIS downplays or dismisses the habitat value within a project footprint in order to remove or limit the biodiversity-promoting value that is there, and/or to understate the impacts of the project. This EIS is no exception.

The EIS field surveys (observations in the field) are very limited in duration and season (as usual in an EIS) – the “short duration of surveys” is acknowledged (20-3) as well as **“it is possible that seasonal species were not identified”**(20-3): for this EIS it was 1 day (12/2/15: no number of hours specified) and one night (27/2/15: also no duration specified) in one area (not specified where), with additional surveys on 12/3/15 and 26/6/15 “to investigate areas not covered by the previous surveys” (20-3). (It is not specified where if a physical location is referred to, nor whether it was day or night, and the duration).

Repeated sampling over some time period is really needed to develop anything representing a comprehensive survey. And if you are not (inclined to be) looking for it, you don't tend to find it, and if you are quite time limited as all EIS's are, you are falling well short of what is a satisfactory, let alone a rigorous survey process.

Threatened Fauna Species

The EIS acknowledges that **Grey-headed Flying-foxes (GHFF)** use the area when foraging for food. An evening field study, consisting of two evenings only, confirmed this.

The project footprint is well within the nightly foraging range of the Clyde/Duck River camp, as well as other urban Sydney GHFF camps.
Urban GHFF camps have become important to the survival of the species which is now classed as Vulnerable under Federal and State legislation.
Neither street trees nor private garden trees have been included in loss of area calculation (see more on this below). Trees in these "unaccounted for" areas can be and are very important food resources for GHFF feeding.

This foraging habitat should have been quantified in their assessment and their conclusion re GHFF foraging habitat impact. As a result the area and significance of foraging habitat has been understated.
On 20-16, the EIS states that "These planted trees do not constitute habitat critical to the survival of the Grey-headed Flying-fox."
As there is currently no declaration by either the NSW or Federal Government as to what constitutes critical habitat this statement is disingenuous.

Stating under the heading Cumulative Impacts (20-20) that the combined Westconnex projects would result in "the removal of mainly planted vegetation and associated fauna habitats" (20-20) is not an adequate assessment of the whole Westconnex's project impact on Grey-headed Flying fox foraging habitat.

(https://m4eis.files.wordpress.com/2015/10/2grey-headed_flying_fox_img0526.jpg)

Grey Headed Flying Fox by Andrew Meares

This species in its increasingly urban environment relies on much planted vegetation. Indeed the number of urban camps now in the Greater Sydney area is a result of the available food provided by such urban planted landscapes in proximity to camps – themselves also located in some cases amongst planted vegetation, especially as suitable habitat elsewhere in the species range has significantly contracted since European occupation (estimated at 50 % loss: Eby,P).

The whole Westconnex project – combined M4E and New M5 will impact on urban GHFF foraging habitat to a significant degree.

Micro – bats (Large-footed Myotis and Eastern Bentwing Bat)

Given the very limited field surveys undertaken and poor quality recording of calls during these, the EIS cannot substantiate claims about the extent of use of existing infrastructure as roosting sites, nor claims about breeding habitat. The EIS claims there is no breeding habitat in

the study area, but a breeding habitat can also include roof and wall cavities in the absence of tree hollows.

Nor is there substance to the claims about re-colonising new roosting sites eg. continuing to use culverts post construction disruption (20-16). There is no evidence quoted to indicate this will happen.

Vegetation

It's stated as being substantially planted vegetation – "Planted trees and gardens", including parkland, involving 15.7 hectares made up of 12.9 hectares of planted trees and screening vegetation (although inconsistently, the EIS also refers to 13.3 hectares on page 27-11), and 2.8 hectares of grassland with scattered trees (i.e. parkland).

The EIS has not quantified the loss in area and nature of vegetation from private gardens and street trees. This should have been done since they claim they are providing in this EIS "a detailed assessment of ecological issues including impacts on flora and fauna".

The EIS included these areas in the 83 species number cited (20-6); it also should have been straight-forward to map the coverage, and so approximate area covered by this private/street vegetation. This was not done. This downplays the role (and given the aforementioned, the extent) of vegetation of any sort. Irrespective of whether it is planted or remnant, it is potentially important and can play an ecological role (ref. Fly-fox info. above).

The EIS therefore makes no real assessment of the nature and quality of the planted vegetation which can stand in to some extent for remnant vegetation if well planned and maintained. Dismissing it (just) as planted eg on 20-13 "All the above creek lines only have planted vegetation within their riparian corridors …." fails to provide any further detailed (qualitative or quantitative) assessment as to ecological value as claimed.

All city vegetation is important in the context of preventing, and countering the urban heat island effect, a recognised phenomenon. For instance, see http://www.cityofsydney.nsw.gov.au/vision/towards-2030/sustainability/carbon-reduction/urban-heat-island (http://www.cityofsydney.nsw.gov.au/vision/towards-2030/sustainability/carbon-reduction/urban-heat-island) , and there are urban biodiversity benefits of both planted as well as remnant vegetation well acknowledged by others.
For instance see September 2015 (Vol. 16, No. 3) of *Ecological Management and Restoration (EMR)* (pp. 206-213). Trees and shrubs (although the latter is not mentioned in the EIS) certainly "have the potential to provide nesting and shelter habitat for common birds and possums" (20-12). Not mentioned is that they also provide food resources either directly, or indirectly. This is a sloppy omission, but again it downplays and limits the vegetation's role.

Statement that vegetation connectivity is limited

Some animal species manage quite well in small and fragmented patches, and providing that patch distance is not too great other species are able to move between and utilise such patches.

Suburban gardens are an example of this even where there is no direct house to house connectivity and there are roads and footpaths separating areas; an example animal species would be the once common Superb Blue Wren, a small bird species which moves between home gardens finding necessary resources (nesting sites, shelter, food) quite satisfactorily. Ditto Blue Tongue Lizards, also once common but now in decline in urban areas. Given the EIS has not quantified nor assessed the ecological role of private gardens and street plantings (see above), EIS comments about connectivity do not tell the whole story and so the potential connectivity (and 'stepping stones') that exist via this vegetation is ignored.

(https://m4eis.files.wordpress.com/2015/10/superb_wren.jpg)

(https://m4eis.files.wordpress.com/2015/10/img_3528-1.jpg)

Garden and house in Walker Avenue, Haberfield would be bulldozed

There is some acknowledgement that existing patches "may be used as 'stepping stones' for fauna movement". No "may" about it. And such stepping stones are especially important for fauna crossing and leaving cities. It is known this does happen, and is important for migratory species, such as annual migrations of Yellow-faced Honey eaters observed through Sydney. Lack of connectivity disadvantages some, but by no means all native species.

Cumulative Impacts

20.4.7 of the EIS says "These losses in biodiversity are likely to be restricted in area (note the "likely" – this is again unsubstantiated opinion), given their location in highly modified environments" (26-10).

Highly Modified environments are synonymous with cities – that's why we **especially need to preserve the green spaces and associated vegetation that are there. We can't afford to lose more 'havens' within highly modified areas.**

This is where cumulative impacts are more acutely felt, and to dismiss them leads to a death by a thousand cuts scenario.

It is fatuous to say (20-15) that "The removal of planted vegetation would result in minimal fragmentation (ie loss of connectivity between vegetation), given the already fragmented state".

There is no mention of any compensatory parkland or other green space creation. Why should Westconnex be permitted to simply demolish the 15.7 hectares described in the EIS without creating any alternative/s.

If anywhere, in large cities with inevitably limited green space, and in such a generally modified environment, there should be mandatory, compensatory creation of green-spaces.

This is not generally done – just increased pressure on existing, contracting green-space areas.

The conservation of urban biodiversity has profound benefits for human well-being – physical and psychological health – *(Turner et al 2004: Global Urbanisation and the separation of humans from nature, Bioscience **54 585-590)* yet this social value to people is not addressed at all.****

There is also no attempt to assess the loss to biodiversity across the whole Westconnex project M4 widening, King Georges Interchange, M5 duplicate and the linking M4/M5 project. A Southern Motorway (F8) is also referred to in the EIS which would threaten wetland. This is a serious deficiency in the EIS.

3 thoughts on "**Major flaws in Westconnex EIS Biodiversity study**"

1. **John McCarthy** says:
   25/10/2015 at 8:57 am Edit

   Hi, my name is John McCarthy and I work as an environmental lawyer in NSW. I just had a brief look at the summary of the EIS and it is apparent that the EIS flora and fauna surveys would not satisfy the requirements of the NSW Threatened Species Act NSW 1995 and therefore this project would seem to be open to challenge in the Land and Environment Court NSW. I have worked on quite a few Threatened Species cases, see Torquil Cameron

V Nambucca Shire Council regarding the seasonality of studies and the requirement of 12-month study periods for Flora and Fauna. At this stage, I would contact the NSW Environmental Defenders Office for advice if you have not already done so. Regards, John

Reply (http://m4eis.org/2015/10/24/major-flaws-in-westconnex-eis-biodiversity-study/?replytocom=206#respond)

- **wendybaconblog** says:
  25/10/2015 at 9:21 am Edit

  Thanks for the comment John and advice. I am sure that people will follow up on this.

  Reply (http://m4eis.org/2015/10/24/major-flaws-in-westconnex-eis-biodiversity-study/?replytocom=207#respond)

  - **John Mccarthy** says:
    25/10/2015 at 9:26 am Edit

    Thanks Wendy

A People's M4 EIS

Critique of M4 East tunnel EIS Human Risk Assessment

11/10/201531/10/2015 wendybaconblog Commentaries & Objections Air quality, Asbestos, Asthma, Diesel fuel, filtration, health risk, Lane Cove Tunnel, Lung cancer, M5 ventilation stack, No2, Parramatta Rd., PM 10, PM2.5, Volume 2B Appendix H

(*Editor: These comments have been prepared to assist other citizens and groups who are responding to the EIS. They are published anonymously. The author has spent several months investigating these health related issues. We invite discussion, using the reply button below.*)

This is a critique of Appendix J The Human Risk Assessment (https://m4eis.files.wordpress.com/2015/09/m4_east_eis_volume_2d_app_j_human_health.pdf) which was prepared for Westconnex by Environmental Risk Sciences Pty Ltd (enRiskS).

Executive Summary

- This Human Health Risk Assessment is not accepted as a reliable study of the health risks of the WestConnex project
- This assessment has several serious flaws, but the key one is that it is not independent. It relies completely on the findings of the Air Quality Impact Assessment (Volume 2B, Appendix H), which in turn relies on the WRTM traffic forecast model. It does not question, in any way, the findings of the Air Quality Impact Assessment, thus does not assess the health risks of the very real potential for induced demand on Parramatta Road.
- A truly independent study would have noted the "hot spots" already existing in the corridor and suggested that NSW Health should be monitoring, via a longitudinal study, the health of residents living, schooling and working near those places a truly independent health risk assessment would have concluded that peoples' health was already being compromised in this corridor, and that further "hot spots" are going to be created by the project and that the relevant government authorities should be taking action about it, including by urgently implementing the National Clean Air Agreement

- Both NO2 and PM2.5 levels are already elevated and above guidelines in many of the localities within the project area, so any additional traffic due to induced demand (in tunnels or on surface roads) will add to this situation.
- This risk assessment does not point out that the air quality standards or guidelines used in the EIS may be superseded by stricter ones at the end of 2015 when the new National Environment Protection (Ambient Air Quality) Measure (NEPM) standards are passed
- Other cleaner forms of transport are required in this corridor.
- Diesel fuel vehicles need to be phased out quickly, as is happening in France and proposed in other parts of Europe.

The Westconnex/AECOM Human Health Risk Assessment reaches the following overall conclusions

- The tunnel doesn't need filtration as there will be negligible pollution at the portals and the ventilation stack will disperse pollutants across the air-shed with negligible effect on local residents
- A detailed assessment of two key pollutants (nitrogen dioxide – NO2 – and particulate matter measured in microns – PM10, PM2.5) is required, given their known associated health effects and the impacts of their co-exposure (common in urban environments) and the known main source of PM2.5 (and finer) in the urban environment being vehicle diesel exhaust
- Potential health impacts associated with changes in air quality (specifically NO2 and PM) within the local community was assessed as low and essentially negligible
- There are some residents who will have an increased exposure to PM as a result of the redistribution of emissions from surface roads
- There are some residents who will be exposed to less PM2.5 as a result of the project
- Summary of mortality data for three key factors (COPD, lung cancer, cardiovascular disease) indicates that Sydney Area Health Service has rates higher than the average NSW rate for all three indicators; summary of hospitalisation data for key factors (asthma, cardiovascular disease, COPD) shows asthma rates similar to NSW and cardiovascular disease and COPD less than NSW rates (possibly accounted for by high GP service level in Inner Sydney)
- Increases in population (and its distribution) of the suburbs within the project footprint will have no impact on the health outcomes
- The time spent exposed to pollutants within the tunnel is very short (minutes) and in the absence of published guidelines for NO2 and PM within tunnels, advises keeping vehicle windows up and air con on recirculation setting
- Potential for noise and vibration impacts during construction could result in adverse health effects so management and mitigation plan required for health effects

- After construction, some properties will have elevated road noise so mitigation measures are required
- In such a complex project, there are inherent uncertainties in each of the methods used to estimate emissions and concentrations, and there are limits to how accurately any impacts in future years can be predicted

Summary of key air quality issues accepted by the Health Risk Assessment

- By 2021, without the project, the maximum (residential and commercial) 1-hour concentration of NO2 estimated to be (in micrograms per cubic metre) 375ug/m3 and 360ug/m3 (respectively) – which is well above the guideline (of 246ug/m3); with the project completion, the levels estimated as 307ug/m3 and 286ug/m3 (respectively) – still well above the guideline.
- By 2021, with the project, the cumulative (maximum annual average, rather than acute) NO2 concentrations estimated to be below the guideline of 62ug/m3
- By 2031, with the project, cumulative NO2 concentrations estimated below the guideline of 62 ug/m3
- By 2021, without the project, the maximum (residential and commercial) 24-hr average concentration of PM2.5 estimated to be 29.3 ug/m3 and 30.5ug/m3 (respectively) – which is significantly above the guideline (25ug/m3); with the project completion, the levels estimated as 28.2ug/m3 and 26.6ug/m3 (respectively) – still above the guideline
- By 2031,with the project, PM2.5 levels estimated as above the guideline
- By 2021, without the project, the maximum (residential and commercial) 24-hr average PM10 concentration estimated as 54ug/m3 and 55.4ug/m3 (respectively) – above the current guideline (50ug/m3) and well above the recommended (from the 2014/15 review) of 40-50ug/m3
- By 2021, with the project, the maximum (residential and commercial) 24-hr average PM10 concentration estimated as 52 ug/m3 and 50ug/m3 (respectively) – above both the current guideline and recommended (review) guideline
- By 2031, both without and with the project, PM10 will be above both guidelines
- Community locations most at risk by 2031 of mortality, cardiovascular and respiratory illness from increases in PM2.5 concentrations are: **Homebush Boys High School, Ella Community Child Care Centre.St Joan Of Arc Catholic School, Dobroyd Point Public School, Woodfield Aged Care Centre**

Methodology of the Health Risk Assessment

The Risk Assessment relies on key aspects of the Air Quality Impact Assessment including:

- The tunnel design claim that there will be negligible impact at sites of portals and ventilation stacks
- The findings of the air quality report within this EIS, which relies heavily on the air quality data from the 3 OEH monitoring stations at Rozelle, Chullora and Earlwood, one of which, Rozelle, does not monitor PM2.5
- Traffic estimates within this EIS (which in turn rely on the population estimates).

For the health indicators, it relies on:

- data that is five (5) years old for the key health indicators
- hospitalisation data only for respiratory indicators,and *has not included any GP data relating to consultations*.

It does not include the demolition of buildings (houses and commercial) in the risks associated with the project, even though a high proportion of pre-1980's buildings could have some asbestos on the sites.

Flaws in the Health Risk Assessment Methodology

- It accepts the claim that the tunnel design is "state of the art", and doesn't canvass options to filter using actual "state of the art" like the Hong Kong Wanchai By-Pass tunnel and Madrid (Spain) M30 Ring-Road.

- It accepts a tunnel design that infers there will be no pollution at tunnel entry or exit ramps, with the speed into entrance ramps relying on the "piston effect" to pull vehicle emissions into the tunnel and into the ventilation stack. A close questioning of the "experts" (at a number of the WDA consultations) about tunnel exit ramps where they hit Parramatta Rd and West City Link, found they agreed that **there would be pollution in the vicinity of ramps if traffic hits congestion on exiting, and the same would be true for queuing traffic to enter tunnels. Thus their definition of "portals" is strictly that entry/exit area within the tunnel, not leading into or out-of the tunnels.** An independent risk assessment would have noted the possibility of build-up of pollution around these portal sites and the consequent health impacts.

- More real-time local air quality data should have also been used, particularly from near the sensitive receivers, given that the nearest two OEH monitors are some distance from these sensitive receivers. The OEH monitor at Chullora is closer to the Homebush/Nth Strathfield receivers, whilst the OEH Rozelle monitor is closer to the Haberfield/Ashfield receivers. However, both of the monitors are more than five (5) kilometres from these receivers and are not measuring real-time air quality in a 6kmx8km square area that has five of the heaviest-trafficked roads in Sydney. A very high proportion of residents in this 48 square km area live within 300metres of one of these main roads, so are exposed to much higher levels of NO2 and PM than are claimed in this report and based on the data from OEH Chullora and Rozelle monitoring stations. In fact, the OEH Rozelle station (located in the leafy grounds of the old

psychiatric hospital near the river) does not collect data on PM2.5. ** An AMA submission into air quality states that the current air quality monitoring system in Australia does not adequately capture data relating to the exposure of vulnerable groups; and information on the levels that specific communities are exposed to, and the subsequent risk, is often unknown; the AMA believes the current monitoring system is only capturing data that represents exposure of the broader population, not people at "hot spots" – these "hot spots" would include the large number of residential and commercial properties within 300 metres of major roads (Australian Medical Association (March 2013), Submission to the Senate Standing Committee on Community Affairs, Inquiry into the impacts on health of air quality in Australia, p7). The Human Health Risk Assessment itself indicates there are 10,000 residences and commercial units (which includes multiple apartment blocks) within the affected zone. A conservative estimation of this population would be 40,000 people who may already be living in "hot spots".

- the data collected at the four (4) roadside air quality monitoring stations can be supplemented by similar data from the Lane Cove study (Cowie et al, 2012) collected at Parramatta Road Camperdown in 2006-2008, which indicated highly elevated levels of NO2 and PM2.5. The traffic count (2005) at the Camperdown (control) site in that study was 65,000 vehicles/day, which is a little fewer than the City-West Link count of 69,000 vehicles/day and higher than Parramatta Road (at Dalhousie St Haberfield) of 54,000 vehicles/day (NSW RMS Average Daily Traffic 2012). All this data shows that levels are already higher than the guidelines, which themselves have been questioned by the AMA and several other groups in their submissions to the Senate Standing Committee On Community Affairs Inquiry Into The impacts On Health Of Air Quality In Australia.

- It should have noted that the new national air quality standards to be endorsed at the end of 2015, well before the project starts, may include higher standards for PM10 than are used in this EIS. The outcome could be many more "hot spots" than acknowledged in the Air Quality Impact Assessment.

- The study should have noted that several international studies have shown the adverse health effects of living less than 500 metres from major roads. In one longitudinal study of 2,300 children in Los Angeles, Guaderman et al found that improvements in the air quality (particularly PM2.5 and NO2) over several years had dramatically improved the lung function of children living less than 500 metres from major roads (Gauderman WJ, Urman R, Avol E, Berhane K, McConnell R, Rappaport E, Chang R, Lurmann F, Gilliland F.2015. Association of improved air quality with lung development in children. N Engl J Med. 372(10):905-913). A paper that calculates the medical costs of air pollution indicates that even the NEPM standards give a false sense of "safe" levels of pollution. This report states that as average levels of air pollution increase so do the average adverse health effects and that in fact there is no safe threshold. The paper claims that proper cost benefit analyses should be undertaken to accurately quantify adverse health effects due to both local and general increases in air pollution (Barnett, A, 2014 "It's safe to say there is no safe level of air pollution" Australian and New Zealand Journal of Public Health 2014 vol. 38 no. 5). The health risk assessment does not acknowledge any critique of what is considered a safe threshold because it completely accepts the assumptions of the Air Quality Impact Assessment. Available evidence doesn't indicate there is an exposure threshold for PM below which health effects do not occur; thus this risk assessment should have erred on the side of caution.

- The study should have noted the large number of people living, working and schooling less than 500 metres from Parramatta Road and thus at an already elevated risk of health damage; it also should have noted the increased risk if this corridor does not have the reduced traffic volume estimated by the WRTM, given the additional sources from the tunnel traffic.

- The study should have noted that the times when children and parents are walking to/from school in this polluted corridor coincide with the peak readings of pollution from commuter traffic; the same is true of park usage (the main large parks near portals – Cintra Park, Ashfield Park, Reg Coady Reserve and Robson Park all have multiple forms of use day and early evening) – there is no acknowledgement in the study's methodology of this type of real-time pollution health risk

- the traffic estimates are problematic for the surface use of Parramatta Road with project completion, as they rely on population forecast data calculated prior to the Parramatta Road Renewal Plan release. The population of the six (6) LGAs within the footprint of the project is forecast to grow by 40% between 2011 and 2031 (higher than the Sydney forecast of 33%); this is a volume of 132,844 people (Vol 2A, sect 5.2.1,p5-6). The Parramatta Road Renewal Plan allows for an additional 40,000 units in eight (8) "precincts" to be build between Auburn and Camperdown. These additional units could add an average of 100,000 people to the forecast figure in 2031 of 132,844 to give a truer forecast total of 232,844. A very high proportion of these new unit dwellers will own/purchase vehicles, thus adding to the pressures on the Parramatta Road corridor.

- A scenario including all risk factors for 2031 should have been discussed – that of increased traffic on the surface of Parramatta Road the full length of the project. The concept of 'induced traffic demand' is a real one and has not been taken into account by this health risk assessment. A meta-analysis of induced demand (Cervero, R, 2001, Induced Demand: An Urban and Metropolitan Perspective, Paper prepared for Policy Forum, US Environmental Protection Agency) concluded that, whilst there were a range of elasticities associated with increased demand with new road infrastructure, the phenomenon should not be trivialised

- The study ignores the possible contribution of the project to the estimated health costs of the Sydney region. In 2005 in Sydney motor vehicle pollution alone accounted for $1.5b in health costs (Australian Bureau of Transport and Regional Economics, 2005, cited in Senate Standing Committee On Community Affairs Inquiry Into The impacts On Health Of Air Quality In Australia, NSW Environment Protection Authority Submission, September 2013, p15). As this report states … "particle pollution is the driver for the high public health costs of air pollution" (ibid).

- The mortality data for three key factors (COPD, lung cancer, cardiovascular disease) shows that Sydney Area Health Service has rates higher than the average NSW rate for all three indicators, yet this risk assessment does not question whether exposure to already elevated levels of NO2 and PM2.5 may be a cause of these elevated rates.

- The reliance on five years old data for the key health indicators is problematic, given background sources of key pollutants (NO2 and PM2.5 and PM10) have increased in that five year period, as evidenced by vehicle fleet data. According to the Sydney Morning Herald (March 15-16 2014) the number of diesel vehicles on the road in Australia has more than doubled since 2005. ABS data shows that in 2015 there are 3.6 million diesel powered vehicles, accounting for 19.7% of the fleet; and over the five year period from 2010, the number of Passenger vehicles and Light Commercial vehicles registered with diesel fuel increased by

96.4% and 62.9% respectively (ABS, Motor Vehicle Census, Australia, cat no 9309.0). This increase in diesel fuel use would have had both short term and longer term impacts on health in the period since this health data was published and has not been captured by it, nor has this health risk assessment mentioned increased risks from the growing diesel fleet. The other concern with growth of the diesel fleet relates to car manufacturers using software called "defeat devices" that allows the masking of exhaust emissions in pollution control tests. Recent revelations (eg SMH, Sep 23 2015) of such corruption by what was thought of as a "good corporate citizen" – the Volkswagen company – indicates the distinct possibility that other manufacturers may be doing the same. If the environmental protection laws are being flouted by many diesel fuel vehicle makers, then the claim by this EIS that tougher laws are making the Australian vehicle fleet (and therefore the air) cleaner is questionable. The best option for any government keen to improve air quality in polluted parts of Sydney would be to quickly phase out diesel vehicles.

- Hospitalisation data for respiratory indicators should have been supplemented by GP survey data (given Medicare does not collect this level of data), collected by the relevant Local Health Districts.

- Sydney Area Health Service collects data on health risk factors, published for each Local Health District. The risk factor model is one that can be called a "personal behaviour" model. It includes risky alcohol drinking, smoking, consumption of fruit & vegetables, being overweight or obese, and adequate physical activity). It does not include external risk factors, like living within a few hundred metres of a busy road. The fact that the Area Health Services in NSW do not collect data for external risk factors, although they are known (e.g. exposure to coal dust (mainly PM10) and road pollution (notably NO2 and PM2.5) means that more meaningful data is not available to these types of Human Health Risk Assessments.

- The health impacts from noise and vibration seem to be underestimated by this health risk assessment. The writer should have conducted an independent analysis of that assessment, rather than relying on its findings. A independent review of the noise and vibration section of the EIS (which will be published by the People's EIS soon) raises uncertainty in a range of areas of the noise and vibration assessment. It states that, given the number of potentially impacted properties and people within the project area, further work needs to be done to ensure the local community and other affected stakeholders are provided with a fully informed assessment. This needs to occur as part of the EIS consultation process where further comment can be sought from the community, and not simply resolved through the Submissions Report (http://www.wendybacon.com/2015/short-guide-to-nsw-governments-westconnex-eis-process/) which does provide for any further input from the community.

- The health risk assessment should have included a risk assessment for asbestos and a management plan for mitigating risks, given serious community concern has been expressed over issues with asbestos removal and treatment at Granville (M4 widening stage) and at Alexandria (M5E stage).

- It is common practice in health research (including health risk assessments) to identify and analyse any related health studies to understand their the implications for the project being assessed-in this case the WestConnex project.Two such studies have been conducted on the Lane Cove Tunnel and on the M5East tunnel. The risk assessment ignored the 'fine print' findings of both of these studies. The Lane Cove study was of the short-term respiratory (asthma-like symptoms) health effects of exposure to emissions from the tunnel stack. The study was conducted 2006-2008, with thirty six (36) participants originally, falling to twenty

(20) by 2008. This is a very small cohort from which to draw any strong conclusions. The "control site" was Parramatta Road, Camperdown. The main conclusion was that residents near the eastern tunnel stack reported increased symptoms (even though there were no increases in pollutants) and this could be accounted for by other sources of pollution not measured in the study (e.g. particles smaller than PM2.5 and/or volatile compounds) or other unknown sources. The study also found significant adverse effects of increased airway inflammation, and chest and eye symptoms associated with exposure along Parramatta Road Camperdown after only 2-hour exposure periods. The authors recommended a follow-up study to better understand the effects of the ventilation stack. (Christine T Cowie et al, 2012, 'A randomised cross-over cohort study of exposure to emissions from a road tunnel ventilation stack', BMJ Open 2012;2). No further studies have been conducted.

- In the study of the pollution effects 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. The study's aim was to consider cancer incidence in the vicinity of the tunnel stack. Whilst it found there was a significantly higher incidence of lung cancer in postcodes immediately around the stack, the study concluded that it was unlikely there was a causal link. However, the study did qualify its overall conclusions with the comment that the descriptive epidemiological method used in the study was a relatively weak tool to resolve the type of issues under investigation. The study methodology was unable to discern the types of lung cancers screened in the area (smokers vs non-smokers). The study's argument was that, given lung cancers can take a number of years to become apparent, the higher incidence recorded after the opening of the tunnel may not have been connected to the stack emissions. The study concluded that the higher incidence of lung cancer probably pre-dated the locating of the stack in that area. This is an alarming finding, given that the cancer registry data would have been available to NSW Health, Department of Main Roads and the other bodies responsible for the EIS prior to the building of the M5East. So it would appear that an area of Sydney which already had an elevated incidence of lung cancer was chosen as the site of the M5East ventilation stack, when health research was already indicating the causal link between particulate matter and lung cancer. Given that mortality data for three key factors (COPD, lung cancer, cardiovascular disease) indicates that Sydney Area Health Service has rates higher than the average NSW rate for all three, is it possible that this project is again ignoring the potential health impacts of a project that independent experts predict will increase total traffic pollution over time.

Flaws in the assumptions on which EIS health findings are based

- The health risk assessment does not take into account the possibility of total higher traffic along Parramatta Road than the WRTM forecasts. An Australian Government Department of Infrastructure and Transport Research (2012) report into traffic growth in Australia shows that traffic per person in Australia has grown steadily between 1965 and 2011. The measure of traffic volume (number of vehicles x distance travelled = vkt) in all states and major cities for this period indicates that the pattern of increases has been consistent, with only minor changes

in response to petrol price rises, unemployment and the global financial crisis. 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.

- There is no reason to believe that traffic volumes on the surface of Parramatta Road will decrease after 2021, especially with the anticipated population growth in Sydney, including in Inner Western Sydney. The traffic studies on which the air quality data assessments are based does not take into account Urban Growth plans to build more than 40,000 apartments in Parramatta Rd. Given that this EIS shows that levels of PM2.5 and NO2 are already elevated in parts of this corridor, it is obvious the project is designed to take current volumes of traffic off this road so that high-density residential development can be enabled even in the face of currently known health risk factors. This is a huge gamble with people's health.

(Ed:This post was slightly updated on October 31, 2015)

One thought on "**Critique of M4 East tunnel EIS Human Risk Assessment**"

1. **Kathryn** says:
   22/10/2015 at 1:42 am Edit

   I raised at the Kingsgrove (no) information night the tunnel filtration used on the Hong Kong tunnel. I was advised by the Tunnel Filtration rep that the reason for filtration in Hong Kong was due to the stack located alongside apartment buildings 25 stories high. Looking at some of the Urban Growth designs, there is apparently planned buildings of similar size along Parramatta Road.

   When looking at the Kingsgrove unfiltered stack (in a valley), its proximity to Moorefields Rd Primary School and the many homes (upwind on a hill) the effect of this unfiltered stack will basically give these people a lungful of unfiltered toxins 24/7.

   A complete disregard to the health of the community and the potential medical bills that the state will have to pay on the long term.

   Reply (http://m4eis.org/2015/10/11/critique-of-m4-east-tunnel-eis-human-risk-assessment/?replytocom=162#respond)

A People's M4 EIS

National Trust : Westconnex not worth heritage destruction

20/10/201525/10/2015 wendybaconblog Commentaries & Objections
Australian Rail Association, Concord, Haberfield Heritage, Heritage, National Trust (NSW), National Trust motorway policy, Powell Estate, public transport

Last week, the National Trust of Australia (NSW) Advocacy Director Graham Quint made a submission to the Westconnex M4 EIS process. The National Trust (NSW) objects to the destruction of so much heritage and argues that the Westconnex motorway system is a flawed policy that does not justify the loss. The People's EIS recommends this submission to those concerned about the loss of heritage.

The submission begins by reiterating a few points drawn from its February, 2014 submission to the WestConnex Delivery Authority M4 concept design.

- It concerns the Trust that, at the Environmental Impact Statement assessment stage of this massive project, contracts may already have been signed and commitments made to commence construction when the full impacts of the development may only be coming to the public attention.
- Over the past fifteen years the Trust has continued to express concern at the heritage impacts of inner urban motorway proposals and has supported mass transport options such as light and heavy rail in preference to inner urban motorways.
- While acknowledging that the increased mobility and affluence of our society and an expanding population require much improved transport facilities, the National Trust opposes further motorways being brought into the inner suburbs and central business district if they threaten areas of historical, architectural, scenic and social importance.
- The National Trust believes that the provisions of public/private partnership agreements for urban motorways should be made public and that such agreements must not contain penalty provisions for compensation payments to a motorway operator if a public transport system competes effectively with the motorway.
- The National Trust would oppose public/private agreements that disadvantage the public who do not choose to use the toll roads constructed under those agreements and believes that massive expenditure on motorway development will divert much needed public and

private investment away from public transport development which can move large numbers of people more effectively and with much less adverse heritage impact.

- The constant daily movement of large transport trucks severely degrades the urban environment and the National Trust urges that rail transport should be the preferred means for transporting container goods related to Port Botany and Sydney Airport. The Trust would oppose motorway proposals which promote increased large truck movements through urban precincts, particularly those with heritage significance.

- The National Trust acknowledges that inner city motorway development will be inextricably linked to residential/commercial redevelopment of higher densities in the zones adjoining the
motorway and consequently, would oppose such development, or elements of that redevelopment when it: –

  impacts upon, or degrades the values of adjoining, Heritage Conservation Areas

  involves the demolition of Listed Heritage Items

  involves the demolition of places which have been removed from Heritage Lists on non heritage-based grounds

  involves the demolition of places which, in the Trust's view are of indisputable heritage significance, but which have been denied statutory heritage recognition.

National Trust history in campaigning with community

The National Trust has had a long history and involvement in campaigning with the community to protect inner urban heritage.

In 1972 the National Trust opposed the North-Western and Western Expressways which would have cut a swathe through Glebe, demolishing 800 homes and the property "Lyndhurst", to the steps of the Sydney Town Hall.

On 26 February, 2014 the Board of the National Trust of Australia adopted a Policy on the Heritage Impacts of Urban Motorways. This Policy built on and reiterated earlier positions and policy statements including:

- National Trust: Policy Statement on Urban Freeways (1976)
- National Trust Policy on Urban Freeways (1981)
- National Trust Discussion Paper: Towards a Transport Policy for the National Trust (1989)
- National Trust Policy Paper: Transport – The Heritage Implications (1995)
- Trust Alert: Motorway proposals threaten inner city Urban Conservation Areas (2005)

National Trust Policy on the Heritage Impacts of Urban Motorways (2014)

1. While acknowledging that the increased mobility and affluence of our society and an increasing population require much improved transport facilities, the National Trust will oppose further motorways being brought into the inner suburbs and central business district if they threaten areas of great historical, architectural, scenic and social importance.

2. The National Trust will oppose the loss of public parklands for inner urban motorway construction, including both permanent loss involved with a motorway route/connection ramps or shorter term alienation during the construction phase.

3. The National Trust believes that the provisions of public/private partnership agreements for urban motorways should be made public and that such agreements must not contain penalty provisions for compensation payments to a motorway operator if a public transport system competes effectively with the motorway.

4. The National Trust would oppose public/private agreements that disadvantage the public who do not choose to use the toll roads constructed under those agreements.

5. The National Trust believes that massive expenditure on motorway development will divert much needed public and private investment away from public transport development which can move large numbers of people more effectively and with much less adverse heritage impact.

6. The National Trust believes that the constant daily movement of large transport trucks severely degrades the urban environment and will urge that rail transport should be the preferred means for transporting container goods related to Port Botany and Sydney Airport. The Trust would oppose motorway proposals which promote increased large truck movements through urban precincts, particularly those with heritage significance.

7. The National Trust acknowledges that inner city motorway development will be inextricably linked to residential/commercial redevelopment of higher densities in the zones adjoining the motorway and consequently would oppose such development or elements of that redevelopment when it;

- impacts upon or degrades the values of adjoining Heritage Conservation Areas,
- involves the demolition of Listed Heritage Items,

- involves the demolition of places which have been removed from Heritage Lists on non heritage- based grounds,
- involves the demolition of places which, in the Trust's view are of indisputable heritage significance but which have been denied statutory heritage recognition.

Having regard to this Policy, the Trust has examined the Environmental Impact Statement's documented impacts on heritage and notes the following:

Listed Heritage Items to be demolished

- 11 and 23 Sydney Street, Concord, Rare examples of Victorian houses in Canada Bay
- 64 Concord Road, Concord, example of transitional Victorian/Federation house
- 9 Wattle Street, Haberfield, an example of John Spencer-Stansfield's Design No 1

- 19 Wattle Street, Haberfield

- 21 Wattle Street, Haberfield
- 23-25 Wattle Street, Haberfield
- 35 Wattle Street Haberfield
- 37-39 Wattle Street Haberfield
- 41-43 Wattle Street, Haberfield
- 51 Wattle Street, Haberfield
- 53 Wattle Street, Haberfield
- 46 Martin Street, Haberfield
- 164 Ramsey Street Haberfield.
- 92-94 Chandos Street, Haberfield
- 96 Chandos Street Haberfield
  Potential Heritage Items to be demolished
- 2 Short Street East, Homebush – a fine example of interwar bungalow with Arts and Crafts style details
- 15 Young Street, Concord – an example of a Federation Arts and Crafts style house with unusual decorative pressed metal oriel window apron
- 54C Sydney Street, Concord – an unusual example of an interwar bungalow with Arts and Crafts influences
- 56 Sydney Street, Concord – an example of a Federation bungalow
- 71 Concord Road, Concord – an example of a good intact transitional Federation/interwar bungalow

Properties proposed for demolition within the Haberfield Conservation Area
– 53 houses
– 29 of these contributory to the values of the Conservation Area
– 2 intact tree lined streets – Sydney & Edwards Streets
– Opening the back fences of other houses to the public domain

Properties proposed for demolition within the Powells Estate Conservation Area
– 11 dwellings
– 10 of these are contributory to the values of the Conservation Area

– 2 are individually listed Heritage Items
Partial demolition with major consequences
– Wesley Uniting Church, 81 Concord Road

Conclusions

The National Trust notes that this M4 East is only one section of the WestConnex Motorway and that **there will be additional heritage impacts relating to the St Peters Interchange and the future link between Haberfield and St Peters.**

In the Trust's view the heritage impacts of the WestConnex Motorway are severe. The Trust must question whether the financial commitment for the total project in today's dollars of $15 billion (inevitably set to rise) would be much better allocated to public transport.

Public transport in all its forms (heavy rail, light rail and buses) has much greater potential to remove motor vehicles from roadways, reducing traffic congestion.

The Sydney Trains Website explaining "why is rail travel a better choice for the environment?" puts the following case:

> Greenhouse gas emissions per passenger kilometre for rail transport is up to five times less than that of car transport.
>
> The Australian Rail Association has documented that only 2.6% of Australia's transport greenhouse gas emissions are attributable to rail.
>
> This 2.6% includes both passenger and freight rail so, in fact passenger rail contributes even less.
>
> A train line can move 50,000 people an hour. Compare this with a freeway lane which can move 2500 people an hour.
>
> Moving 1,000 people requires either 1 eight carriage train or 15 buses or anywhere from 250 to 1,000 cars. This quantity of car travel would then require 1.37 hectares of parking space in the Sydney Central Business District.
>
> Urban rail transport is seven times safer than road per passenger kilometre.
> The external costs of rail in terms of noise, air pollution, accidents, infrastructure deterioration and congestion are much lower than using your private vehicle

.

The National Trust lodges its objection to the WestConnex M4 East proposal because of its severe impact on Listed Heritage Items and Heritage Conservation Areas and because, in the Trust's view, it diverts much needed public and private investment away from public transport development which can move large numbers of people more effectively and with much less adverse heritage impact.

You can read the EIS Heritage Appendix here (http://m4eis.org/category/table-of-contents/heritage/)

Read more about the Haberfield Conservation Area (http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;place_id=3352) on the Federal Department of Environment's website

(https://m4eis.files.wordpress.com/2015/10/img_6459-1.jpg)

Haberfield Westconnex Action Group and Save Ashfield Park protesting against heritage destruction in October 2015

House – 9 Wattle Street, Haberfield	
Image	
Description	This is a single-storey house of brick, having a slate roof trimmed with terracotta. Its architectural style is the characteristic Queen Anne mode introduced to Haberfield by Richard Stanton, who developed the garden suburb. The house is an example of one of the variations of John Spencer-Stansfield's Design No 1 for Stanton's Haberfield Proprietary Limited. It has an L-shaped plan, with a gable wing projecting streetwards from a hip-roofed rectangle. The front is tuck-pointed with dark brick quoins and window reveals, and a squinch-brick plinth. The slate roof has gablet ventilators, terracotta trim

(https://m4eis.files.wordpress.com/2015/10/9-wattle-street.jpg)

Image from the EIS Heritage study – each item is documented. This house will be demolished to make way for an unfiltered ventilation stack

One thought on "**National Trust : Westconnex not worth heritage destruction**"

1. **Kathryn** says:
   20/10/2015 at 11:49 pm Edit

   Thank you National Trust!.
   On a recent trip to India on business – I had just one day to see the sights. Naturally I chose the heritage area of Hyderabad. Why – as a visitor – did I want to wander around the hitech area. The heritage area is what is the essence of a city. Sydney's equivalent is the Rocks, as well as those inner suburbs that are Australia's history. That is where the early settlors in the 1800 and early 1900 made their homes. Our forebears for many of us. Good

thing, back in the 70's, workers, National Trust and the people stepped in and stopped the Government and Developers from tearing down 'those old buildings' in the Rocks and Glebe. I am gobsmacked that such a proposal – to rip a motorway through our history – has advanced so far in its planning.

Reply (http://m4eis.org/2015/10/20/national-trust-westconnex-not-worth-heritage-destruction/?replytocom=158#respond)

Westconnex fails Objective 10 : Protect natural & cultural resources and enhance environment

23/10/201525/10/2015 wendybaconblog Commentaries & Objections Asbestos, Beverly Hills, Cooks River Iron Bark Bushland, Erskine Park, Green and Golden Bell Frog, Grey Headed Flying Fox, Haberfield, Kathy Calman, property acquisition, salinity, Westconnex Core Objective 10, wetlands

(Editor: This is the third submission prepared from the perspective of the Objectives of the project. The other two did an overview analysis of all ten objectives – here (http://m4eis.org/2015/10/17/does-westconnex-meet-its-core-objectives/) and here (http://m4eis.org/2015/10/18/objectives-of-the-m4-project-yet-another-response/)

By Kathy Calman

(Kathy Calman is the co-convenor of the Beverly Hills Kingsgrove WestCONnex Action Group (https://www.facebook.com/notowestconnexbeverlyhills?fref=ts). She knows a lot about motorways because she has lived beside the M5 at Beverly Hills for years. She knows what it's like to be woken by truck noise in the middle of the night, to count the high percentage of cars with single drivers and she recently watched open space and trees she and other members of her community had planted being stripped away for the King Georges Rd interchange that Westconnex's own figures show will save little or no time for commuters. The community were told that the noise walls that offer some protection from M5 noise would come down for about 15 weeks. The Editor was told by the construction company Fulton Hogan that it could be up to 7 months. No wonder she warns residents of being wary of accepting promises about mitigation of construction impacts that could turn out to be wrong. She's also aware that native flora and fauna saved as a condition of the M5 would go if the Westconnex M5 duplicate is allowed to go ahead.)


(https://m4eis.files.wordpress.com/2015/10/11222423_1873063222917859_3341986940853463042_n3.jpg)

Kathy Calman at Westconnex Action Group early morning stall outside Westconnex headquarters with her frog cakes

Analysis of Core Objective 9 : Protect natural and cultural resources and enhance the environment.

The Westconnex's Core Objectives are drawn from the NSW Long Term Transport Master Plan (Transport for NSW 2012a)

The Westconnex project does not meet this core objective

Features of the M4 East project include: Widening roads; unfiltered exhaust stacks close to homes, schools and aged care centres; destruction of trees; temporary and permanent loss of greenspace; induced traffic onto local roads; impact on wetlands, groundwater and endangered species; exposing residents to prolonged high impact acute noise 24/7; hundreds of significant truck movements a day impacting on the safety of residents particularly primary school children; isolation; community dislocation; car dependence.

None of these factors enhance the environment. In fact, this proposal has a very significant negative impact on the urban and natural environment where over a quarter of a million people live and 64,000 work in the M4 section. It will remove valuable cultural resources including heritage buildings.

Sectional planning approach

I **object** to the sectional planning project approach to the 33 kilometre Westconnex motorway. This prevents serious consideration of the impacts of the larger Westconnex project. **While broad justifications for the whole project are used to justify local threats, there has been no overall analysis and evaluation of the environment threats from the whole project.**

This submission endeavours to take an **holistic approach** to the project and refers to both the M4 and M5.

Community Consultation

I object to the poor standard of community consultation.

Many people have reported that the information kiosks and material provide inadequate and misleading information to the public. The kiosks are attended by casual staff with no background experience or education on the subject matter.

Claims of 'busting congestion' and the various time savings getting from point to point are contradicted even within Westconnex's own EIS, not to mention independent infrastructure experts with worldwide experience (https://www.facebook.com/NoWestconnex/videos/658196694322742/) that slam this project as backward looking and based on poor transport planning principles.

The negative impact on thousands of people is either glossed over or embedded somewhere in the fine print in the Westconnex M4 EIS.

- Western Sydney is not aware that their daily commute will become a lot more expensive via new and reintroduced tolls
- Australian and especially NSW tax payers are taking the full risk on the viability of this project
- Unfiltered exhaust stacks – nine for this project spaced roughly every 3km.
- Increased pollution and noise
- Acquisition of parks, green space, homes and business
- Loss of local employment. (Estimation of hundreds in Haberfield alone).
- Impact on non-acquired businesses with loss of passing trade opportunities
- Local roads will be more congested and travel times for many longer
- Loss of an opportunity for NSW to invest in worthwhile public transport infrastructure that is the most efficient way to provide to move masses of people and freight and better meet the needs of the whole of NSW.

Social Impacts

Significant impacts on residents and businesses

Home acquisitions

The stated recommended mitigations in Appendix M is contradicted by actual outcomes. Home Owners (reported (http://www.smh.com.au/nsw/residents-offered-far-below-market-value-for-homes-needed-for-westconnex-lawyer-says-20150702-gi3puf.html) in the media) claim that lower than market value is offered for their homes and that they are bullied by RMS staff. Longstanding communities members are being forced to move far from their social networks (http://www.altmedia.net.au/baird-accused-of-being-blind-to-westconnex-pressure-on-older-residents/111184).

Renters are also having to seek legal advice for relocation compensation. One long term renter in the same home for 18 years was only offered $5000 to relocate.

The disadvantaged residents in social housing (including independent homes for people with special needs) of RMS property have not had their needs addressed in the rush to evict hundreds of people from their homes.

Most of these people forced from their homes will likely find they have to move some distance away from where they have established support networks. This would be particularly hard on the frail and elderly.

I object to the mitigation of offer of 'counselling' which even if it does exist (and some say it has not been offered to them) would be of little assistance.

Impacts on social facilities

In the area impacted by the project, there are:

- 8 aged care and nursing homes
- 5 primary schools, 3 high schools and 3 kindergarten to Yr 12
- 5 childcare centres and one tertiary education provider
- A number of sports and recreation facilities
- Religious services a
- Shopping centres

I object to the 'mitigation' for organisations that will be left near the tollway construction site (such as the Willows Private Nursing Home and Peek-a-boo Child Care Centre) described as "consultation for 'relief periods' from 24 / 7 construction (destruction) if "feasible and reasonable". This proposal is shallow and unacceptable.

This is an inhumane approach towards the most vulnerable in our society.

(https://m4eis.files.wordpress.com/2015/10/img_3433.jpg)

Students from Haberfield Primary School protesting on the pedestrian bridge after school

Amenity Mitigation

This project will have a high impact on thousands of people. Noise 24/7 for three years, loss of visual outlook, and views of construction (destruction) compounds should not be trivialised. This is a prolonged construction period.

I object to the suggestion that decorating hoardings and some temporary plantings around the compounds is 'mitigation'.

Sports fields

Locals and visiting teams will be playing active sport within an environment of elevated pollution. Emissions from modern vehicles contains fine particulate matter that can penetrate the cells of lungs. (See Air quality submissions here (http://m4eis.org/2015/10/15/environmental-justice-westconnex-and-air-pollution/) and here (http://m4eis.org/2015/10/22/comments-on-air-quality-impact-statement/).

I object to a project that places the health of the community at risk.

Unsafe Removal of Asbestos.

This dangerous substance has been located in several locations across the Westconnex project already. There is evidence (https://newmatilda.com/2015/10/02/westconnexs-asbestos-problem/) that trucks removing asbestos have not been following appropriate safety standards such as sprinkler systems,

washing down trucks before departure, and neglecting to properly cover loads.

I object to the contempt Westconnex has shown for the health and safety of residents (http://www.jennyleong.org/government_forced_to_recognise_westconnex_asbestos_concerns) within the locations and on route to Erskine Park where soil contaminated with asbestos has been dumped without being wetted or properly covered at the time of disposal.

Divisive Infrastructure

I object to a 'solution' that results in a dreadful outcome on the amenity for all impacted suburbs. A wide, dirty and noisy toll road and the spaghetti interchanges thrust through suburbs that form part of Australia's 19th and 20th century history including the destruction of heritage listed homes and historic buildings.

Mental Health

The stress imposed on people by the Westconnex will increase the likelihood of anxiety and depression. The grief people will experience watching the suburb and urban landscape they love permanently destroyed has not been sufficiently addressed in the EIS social impact statement.

The permanent impact of this toll road on thousands of people's physical and mental health through

- visually divisive spaghetti interchanges
- noise barriers -that we know little care to landscaping for residents will be addressed –ref M5 KGR landscape design aka bare noise walls
- prominent and unfiltered exhaust stacks a constant reminder that residents and workers and their families are being poisoned by high levels of pollution
- loss of accessibility by pedestrians and cyclists
- impacts on the elderly for mobility, safety, connectivity and isolation
- impacts to the community and schools with the loss of neighbours
- impacts on the significant number of people forced to leave their home and community – loss of social networks and loss of school mates.
- stress and anxiety brought on by living in a permanent high noise and highly polluted environment.

Cumulative Impacts

Claims of reduced traffic on Parramatta road and improving amenity are unsubstantiated. The traffic congestion on the Parramatta road corridor will not improve (source your EIS). With a better solution to mass transport people (public transport) not addressed and increasing population, Parramatta Road will remain congested.

Impact on businesses

There are approximately 600 permanent jobs that will disappear due to this project due to property acquisitions at Haberfield alone. Remaining businesses, including aged care and child care centres, are likely to fail or suffer significant loss of trade. Suggestions that the patronage of construction workers will augment the local economy seem to be clutching at straws to find a solution here.

Social Infrastructure

Stated mitigation – Landscaping treatments for the benefit of residents. Let's revisit the landscape design of the King Georges Road Interchange – hundreds of metres of bare noise walls because it is easier for the maintenance crew to inspect. Never mind the residents or professional pride or genuine appreciation for the huge disruption caused to residents. Ugly bare walls.

I object to the likely outcome facing residents of the landscaping treatments being a typical, visually divisive structure.

Loss of vegetation

- Tree canopy for the communities along the 33km route of WestCOnnex is less than 19%. This polluting tollway will remove even more precious greenspace.
- Even a single hectare lost is devastating for highly urbanised communities, particularly where the shared greenspace is all they have.
- WestConnex has not included the overall acquisition of greenspace across the whole Westconnex project in any of its community 'information' material to enable the general public to form an informed opinion of the costs and benefits of the project.

Car Dependence

Build a city for the people – and they will come. Build a city for cars – and congestion will prevail.

Ironically, it is these suburbs – targeted for destruction by Westconex – that demonstrates what the NSW Govt should be the planning for new outer suburb communities. The walkability factor – with ready public transport and local shopping centres. Local employment opportunities or employment centres (including high value jobs) within 60 minutes by public transport. Shared community spaces for gardening and leisure and social connectivity. Cultural and entertainment facilities for all ages.

The infrastructure planning for the new western suburbs, such as near Camden is woeful, with only 7% of Camden residents using public transport. Westconnex promotes socially isolating car dependence and the environmental impact of ever increasing traffic noise and air pollution – and does not provide residents of the western suburbs with any relief from congestion.

I object to this proposal as it is the wrong project for the wrong time.

Biodiversity and natural environment

Australia has the notorious distinction of having possibly the worst extinction record on earth according to Richard Kingsford, professor of environmental science at the University of NSW. This is predicted to continue without serious changes to the way we conserve our environment

Endangered Fauna

Green and Golden Bell Frog

Scientists are studying several species of Australian frogs – including the endangered green and golden bell frog – whose skin secretions are toxic to the multi-drug-resistant golden staph know as MRSA. The GGBF secretions may be the wonder drug of the 21st century. Yet, the overall WestConnex project will more than likely be responsible for the extinction of such an important species.

Rare Grey Headed Flying Fox

The cumulative loss of vegetation for this vulnerable species in the M4 and M5 sections will significantly contribute to the endangerment of yet another species. These flying foxes forage on vegetation regardless if it is original or planted. The Office of Environment and Heritage states that the continued removal of foraging vegetation – and the forced concentration of populations into smaller regions – will result in a continued decline in their numbers.

Eastern Bentwing Bat

The impact on this species will be the loss of foraging habitat and the disturbance of roosting sites. Again, as similar to all of our native animals within Sydney metro, the significant and continued loss of vegetation will have a serious impact on these local communities.

Cooks River Castlereagh Iron Bark bushland

Another cumulative impact on our natural environment, with the loss of a critically endangered stand, a development condition of the first M5, will be destroyed.

Wetlands

Wetlands provide significant economic, social and cultural benefits. They are important for primary products such as pastures, timber and fish and support recreational and tourist activities. Wetlands also help reduce the impacts from storm damage and flooding, maintain good water quality in rivers, recharge groundwater, store carbon, help stabilise climatic conditions and control pests. They are also important sites for biodiversity.

Wetlands cover about 9% of the earth's surface and are estimated to contain around 35% of global terrestrial carbon. Wetlands act as sinks for carbon dioxide and other greenhouse gases, especially if their vegetation is protected and their natural processes are maintained.

The proposed F6 extension (which is referred to as a given in the EIS although it is not even in early stages of planning) will likely also impact on the Rockdale wetlands – another significant loss to our natural and human environment.

I object to the sectional approach taken to the Westconnex project which makes it difficult to properly assess the cumulative impact on our wetlands across both Westconnex and Southconnex

I object to the unwarranted destruction of what remains of our natural environment for a project which is managed by politicians and business people who continue to hide the business case on which it is based. Westconnex managers have been unable to properly debate or refute the many informed critiques of the project.

Flooding

During construction, there is the potential for local catchment runoff to enter project excavations at the interchange locations and impact the construction ancillary facilities. Construction activities also have the potential to exacerbate flooding conditions in adjacent developments. The mitigation stated are physical barriers designed to protect the works areas and tunnel entries so as not to increase flooding conditions in adjacent areas. The public needs full independent advice on the safety of the tunnels which is not possible in the short period allowed for consultation.

Urban Salinity

I am concerned about the potential for salinity damage that can shorten the life of urban infrastructure such as roads, buildings, water and sewage pipes. This leads to costly maintenance and repair by homeowners and councils.

The movement of excess water and salt in parks and gardens can affect plant growth and cause plant death. Sports grounds and recreation areas affected by urban salinity may become bare, unattractive and unusable. Soil properties can be altered significantly making it hard to revegetate these areas.

Pockets of native vegetation in and around urban landscapes may also be affected. This can have serious consequences including the disappearance of native flora and fauna and poor downstream water quality.

I am concerned about the impact of groundwater and the potential for increased risk of flooding due to the reduction of greenspace.

The public needs access to more independent technical information so that they can understand the true impacts of the project.

I conclude that Westconnex comprehensively fails one of its claimed core objectives – *'Protect natural and cultural resources and enhance the environment'* is not met by the Westconnex project.


(https://m4eis.files.wordpress.com/2015/10/img_3108.jpg)

Trucks waiting to get onto the M5 at Beverly Hills

Here's another strong submission from a resident at Haberfield (http://m4eis.org/2015/10/06/a-response-to-westconnex-m4-east-proposal-an-objection-from-a-haberfield-resident/).

Aurelia's story from Homebush (http://m4eis.org/2015/10/14/westconnex-comes-to-underwood-road-homebush-aurelias-story/) also provides more on the social impacts of Westconnex.

Here's a summary of the Social and Economic Impact Report (http://m4eis.org/2015/10/04/summary-of-m4eis-social-and-economic-impact-reports/)

(https://m4eis.files.wordpress.com/2015/10/img_3305.jpg)

Kathy Calman knows from experience what it's like to live near a motorway. Her house in Beverly Hills

One thought on "**Westconnex fails Objective 10 : Protect natural & cultural resources and enhance environment**"

1. **Kathryn** says:
   24/10/2015 at 10:01 am Edit

   The M5 King Georges Road Interchange – Cooloongatta Rd – the noise wall situation is getting worse. An error that we pointed out a year ago in the EIS stated our noise walls were 2.5 metres. They neglected to record that there was a 2 metre mound, making it 4.5 metres (and still we are above RNP night time noise goals at that level).

   According to Fulton Hogan – its 3 metres in the EIS and 3 metres we are getting (though the EIS actually recommended our walls should be 8 metres). To make matters worse, we are getting plastic walls. 128 metres of the stuff – instead of concrete barriers. Nice view of 12 lanes of highway!. Thanks residents for putting up with the destruction for 19 months. Here is the payback. An unliveable suburb.

   Reply (http://m4eis.org/2015/10/23/westconnex-fails-objective-10-protect-natural-cultural-resources-and-enhance-environment/?replytocom=180#respond)

A People's M4 EIS

Westconnex climate change claims don’t ring true

02/11/201502/11/2015 wendybaconblog Commentaries & Objections climate change, Gavin Gilchrist

With less than two months allowed for the consultation period, there are many topics and issues that will be overlooked. Some of these will be investigated more closely after the exhibition period closes.

On the question of climate change and Westconnex, the People’s EIS strongly recommends this SMH piece by sustainability consultant Gavin Gilchrist

http://www.smh.com.au/comment/westconnexs-climate-claims-dont-ring-true-20151027-gkkava.html (http://www.smh.com.au/comment/westconnexs-climate-claims-dont-ring-true-20151027-gkkava.html)

The Sydney Morning Herald

WestConnex's climate claims don't ring true

Gavin Gilchrist
Published: October 29, 2015 - 9:00PM

There's so much about WestConnex, the proposed 33-kilometre toll road across and under Sydney, that doesn't add up in so many ways, but nothing as much as the NSW government's claims about its climate change benefits.

The Baird government claims this $15.4 billion road across the inner west and south-west will be good for the climate.

WestConnex is a looming megaproject that almost seems to have evolved from another era in public life, a period when a Prime Minister believed coal was good for humanity, his top business adviser thought climate change was a United Nations plot, and Clive Palmer was a political force to be reckoned with.

WestConnex today is a project whose time has come and gone before its design has even been finalised. From the PM down, most recognise the need to deal with climate change.

For three years, the NSW government, proponents of WestConnex, said nothing about the toll road's climate change impact. But last month the environmental impact statement for the M4 East extension – public submissions for which close next Monday – included analysis on greenhouse gas emissions from consultants Aecom, the same firm that announced last month that it would no longer provide traffic and revenue forecasts for toll road operators, having settled a $280 million legal case for overly-optimistic forecasts for a proposed Brisbane toll road.

The M4 East section comprises two three-lane tunnels and linking roads and interchanges from Homebush to Haberfield; the environmental impact statement steps us through forecasts for greenhouse emissions from vehicle exhaust. The conclusions do not add up.

Aecom calculated the "vehicle kilometres travelled" (one vehicle travelling one kilometre, or the "VKT") in one year along different sections of the M4 East, including the tunnel, and the alternative route on Parramatta Rd. By 2031, on their figures, there will be 41 per cent more light vehicle traffic (cars, vans and motorbikes), from 266 million to 375 million VKT, if WestConnex is built compared with if it was not built.

For heavy vehicles (trucks and buses) it is forecast to double annual VKT from 27 million to almost 57 million by 2031 with WestConnex compared with if it wasn't built.

The WestConnex M4 East tunnel, running largely south of Parramatta Road *Photo: WestConnex Delivery Authority*

Elsewhere in the document these increases are explained as being because of the "attractiveness" of WestConnex for trips to the city, airport and Port Botany. That is, new roads induce more traffic.

Calculations are then made about vehicle types, their fuel consumption and their speed to conclude there will actually be a decrease in overall fuel use. Light-vehicle VKT may be up 41 per cent but total fuel consumption falls 11 per cent. Trucks movements double but their fuel use is down 13 per cent.

This lower fuel use, thanks to WestConnex, is why this environment impact statement suggests vehicle greenhouse emissions will be lower with WestConnex than without.

How can this be? We read: "As improvements to traffic flow and congestion are achieved through increased speeds, reduced travel distances and reduced frequency of stopping, fuel efficiency is improved and subsequently GHG [greenhouse gas] emissions associated with road use are reduced."

We're told that because traffic will be whizzing along rather than stuck in a jam, less fuel will be used. This argument has for years been discredited: what matters is the VKT. Higher VKT means higher greenhouse emissions. No credible authority in the world today would suggest that building freeways is the solution to cutting national greenhouse emissions.

And in fact, by 2031 WestConnex traffic will not be whizzing along. The official analysis shows that by 2031 there will be "high traffic densities" in the M4 East tunnel "particularly westbound during the AM peak where capacity is reached". In other words, the tunnel will be chockers and at a standstill.

What then? Build another six-lane tunnel?

Gavin Gilchrist is a sustainability consultant. He worked briefly this year for NSW Greens MP Jenny Leong.