NoW Public Transport WestConnex M4 East Submission

NoW (NoWestConnex) Public Transport is a <u>coalition of community groups</u> working to protect our suburbs and environment and promote real solutions for active and public transport. Affiliated groups include <u>Wolli Creek Preservation Society</u> and <u>EcoTransit</u>. Other groups include <u>WestCon Community Action Groups</u> (Haberfield and Ashfield, Annandale, and Concord and Strathfield chapters), and <u>Save Ashfield Park</u>.

NoW Public Transport strongly objects to the continuing progress of the M4 East on the following grounds, expanded below:

- The EIS does not contain the evidence to substantiate the claims made in it.
- On the evidence provided in the EIS, the WestConnex M4 East will not meet its objectives
- The EIS does not include a wide range of salient evidence.
- The EIS does not properly reflect the costs or benefits of the WestConnex M4 East
- The EIS does not properly consider the alternatives to the WestConnex M4 East
- The EIS does not properly fulfil the obligations in the Secretary's Environmental Assessment Requirements

This submission is not an exhaustive list of the faults in the EIS. The EIS is a large document that has been months and years in preparation and the community has only had 55 days to assess it. 55 days is insufficient time to chronicle all the deficiencies in the EIS, but it is sufficient time to be certain that it contains major deficiencies, deficiencies of sufficient magnitude that to proceed with the project would be a corruption of proper process and would cause significant avoidable detriment to the interests of the people of Sydney and NSW.

This submission is a compilation of chapters that have been received by from members of the public by the website 'A People's M4 EIS' (http://m4eis.org).

Contributions come from a range of sources, including professionals in a number of fields, from residents and businesses owners who will be severely impacted by WestConnex if it proceeds, and from other concerned citizens.

Introduction

The stated objectives of the M4 project, which are similar to the stated objectives of the overarching WestConnex project, are as follows:

- 1. Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways (Sydney Airport and Port Botany), Western Sydney and places of business across the city
- 2. Relieve road congestion so as to improve the speed, reliability and safety of travel in the M4 corridor, including parallel arterial roads
- 3. Cater for the diverse travel demands along these corridors that are best met by road infrastructure
- 4. Create opportunities for urban revitalisation, improved liveability, and public and active transport (walking and cycling) improvements along and around Parramatta Road
- 5. Enhance the productivity of commercial and freight generating land uses strategically located near transport infrastructure
- 6. Enhance movements across the Parramatta Road corridor which are currently restricted
- 7. Fit within the financial capacity of the State and Federal Governments, in partnership with the private sector
- 8. Optimise user-pays contributions to support funding in a way that is affordable and equitable
- 9. Integrate with the preceding and proposed future stages of WestConnex, without creating significant impacts on the surrounding environment or duplicating any potential issues across the construction periods
- 10. Protect natural and cultural resources and enhance the environment.

Objective 1

Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways (Sydney Airport and Port Botany), Western Sydney and places of business across the city

Sydney traffic is congested. WestConnex promises to 'cure' that congestion, but our analysis in the sections <u>Traffic Modelling Flaws</u>, Congestion along the Parramatta Road Corridor and 49 Issues with Traffic and Transport - raise doubts about the traffic modelling behind that claim. Instead, it appears that if WestConnex proceeds as proposed, congestion will actually get worse in many areas, and in particular, traffic volumes on sections of Parramatta Road will be worse than under the 'do nothing'.

If the WestConnex leads to more traffic congestion in the Inner West and routes into the CBD, it will not improve access to businesses. It may depend which businesses you are considering but thousands of small businesses in Haberfield, Newtown and St Peters have not been consulted and fear that their livelihoods will be damaged, not enhanced.

Furthermore, this objective as stated is fundamentally flawed; it recognises only Sydney's two current international gateways, and does not consider Badgery's Creek airport, which, when completed, will be a significant third international gateway to Sydney. Given the operating constraints on Kingsford Smith, Badgery's Creek may one day be the prime international gateway to Sydney. Consultation on the merits of the WestConnex project is incomplete until it considers how best to serve the many travellers and workers who will need to commute to it.

Despite the claimed importance of Kingsford Smith and Port Botany, the planned route for the WestConnex does not connect to Sydney Airport or Port Botany.

The EIS does not provide evidence that economic growth can be assisted by increased motor traffic to the CBD.

The project does not consider whether better value for the tax-payer dollar could be obtained by investing in:

- improved road and rail access to Port Botany
- improved public transport between Western Sydney and Sydney's various CBDs
- improving ring roads in Western Sydney
- supporting and developing businesses in Western Sydney

Objective 2

Relieve road congestion so as to improve the speed, reliability and safety of travel in the M4 corridor, including parallel arterial roads.

Contributions to the People's EIS analysis show that WestConnex will not solve congestion on arterial roads such as Parramatta Rd, Victoria Rd or Liverpool Rd. Many intersections will remain at the lowest Level of Service which is F - see for example, the section *Congestion along the Parramatta Road Corridor*. There is also concern about congestion building up in roads beyond the portals and thus causing traffic to slow including in the tunnel.

Claims by WestConnex that the project will improve speed and reliability depend on the reliability of its approach to traffic modelling - an approach that contemporary experts argue is flawed (see, for example, the bibliography in the section *Traffic Modelling Flaws*).

Without congestion charging, or similar, the laws of induced traffic mean that increasing road capacity only increases traffic volumes; it does not reduce congestion. Charging for the M4 without congestion charging on alternate routes will increase, not reduce, congestion on those routes.

The improvements in congestion claimed for the project arise from measures that can be separated from the rest of the project – namely the reintroduction of charges for using the road.

Objective 3

Cater for the diverse travel demands along these corridors that are best met by road infrastructure

The structure of this objective requires an assessment of which of the many travel demands along the corridor are best met by road infrastructure. This assessment is not present in the

EIS. Instead, the EIS assumes, rather than demonstrates, that a range of diverse travel needs are 'best met by road infrastructure.'

Instead, as contemporary analysis has repeatedly shown, and as is discussed in the sections *Assessment of Alternatives* and *Alternatives to WestConnex* the majority of traffic movements are fungible and highly responsive to environmental changes including: provision of alternate modes of transport, (for example public transport); provision of alternate traffic generators (for example increased local employment opportunities); and cost and other signals (for example congestion charging).

Providing such alternatives and incentives would free up road infrastructure for use by those road users that genuinely have no alternative, and it would do so at a lower cost than the M4 East.

Objective 4

Create opportunities for urban revitalisation, improved liveability, and public and active transport (walking and cycling) improvements along and around Parramatta Road

There is no doubt that some opportunities for cycling and walking will be retained or developed but the overall impact of the project will be to increase car dependency which has negative health impacts.

In its current form the project would downgrade, not improve, livability, both in the short term (see section *Comments on Noise and Vibration Assessment*) and in the long term. See, for example, the section *Brief Comments on Volume 2B, Appendix H, Air Quality Impact Statement*.

The transport requirements of large-scale urban revitalisation and densification are better met by public transport than roads.

The question Objective 4 does not address is: are there alternative ways of achieving liveability goals without the destructive impacts of this project?

Improvements to 'public and active transport' can be achieved standalone and provide no justification for the rest of the M4 expansion.

Objective 5

Enhance the productivity of commercial and freight-generating land uses strategically located near transport infrastructure

The EIS does not make clear exactly what lands this is referring to. The planned route for the WestConnex does not connect to Sydney Airport, Port Botany or the Badgery's Creek Airport. This is perhaps a reference to faster travel times that would enhance productivity and attractiveness for businesses along the WestConnex route, but only if traffic modelling predictions are accurate. The modelling has not been made available for independent review. Modelling by the same firm that provided these estimates – AECOM - has on occasion been devastatingly wrong, not least in the case of the RiverCity toll road where reliance on AECOM predictions contributed to a 1.68 billion dollar loss and commercial failure of the venture. [http://www.wsj.com/articles/aecom-unit-pays-us-201-million-to-settle-australia-toll-road-lawsuit-1442826365].

In the absence of the assumptions behind and the details of the traffic modelling and induced transport forecasts, and in absence of a transparent business case, it is not possible to evaluate the future impact of the project on land uses.

Objective 6

Enhance movements across the Parramatta Road corridor which are currently restricted

The EIS does not demonstrate how this objective will be achieved given that under the preferred option there will be more traffic on sections of Parramatta Rd than there would be under the 'do nothing' option, and that many intersections across Parramatta Rd west of Homebush will be slower - and this is according to the M4 Widening EIS's assumptions, which have not been adequately shared. See, for example, the section *Congestion along the Parramatta Road Corridor*

In the short term, traffic might flow more easily in the M4 tunnel, but it will hit congested spots not long after it emerges from the tunnel. Past experience suggests that this congestion could cause traffic to bank up in tunnels. Even if does not, by 2031, the tunnels will reach full capacity.

Objective 7

Fit within the financial capacity of the State and Federal Governments, in partnership with the private sector

The EIS does not contain the information necessary for consultation on this objective because there is no public business case. What can be said with confidence is that the public, not the private sector, will carry the risk on this project, precisely because of informed concerns about the project's viability.

The only business case that was ever produced was found by the NSW Auditor General to be inadequate; it " did not meet best practice standards" and "it was not able to form a view [that] the project is a worthwhile and prudent investment ... for the NSW government".

"Infrastructure NSW should ensure the Major Projects Assurance Framework is fully implemented" said the Auditor-General at the time, and this is still true now.[http://www.audit.nsw.gov.au/news/westconnex-assurance-to-the-government]

Revenue modelling produced by Mehreen Faruqi, the Greens MLC and former engineer, showed that even at full capacity, the WestConnex cannot physically carry enough traffic to be financially viable - and at full capacity it would be more congested than the M4 and M5 currently are [http://www.mehreenfaruqi.org.au/westconnextolls/].

At full capacity, based on similar infrastructure, the entire WestConnex would have a commercial value of perhaps five billion dollars - less than a third of its cost, assuming no cost overruns during development. [http://www.smh.com.au/nsw/what-you-need-to-know-about-westconnex-the-biggest-road-weve-ever-seen-20150313-143ujn.html]

On all the available evidence, there are alternate projects that will more reliably deliver greater improvements to public mobility, for far lower cost than billions of Federal and State funds that the WestConnex will absorb - see the section 'Alternatives to WestConnex'.

All of this should have been properly considered by the EIS.

Objective 8

Optimise user-pays contributions to support funding in a way that is affordable and equitable

Commuters who use the WestConnex M4 will be spending up to, or over, a hundred dollars a week on tolls [http://www.smh.com.au/nsw/westconnex-new-sydney-motorway-to-push-toll-to-11-per-trip-20150507-ggw9ky.html]. This will not be affordable for most of the current users of the M4, nor is it equitable when they will receive a service that is only a few minutes better than what they currently have, and inferior to what they could have if alternate projects were undertaken instead. The available analysis suggests that this will fund approximately one third of the fifteen billion dollar cost of the WestConnex, leaving at least ten billion dollars to be funded from the public purse, by tax payers who gain nothing from the WestConnex. [http://www.smh.com.au/nsw/what-you-need-to-know-about-westconnex-the-biggest-road-weve-ever-seen-20150313-143ujn.html].

Further costs fall on those subject to what is euphemistically called Compulsory Acquisition, as discussed in *Forced Acquisitions below market price*.

The EIS does not include a business case, or an adequate assessment of the indirect costs of the project, and of the opportunity cost of forgoing alternate projects. Without this information, consultation cannot legitimately be said to have been undertaken.

Objective 9

Integrate with the preceding and proposed future stages of WestConnex, without creating significant impacts on the surrounding environment or duplicating any potential issues across the construction periods

The EIS itself acknowledges there are significant impacts in relation to noise, loss of housing and destruction of heritage. Already on the M4 widening, there are issues with asbestos waste, while at Beverly Hills noise walls have been stripped away from the M5 and will stay down for about four months longer than originally predicted. See, for example, the section *Comments on Noise and Vibration Assessment*.

The EIS does not include the business case, meaning that it contains no hard evidence that these acknowledged costs can be outweighed by the future benefits.

Objective 10

Protect natural and cultural resources and enhance the environment.

At least 50 hectares of open space and potential open space and a huge amount of vegetation would be lost across the WestConnex routes. A large number of heritage buildings, including homes, would be demolished. Communities are being decimated. This objective, to protect natural and cultural resources, is not being met. See, for example, the section *Natural & cultural resources and the environment*.

The EIS does not include the business case, meaning that it contains no hard evidence that these acknowledged costs can be outweighed by the future benefits. The National Trust of Australia believes that it does not - see the section *Heritage Destruction*.

Failure to meet Objectives

Ultimately, the EIS claims to meet all its objectives through the mechanism of reducing congestion.

The predicted improvement in travel times, by 2021, in the order of 6-8 minutes, according to the EIS. This small saving - if it eventuates - is insufficient to offset the financial cost to road users, the loss of amenity to local communities, the loss of homes, the environmental damage, the destruction of heritage, the financial cost to the wider taxpayer, and the opportunity cost of not proceeding with alternate projects.

The EIS assumes unquestioningly that entrenching development towards Sydney's CBD is a desirable goal. Some planners, including the Committee of Sydney's CEO Tim Williams, argue that a key driving principle of planning for Greater Sydney should be decentralisation with an emphasis on enhancing the centres of Liverpool and Parramatta, which are nearer the geographic centre of the city [http://www.smh.com.au/nsw/committee-for-sydneys-tim-williams-slams-road-building-plans-for-city-20150428-1mv3vq.html].

The EIS deploys phrases like "complementary enhancements", without addressing who is responsible for these enhancements, or even if they will happen at all.

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Secretary's Environmental Assessment Requirements

Assessment of alternatives

The Secretary's Environmental Assessment Requirements require an "analysis of feasible alternatives".

Time precludes identifying a full list of failures to analyse alternatives.

As an example however, demand management is dismissed as an alternative because it would "require major changes in social attitudes, travel behaviour and government policy".

The first claim, that social attitudes must change, is dubious; social attitudes are already changing – road use per person is declining, and this is especially true amongst the young.

The second claim is simply wrong. Changes in travel behaviour are not a prerequisite for demand management, they are the result of demand management.

The third claim, that demand management is not an alternative because it is not currently government policy, is damning in its implication.

While changing government policy is not trivial, it is clearly possible. Changing government policy is a feasible alternative. Should proper consideration of an option by the WDA lead to policy change being recommended, it is clearly possible that the government of the day can change government policy. To acknowledge that this option was dismissed on the grounds that it would require a change of government policy is strong evidence that the option was not considered on its merits, as is required by the SEARs.

Alternatives to WestConnex

At full capacity, based on similar infrastructure, the entire WestConnex tollway <u>is estimated</u> 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:

- 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.

The EIS is required to give these options serious consideration. Instead, it has ignored them or dismissed them on the grounds of unsupported assertions, based on modelling that was not included in the EIS and has not been independently verified.

Induced Traffic

According to the SEARs (<u>http://m4eis.org/2015/09/22/the-secretarys-environmental-assessment-requirements/</u>):

"The EIS must [address] induced traffic and operational implications for public transport (particularly with respect to strategic bus corridors and bus routes) and consideration of opportunities to improve public transport patronage"

According to Appendix G, induced traffic for WestConnex is no more than 7%:

To calculate this induced travel demand, an elasticity approach was used to determine the number of new users and the number of public transport users who shift to car. The methodology used has been based on the New Zealand Transport Agency Economic Evaluation Manual (EEM) which contains a clear summary of the methods for applying an elasticity method for induced demand on a fixed matrix. **Induced travel demand increases 2031 future year traffic volumes using WestConnex between two per cent and seven per cent**, with the specific value varying across different sections of the project.

This is inconsistent with values used elsewhere in the EIS.

If induced demand is indeed less than 7%, then the project is demonstrably not viable. But if induced demand is greater than 7% then the EIS has failed to meet the SEARs requirement to properly consider induced traffic.

Regardless, the EIS does not consider, as it is required to, the relationship between "induced traffic and operational implications for public transport "

Construction Work

Forced Acquisitions below market price

The mechanisms for forced acquisitions are not adequate to demonstrably deliver market value for acquired properties.

It can be easy to forget that, beneath the euphemisms, compulsory acquisitions have a very human cost. This is one such example.

This is the story of Kim Sun. For the past few months, Kim Sun has spent almost every weekend attending auctions and open home inspections in and around North Strathfield. He is desperate and stressed, as house prices are way above what he can afford.

Kim and his wife already own a lovely home in North Strathfield, which they have renovated bit by bit since buying it in 2006. They have added insulation, solar power and a water tank. In November 2013, Kim received a letter from the WestConnex Delivery Authority (WDA), informing him his house was to be acquired to make way for the motorway. The family must vacate by March next year, but Kim says WestConnex will only buy their house at nearly \$200,000 less than market value.

"The price Roads and Maritime Services offer means we can only buy a home very substandard to the one we are living in.. " says Kim.

"It's not right. It should be market value. That's what they say they are offering, and it's not. They are not doing the right thing by people. They are stressing us out, why put on that extra pressure of offering below market value?"



WestCONnex/RMS has offered Kim Sun well under market value for his home

Kim says it's the same for everybody on their street: "We all seem to have a problem with getting the market value."

He knows others who have had to move to the Central Coast after their house was acquired. "I don't want to change schools for my son, and mum is close by. I don't want to go somewhere else." says Kim, who "We were hoping to stay here a long time, which is why we set the house up comfortably."

The past two years of negotiations and uncertainty have taken their toll. Kim is struggling with stress and is on antidepressants. It's a situation made worse by a lack of communication from the WDA. "I've tried to call WestConnex myself, but they don't return calls," says Kim, who has kept a log of these calls, having been assigned a 'job number' for each. He feels "extremely disappointed and stressed" with the way WDA has treated his family.

In July this year Kim called WestConnex wanting to know by when exactly the house had to be emptied, and also asked about accessing the free counselling service on offer. His call was never returned.

A young family, work and an ailing mother already make for a busy life, and Kim says the last thing he needed on top of it all is to be "kicked out of my home in such a short space of time now".

"I thought 'market value' was market value. I don't see why we have to negotiate so hard with them."

Final negotiations between Kim and RMS took place two days ago. Kim refused to accept the RMS offer of \$1.445 million, the same offer as the one made in August. "That offer is way below my valuer's market value of \$1.65mil," says Kim. "We will be going to the Valuer General."

Traffic and Transport

Traffic Modelling Flaws

Contributed by Anthony McCosker*

Chapter 8 <u>Traffic and transport</u> and the associated appendix (<u>Appendix G</u>) are based on traffic modelling based on a three-stage system (see Appendix G, pp. 4-2 to 4-15):

(1) traffic demand management;

(2) rebase future year traffic demand; and

(3) operational traffic modelling.

This summary examines the limitations of relying solely on traffic modelling findings, before assessing the assumptions made by WestConnex traffic modelling, examining a parallel report completed by SGS and concluding with a brief case of other traffic modelling for similar projects.

Limitations of traffic modelling

Traffic Modelling has many limitations and therefore it is dangerous to rely solely on its findings.

In attempting to model the future, traffic modelling makes a number of assumptions to produce what can sometimes seem like absolute and certain figures. In contrast, the number of assumptions, simplifications and estimations used in the modelling means that the figures produced are just one possible outcome of many.

So to rely solely on these findings can lead to misguided conclusions or outcomes, adding unnecessary risk to a project (Evans, Burke, & Dodson, 2007). This can be seen in recent Australian examples such as AECOM facing litigation over the traffic modelling of the CLEM7 tunnel in Brisbane, litigation over the traffic modelling for the Lane Cove Tunnel, and the Cross City Tunnel struggling to reach 20,000 cars per day after modelling suggested that 90,000 cars a day would use it (see http://www.smh.com.au/federal-politics/political-opinion/the-forecast-was-not-good-or-even-accurate-20120929-26rzb.html).

Indeed a reliance on traffic modelling as a justification for projects (as commonly happens in Australia) has seen '…investments in Melbourne's urban road network [result] in **more time being used by Melbourne's motorists rather than less time'** (Odgers, n.d., pp. 14-15), finding that from 2000-1 to 2006-7 overall speeds per hour on Melbourne freeways stayed generally the same, at around 78km/hour. Thus it is important to consider that 'Transport models are useful planning tools, but travel demand forecasting is not a precise science, and there are numerous outside factors which are difficult to predict or quantify' SGS (2015). Professor Michiel Bliemer and Dr Matthew Beck (both from the University of Sydney's Institute of Transport and Logistics) (Bliemer & Beck, 2015) state that models do not factor

in future trends, preferences or behaviour (even trends that are known to be happening, such as 'millennials' driving less).

Some limitations of traffic modelling

Traffic modelling overlooks future trends

Because 'a linear relationship is assumed between population, concentrations of land use and long-term transport demand' (Evans et al., 2007, p. 6), traffic modelling fails to consider future trends including (but not limited to):

Changes in fuel prices and shortage (or perceived shortage) of fuel ('Most technical assessments of transport systems are naïve to the issue of petroleum risk' (Evans et al., 2007)):

- Changes in government policy (including transport and planning policy)
- The effect that emerging transport trends including decentralised and disruptive transport provision (such as Uber), car share (eg GoGet) and autonomous vehicles will have on car use
- Changes in generational travel preferences (such as 'Millennials' preferring technological connections over private vehicle connections; 'Boomers' driving less as this cohort ages)
- Changes in sociocultural trends (such as preference for particular destination types or avoidance of areas due to issues such as crime)

Traffic modelling inadequately addresses effects of 'induced traffic'

Traffic models also struggle to accurately address induced traffic, which 'weakens their capacity to inform policy makers about the broader economic value and environmental impact of major transport projects' (Evans et al., 2007, p. 6). Induced traffic can include:

- Mode change (such as switching from public transport to car use due to reduced travel time upon immediate opening of the road, known as the Downs-Thompson Paradox—see for example http://io9.com/how-the-downs-thomson-paradox-will-ruin-your-commute-1152573927)
- New trip
- Change of route
- Shift of times at which people travel
- Changes in land use due to changes in accessibility to transport modes
- Reduced public transport services further increasing 'automobility' of a city

As travel times are initially shortened by increased road capacity, people have more time in their travel budget (generally around one hour—see the Marchetti Constant for more on this) so may choose to make longer trips.

'The biggest force still driving the Auto City to build large freeways and accommodate the automobile rather than providing other options is the standard "black box" transportation/land use model...These are based on how a new or widened road will save

time, reduce fuel, and lower emissions and road accidents...these benefits are illusory due primarily to "induced traffic." (Newman & Kenworthy, 1999)

Traffic modelling oversimplifies trip types

Travel is 'grossly simplified' with minimal trip types considered (Evans et al., 2007, p. 4), for instance 'trip-chaining' (combining a number of destinations in one journey, such as dropping children at school before going to work, then picking the child up and going shopping) is ignored in modelling due to its complexity

Traffic modelling oversimplifies or limits considerations that lead people to choose trip or mode types

Residential density, land use mix and non-motorised accessibility all influence travel behaviour but are rarely accounted for (list adapted from Evans et al., 2007):

'Australian metropolitan strategies...generally seek to reduce land use separation and distance, to promote walking, cycling, and public transport, and to reduce the use of the private motor vehicles. The use of models is unable to assess land use/transport interactions in order to determine and prioritise transport project investments within these strategies is therefore questionable.

- Trip zones considered are generally large, limiting consideration of walking or cycling
- Modal assignment is limited and overlooks many qualitative considerations of public transport services (such as youth preference to engage technology while travelling)
- Limited consideration of non-motorised trips and other travel options (such as carpooling)
- There is a focus on interchange and waiting times over quality of nodes or destinations (which affects the modes of transport people will take)

Traffic modelling focusses predominantly on travel times at the expense of other considerations

Models give limited consideration to effects such as pollution, noise or carbon emissions, while route/traffic assignment (Evans et al., 2007) assigns traffic flows to an equilibrium where no traveller can switch routes and reduce their costs which is not how the 'real world' works; capacities are generally over-simplified (for example heavy vehicle movements and highway geometry are often overlooked).

Traffic modelling is generally 'expert'-led and 'technocentric', with little community input or justification of assumptions and inputs

Due to their technical nature, 'knowledge of how the models work and their capacities, and in turn their biases and inadequacies, is often restricted to a small number of professional experts' (Evans et al., 2007, p. 2). This can give traffic modelling reports the impression of 'objectivity' and 'universality', whereas the policy context and the political surroundings certainly play a role in the assumptions and inputs into such models, and when this is added to 'the inherent inadequacies of transport modelling, this technical

complexity may be seen to create a form of institutional risk for transport planning assessment' (Evans et al., 2007, p. 2).

Traffic modelling generally favours one mode—the car (Evans et al., 2007)

M4 East traffic modelling—what are the assumptions?

'Do nothing' baseline is assumed

A 'Do nothing' approach is used as the baseline for any time-saving benefits of the M4 East and wider WestConnex project, however a more viable comparison might have been an incremental improvement of multiple modes of transport infrastructure (including for cars, buses, trains, light rail, walking and cycling) using the funding amounts for the M4 East and wider WestConnex project (\$15.4 billion). This could present an opportunity for increased viability of the traffic modelling, as previous suggestions by independent experts (see <u>http://www.reportageonline.com/2014/06/westconnex-motorway-not-actually-going-to-helpsydneys-traffic-congestion/</u>) for sustainable public transport as an alternative have been 'overruled by WestConnex', and the speed of a city's roads are directly related to the speed of its public transport (known as the 'Mogridge Conjecture').

An auto-dependent study area is assumed

The study area—defined as the Local Government Areas in the project—is assumed in the report to be auto-dependent and reliant predominantly on cars for transport. However Newman and Kenworthy (2015) outline the fact that a suitable aspirational target for total trips taken by car might be 75% in an 'automobile fabric' area. Table 5.7 (Appendix G, p. 5-8) however shows that the average weekday travel for all local government areas within the project area is 57%, far lower than both the Greater Metropolitan Area of Sydney (67%) and the threshold for Newman and Kenworthy's 'automobile fabric'. It is a figure that is closer to a 'transit fabric' of 50% overall car use (see also Figure 5.4 from Appendix G, below). Along with the fact that 90% of western Sydney commuters to the CBD travel every day by public transport (SGS, 2015), this brings into question the modelling assumptions that cars are the preferred form of transport and that they will remain so to the modelling horizon (2031).



Figure 5.4 Travel mode share comparison between study area average and Sydney GMA (Source: NSW Bureau of Transport Statistics, Household Travel Survey Report: Sydney 2012/13, November 2014 release)

(Appendix G (p. 5-8) itself states: 'Findings from the HTS [household travel surveys] shows that on average, 57 per cent of trips on a typical weekday in the project area are car based compared to 69 per cent in the Sydney GMA. The lower proportion of residents who are dependent on car travel can be partly attributed to good public transport options in the project area and also to the proximity of activities with a high proportion of travel utilising the walk mode share in comparison to LGAs with a more dispersed land use.')

Current trends such as 'peak car' are ignored; outdated status quo is assumed

As outlined above, traffic models struggle to deal with future trends and patterns. However even current trends such as peak car (Newman & Kenworthy, 2015), which began in 2004 and is the decrease in the growth in overall car use, are ignored in the modelling. Ignoring trends towards peak car and shifts away from automobile dependence, as well as societal changes (such as an ageing population in Sydney and reduced reliance on cars by younger generations) and potential future technological developments (such as car share systems and autonomous vehicles), adds risk to the modelling assumptions and significantly reduces their reliability.

A certain level (2-7%) of induced traffic is assumed

'At the extremes of the project a slight increase in volumes is shown on Parramatta Road, Concord Road and City West Link. This is indicative of the induced traffic demand attracted to the corridor as a result of the project...To the west, Concord Road and Parramatta Road continue to show an increase in expected daily volumes reflecting the induced demand resulting from the attraction to drivers of the WestConnex scheme.' (Appendix G, p. 8-2) 'Induced travel demand increases 2031 future year traffic volumes using WestConnex between two per cent and seven per cent, with the specific value varying across different sections of the project.' (Appendix G, p. 4-6)

Yet the uncertainty regarding the actual amount of induced traffic and its effects on project aims (such as 'Relieve road congestion' and 'Create opportunities for urban revitalisation...along Parramatta Road'), its impact on the local study area and its implications in the context of Greater Metropolitan Sydney area are not addressed.

The effect of induced traffic demand on public transport usage is not acknowledged - despite this being a requirement of the SEARs

The Secretary's Environmental Assessment Requirements require that the EIS address:

"induced traffic and operational implications for public transport (particularly with respect to strategic bus corridors and bus routes) and consideration of opportunities to improve public transport patronage;".

Despite claims that improved public transport (such as bus) travel times will improve patronage (Chapter 8, p. 32), the effects of induced traffic (such as switches away from public transport to cars) on alternative modes are ignored. Concerns regarding increasing the demand for automobile use when the majority of developed cities around the world and most strategic directions and plans for Sydney point towards reducing automobile demand are also overlooked.

SGS traffic modelling report is ignored

A traffic modelling report conducted by SGS Economics and Planning (SGS, 2015) relating to the entire WestConnex project produces numerous counterpoints to the modelling conducted for the M4 East project and given in the EIS. This report is ignored throughout the M4 East report, despite the opportunity to strengthen both models by comparing and contrasting outcomes, and identifying differences in assumptions that led to any disparities (some select findings from the report are outlined below).

Brief findings from the SGS traffic modelling report

As a counterpoint to the modelling used for the EIS, this section will briefly outline the main points made by the SGS report that was conducted into the wider WestConnex project (available at <u>http://www.sydney.org.au/sgs-economics-and-planning-westconnex-transport-modelling-summary-report/</u>).

At best, the disparity in the two projections proves the difficulty in accurately predicting future transport movements across a complex network in a city such as Sydney and confirms the above points warning against sole reliance on traffic modelling for project justification. At worst they present a bleak view of the effectiveness the WestConnex project will have, and bring the validity of the modelling used and thus the justification for the entire project into question. Briefly, the SGS report found that:

'Sydney traffic congestion will worsen with or without WestConnex, with the project only making a minor difference to Sydney's overall traffic in the future...The net effect [of the entire WestConnex project] is similar to the status quo.' (SGS, 2015, p. 1) (see below)



A map showing which areas stand to win (green circles) and lose (red) according to the City of Sydney.

(see <u>http://www.smh.com.au/nsw/parramatta-road-traffic-will-increase-under-westconnex-study-shows-20150427-1mueqm.html</u>)

'The [SGS] modelling confirms that WestConnex will not improve access to the Sydney CBD...the CBD is already congested and has little available parking.' (SGS, 2015, p. 4) 'Traffic flows on Parramatta Road will increase by up to 22 per cent (between Homebush Bay Drive and Concord Road) as vehicles avoid paying the toll on the M4 and M4 eastern extension. This finding is consistent with the WestConnex Delivery Authority's own assessment presented in the M4 Widening Environmental Impact Statement and with the traffic flow impacts observed when the M4 toll was removed in 2010. As a result of WestConnex, Parramatta Road will take more traffic in the future, not less.' (SGS, 2015, p. 15)

'Traffic growth on Parramatta Road will clearly jeopardise the government's planned urban renewal and population growth along this corridor.' (SGS, 2015, p. 4)

Issues with modelling of other comparable projects

In recent years, traffic modelling of other similar projects has been called into question on a number of occasions, and serves as a warning against relying solely on traffic modelling as justification for road projects into the future. For instance:

The Cross City Tunnel (Sydney) became insolvent in 2006 as a result of significant traffic modelling discrepancies—90,000 cars/day were predicted through the model, though just over 20,000 cars/day actually used the tunnel (see http://www.smh.com.au/federal-politics/political-opinion/the-forecast-was-not-good-or-even-accurate-20120929-26rzb.html)

- The two companies responsible for the Lane Cove Tunnel (Sydney) traffic modelling were subject to litigation after the tunnel became bankrupt directly following its 2009 completion due to actual use less than half that projected in the modelling (see http://www.smh.com.au/nsw/trial-to-start-on-144-million-lane-cove-tunnel-debacle-20140809-102c6d.html)
- AECOM (who conducted the M4-East traffic modelling) faced litigation over the modelling of the Clem7 tolled tunnel in Brisbane. Central to the claim was the fact that AECOM provided traffic models showing 100,000+ cars/day usage by 2011, despite having 18 months earlier estimated usage would be 57,000 cars/day. Actual traffic usage numbers in 2011 were under 24,000 cars/day (see http://www.smh.com.au/business/backers-sue-on-tollroad-forecast-use-20110414-1dfxd.html).

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Congestion along the Parramatta Rd corridor

This section is contributed by the public transport advocacy group <u>*Ecotransit Sydney, and published here with their permission.*</u>

Nearly all other claims in the EIS depend for their validity of the traffic analysis. For this reason, the analysis of the traffic section is crucial.

Twenty years of failed promises

Twenty years ago the Greiner and Fahey Governments claimed construction of the M4 missing link and the M5 would significantly cut travel times and reduce congestion. Opponents said the motorways would only generate more traffic, eroding any short term improvements while pulling people off public transport and starving the rail and other public transport networks of funds for further development.

Today, Sydney's road traffic is worse than ever and in some inner urban areas where the motorways converge, motorists are beginning to experience '**super-jams'** — delays where people can get caught in traffic for hours.

M4 Widening

The EISs for the M4 widening and M4 East don't hide the fact that a similar future is waiting for everyone if these projects go ahead. A close look at the numbers shows that **congestion is anticipated to get worse in many areas and traffic volumes on some sections of Parramatta Road are anticipated to be higher than if WestConnex was not built.**

The spin used by the WestConnex Delivery Authority to justify the projects is that while the motorways won't generate any significant improvements, the next motorway that connects the M4 and M5, will. The predictions are that travel times will improve on most routes from around 6 to 8 minutes in the morning peak by 2021 to an earth shattering 10 to 12 by 2031 if the full \$15.4 billion WestConnex scheme is built.

With about eight different motorway projects under discussion in Sydney and an embarrassing recent history of legal proceedings over traffic predictions for tollways, coupled with little in the way of public transport for western Sydney, the community can be easily forgiven for feeling this situation is getting ridiculous and out of control.

Let's start with the M4 Widening. The EIS states that by 2021 with minimal network changes at a point near Duck Creek, Parramatta Road will be carrying 43,990 vehicles on average per day, per year. With the M4 Widening it will carry 59,370 — that's 35 per cent more — because with a toll in place, some traffic will divert to using non-tolled roads. Victoria Road to the north is estimated to carry a daily average of 70,250 per day, per year with the M4 Widening instead of 60,440 — that's 16 per cent more — also because of toll diversion. By 2031 with the full WestConnex scheme in place, volumes will rise to 62,490 for Parramatta Road and 75,770 for Victoria Road. If WestConnex isn't built, the 2031 estimates are 52,030 for Parramatta Road and 68,250 for Victoria Road.

M4 East

Moving on to the M4 East, at points along Parramatta, Liverpool, Punchbowl and Canterbury roads, the story is much the same. Traffic volumes on local roads are higher with the M4 East motorway and full WestConnex motorway scheme in place than they would be without them. By 2021, average weekday traffic on Parramatta Road would be just over 29,000 in the 'do minimum' case but 42,000 in the 'do something' case. For Liverpool, Punchbowl and

Canterbury Roads, volumes stay pretty much where they are with no real improvements. For 2031, the estimated traffic volumes, are all higher or much the same , with the full WestConnex scheme in place with the exception of Liverpool Road which would see just 2,000 less vehicles on average on a weekday.

These results don't sit well with the claims from politicians that more motorway building will take traffic off local roads. One of the reasons why traffic volumes will remain high on many sections of Parramatta Road and other local arterial roads is because the motorway will unleash another round of induced traffic growth and significant sections of the network are needed to act as feeder routes to the M4. When taken as a whole — traffic on the motorways and local arterial roads — the volumes are always higher with the motorways in place. Results from the intersection analyses in the EISs aren't much better. Using a traffic engineering standard that measures congestion on a scale from A to F, where F represents a breakdown in the flow of traffic so that queuing and extensive delays result, of the 29 intersections covered in the EIS for the M4 Widening (Church Street, Granville to Shaftesbury Road, Burwood), 15 will be operating at Level of Service F or experience a drop in service levels during the morning peak, 7 will be much the same, while Level of Service is estimated to improve on only 7. With the full WestConnex in place 16 intersections will be at Level of Service F or worse, 4 will be the same and 9 are anticipated to improve. The results are similar for the evening peak period.

Closer to the city, an inspection of the numbers in the EIS for the M4 East for 2021 tells a similar story. Of the 39 intersections analysed (Homebush Bay Drive to Crystal Street), 14 are anticipated to be operating at Level of Service F or experience worse congestion, 11 will be much the same, while 14 are estimated to improve during the morning peak period. Results for the evening peak are similar. With the full WestConnex scheme in place by 2031, 16 are anticipated to be operating at Level of Service F or experience worse congestion, 10 will be much the same and 15 are estimated to improve. Results are similar for the evening peak.

Twenty five Parramatta Road intersections would continue with extremely poor level of service

Frighteningly, of the total 68 intersections investigated along the stretch of Parramatta Road, **25 are anticipated to be operating at Level of Service F**. Add the 40,000 additional apartments that Urban Growth wants to build in the Parramatta Road corridor that have not been included in the traffic model and this number will increase so that conditions become even worse than the forlorn outcomes reported in the EISs. Keep in mind that historically, estimates produced in support of tollways have been overly optimistic by orders of magnitude.

Conclusion

WestConnex would be the biggest underground motorway in the world and per kilometre, the most expensive. Global experience since the 1950s has conclusively demonstrated that urban motorways are counterproductive."

An analysis of WestConnex's traffic data (p.4) points to figures in the EIS for the M4 widening between Parramatta and Homebush which show that Parramatta Rd will carry 35%

more traffic by 2021. Even by 2031, it will be 16% more. These increases will be mostly due to diversion from the M4 which will be tolled again.

Using the traffic data in the WestConnex EIS, we have analysed the impact of the project on local roads and concluded that traffic volumes on local roads are higher with the M4 East motorway and full WestConnex motorway scheme in place than they would be without them

Traffic volumes will remain high because the motorway will unleash another round of induced traffic growth and significant sections of the network are needed to act as feeder routes for the M4 tollway.

An EIS is supposed to honestly and fully discuss the costs and economic benefits as well as the social and environmental effects of a project as well as alternatives to it. This EIS does not.

We recommend outright rejection.

49 issues with Traffic and Transport assessment

This submission is by transport planner Chris Standen, who is currently completing a doctorate in transport economics at the University of Sydney

1.Summary

1) I strongly object to the M4 East project, and to the broader WestConnex scheme.

2) The EIS has failed to model the impacts of implementing the proposed project (M4 East) relative to not implementing the proposed project (the 'future do minimum' scenario). The 'future do something' scenarios, on which the traffic, air quality, health and greenhouse modelling is based, include the M4 East project plus another uncommitted project to convert kerbside general traffic lanes on Parramatta Road to bus priority. With these additional bus lanes, the capacity of Parramatta Road would be significantly reduced and traffic volumes would fall accordingly, with drivers opting to use the M4 East tunnel instead. As such, the traffic volumes for the M4 East tunnel have been dramatically overestimated, and the traffic volumes for Parramatta Road have been dramatically underestimated in the 'future do something' scenarios.

The impacts of the project as proposed by the proponent (and as defined in Section 5 of the EIS), that is, the M4 East Tunnel with no new priority bus lanes on Parramatta Road, has not been presented in the EIS, as required by the SEARs.

(3) The stated objectives for the project were contrived to fit the project after it had already been announced. In a democratic strategic planning process, objectives are set first based on the needs and desires of the community, and then alternative projects/policies are appraised against their ability to meet those objectives.

(4) The EIS has not modelled alternative policy scenarios that could meet the transport/accessibility needs of NSW's growing population, e.g.a) Greater investment in public transport;

b) Road pricing reform;

c) Land use planning that places more homes closer to employment and services.

(5) It is no secret that the real purpose of the WestConnex scheme is to increase the road freight accessibility of Port Botany and Sydney Airport, and that private passenger vehicles have been included as a means of paying for it (through tolls). However, there are various policy alternatives for dealing with the growing freight task that do not appear to have been considered, e.g.:

a) Increase the capacity and reliability of rail freight

b) Increase rail freight subsidies to match/surpass those of road freight.

c) Divert container operations to other ports outside the city centre. Very few cities concentrate container operations in the city centre where road access is costly and has significant impacts on highly populated areas.

(6) The M4 East will be used by less than 1% of the NSW population each day. The costs will be borne by the whole population. It can hardly be argued that it is providing for the "greater good".

(7) The Traffic and Transport Assessment does not stand up to scrutiny. There is not enough information about the methodology, input data or assumptions for the forecasts to be independently verified.

(8) There is no sensitivity analysis in the Traffic and Transport Assessment. The effects of varying key assumptions (e.g., willingness to pay the M4 East toll) have not been disclosed.

(9) The Traffic and Transport Assessment has not modelled the travel time and accessibility impacts for non-motorised modes (walk and bicycle).

(10) The issue of induced demand has not been fully addressed in the Traffic and Transport Assessment.

(11) Given the seriously flawed Traffic and Transport Assessment, there can be no confidence in the accuracy of the other impact analyses in the EIS that are dependent on the traffic forecasts, in particular:

- a) Air quality,
- b) Noise and vibration,
- c) Human health,
- d) Greenhouse gas emissions.

(12) The role of motorways in a multimodal urban transport network is to allow traffic to circulate around the edge of a city connecting low density suburbs, where the traffic does not directly impact highly populated areas. For radial transport into and out of employment/activity centres, mass transit (e.g., rail) is more quick/efficient, requires less space, and has fewer impacts on highly populated inner-urban areas.

(13) The EIS does not consider the cumulative costs of adding more urban motorways to those previously built through the heart of Sydney since the 1950s. Although the economic, social and environmental costs of each individual motorway (as reported in an EIS) may be

considered by some stakeholders to be acceptable, the cumulative costs are considerable: (a) Following decades of road expansion and consequential sprawl, Sydney now spends about 13% of its GDP on transport, while the average European or Asian city spends only between 5% and 8%.1 (1)

(b) Serious human health impacts due to petrochemical vehicle emissions/smog, including: i) Lung cancer,

- i) Lung cance
- ii) Asthma,
- iii) Heart disease,

iv) Impaired lung development in children living near motorways/exhaust stacks.

(c) Waterways contaminated with road runoff (heavy metals and carcinogens in brake and clutch dust, exhaust particulates etc.).

(d) High traffic crash costs (of deaths/traumatic injuries and material damage).

(e) Urban sprawl and increasing commuting distances.

(f) Social isolation for non-drivers living in car-dependent suburbs.

(g) Noise pollution from traffic and its impacts on sleep.

- (h) Impacts on visual amenity (pollution stacks, concrete interchanges, concrete flyovers).
- (i) Extreme summer temperatures (urban heat island effect).
- (j) Community destruction and severance.

(k) Destruction of heritage.

(l) Less incidental physical activity from walking and cycling (including to/from public transport), resulting in higher rates of obesity, diabetes, cancer and heart disease.

(m) Increased chauffeuring burdens for parents and carers.n)

(n) Less independence for children.

(o) High per-capita greenhouse gas emissions.



Graphic designed by Chris Standen

2 Issues with the Traffic and Transport Assessment (Appendix G)

2.1 General Comments

(14) The Traffic and Transport Assessment does not stand up to scrutiny. There is not enough information about the methodology, input data or assumptions for the forecasts to be independently verified.

(15) There is no sensitivity analysis in the Traffic and Transport Assessment. The effects of varying key assumptions (e.g., willingness to pay the M4 East toll) have not been disclosed.

**(16) Travel time and accessibility impacts for non-motorised modes (walk and bicycle) have not been modelled.

(17) Impacts of disruptive technology on future driving demand have not been not considered (e.g.automated vehicles).

(18) Inter-generational changes in vehicle ownership, driver licensing and transport preferences have not been considered.

(19) Changes in aggregate transport measures have not been provided for the various scenarios.For example:

- (a) Overall increase in VKT (Vehicle Kilometres Traveeled.)
- (b) Change in average trip distance.

2.2 Comments on Specific Sections

2.2.1

(20) One of the stated purposes of the report is to "complete a holistic traffic and transport assessment including crash analysis, travel speeds and travel time analysis and opportunities to enhance public and active transport networks within the project area". However, the report does not provide any travel time forecasts for active transport.

(21) Another purpose is to "Recommend a suite of measures to mitigate and manage traffic and transport impacts of the project for construction and operational scenarios". The general consensus among transport experts is that the most effective way to manage traffic demand is through demand management, e.g., road pricing reform. However, the report does not recommend any demand measurement measures.

2.2.2 Section 3 – Strategic Context

(22) The stated justification for the project is based on the discredited 'predict and provide' approach to transport planning, whereby it is assumed that transport demand will continue to grow, and that capacity must be increased to accommodate it. In practice, transport demand in cities is limited by capacity: as capacity increases, so does demand (induced demand). It is geometrically impossible to provide enough roadway capacity to accommodate all the latent demand for driving (i.e., where everyone can live and work where they want, and make all the driving trips they want, when they want, to wherever they want in free-flow traffic) in a city of Sydney's population.

(23) Furthermore, the most efficient way to accommodate the transport and accessibility needs of a growing population is through mass transit and better land use-transport integration. Urban motorways are a very inefficient way of moving people around. A single traffic lane can transport a maximum of only 2000 people per hour (in ideal conditions); a single railway line can transport 20,000 people per hour.

(24) The statement "It is acknowledged that any investment in motorway infrastructure has to be aligned with supporting public and active transport initiatives to achieve an increase in capacity, while aiming to reduce the reliance and demand of private vehicles on the future road network" is contradictory: increasing motorway capacity will only serve to increase private vehicle demand.

2.2.3 Section 4:Assessment Methodology

(25) There is not enough information about the modelling methodology for it to be replicated and the outputs independently verified.

(26) The transport model (WRTM) has not been made available for independent verification.

(27) The model input data and assumptions have not been made available for independent verification.

What toll prices have been assumed?

(28) The model coverage area is too small to capture all the transport impacts of the project. The project will affect transport demand and behaviour across the whole metropolitan area.

(29) More detail on the Value of Travel Time Saving (VTTS)/Willingness to Pay (WTP) model is needed.

(a) The form and parameters of the model have not been given.

(b) If it was based on stated preference surveys, then how has the issue of hypothetical bias been addressed?

(c) Has the model been validated? Previous toll choice models in Australia have overestimated WTP for toll roads.

(d) Does it include the negative utility of the tunnel environment (monotony, no natural light, poor air quality)?

(30) The weekend period has not been modelled, despite current weekend traffic volumes being higher than weekday traffic volumes on many corridors.

(31) Insufficient information about the travel zone structure in the WRTM:

(a) What are the travel zones based on? How big are they?

(b) How are intra-zonal trips modelled?

(c) How are trips to/from external zones modelled?

(32) Induced demand has not been fully addressed:

a) The model ignores the impact of the project on the long-term transport decisions of individuals and firms, including:

(1) Residential location choice – the project will encourage more people to move further from work (sprawl), thereby increasing average travel distances/demand.

(2) Work location choice – the project will encourage more people to work further from home, thereby increasing average travel distances/demand.

(3) Car ownership choice – the project will encourage more car ownership.

(4) Firm location choice – the project will encourage firms to locate in locations further away from their labour supply/customers/suppliers than they otherwise would, thereby increasing travel distances/demand.

(b) To my knowledge, there has been no long-term evaluation/verification of the methodology used to forecast induced demand (New Zealand Transport Agency Economic Evaluation Manual (EEM)). Induced demand by its nature materialises over several years, as people gradually move home/work location etc. Without a long-term evaluation/verification of the methodology, there can be no confidence in the induced demand forecast produced.

(33) Insufficient detail on origin-destination demand matrix generation:

(a) What are the form and parameters of the generalised cost function?

(b) How were shortest paths calculated?

(34) Insufficient detail on trip generation:

(a) What are the form and parameters of the trip production function, and how was it estimated?

(b) What are the form and parameters of the trip attraction function, and how was it estimated?

(c) Were trips were balanced towards attractions, or towards productions?

(35) Insufficient detail on trip distribution/modal split:

(a) What are the form and parameters of the gravity model used?

- (b) What are the form and parameters of the deterrence function used?
- (c) How has modal split been estimated?

36 Insufficient detail on road traffic assignment:

(a) Is assignment stochastic or deterministic?

(b) What link loading/flow function was used?

(c) Were intersection delays included?

(37) Insufficient detail on public transport assignment:

(a) How were access and egress points determined?

(b) How were route strategies determined?

(38) Non-motorised trips have not been included in the WRTM or LinSig modelling.
(39) Impacts on accessibility have not been modelled. Most transport is not an end in itself – it is a means to access work, education, services etc. How does the project affect population accessibility?

(40) Equity and equality impacts not described.

(a) How many people are better off with the project?

(b) How many people are worse off with the project?

(c) Do benefits/impacts accrue to any population groups more than others, e.g., people with a disability or on low incomes?

(41) Downs-Thomson Paradox not considered.

The project will attract passengers away from public transport to road. As such, public transport patronage will be lower than it would be without the project. This could result in public transport service levels being cut, which will encourage further mode shift from public transport to road.

(42) No sensitivity analysis.

Given the numerous assumptions and approximations in the model, there needs to be some sensitivity analysis, e.g.: How will traffic volumes be affected if (when) the WTP for the toll turns out to be higher than the point estimate used?

2.2.4 Section 7 Assessment of construction impacts

(43) Impacts on walking/bicycle demand and travel times have not been modelled.(44) Does the LinSig intersection modelling take into account the impact that changes in intersection LOS will have on travel demand?

2.2.5 Section 8 Future year traffic volumes and patterns

(45) Impacts on walking/bicycle demand and travel times have not been modelled.(46) Does the LinSig intersection modelling take into account the impact that changes in intersection LOS will have on travel demand?

2.2.6 Section 8 Future conditions without the project

(47) Impacts on walking and bicycle demand and travel times have not been modelled.(48) Does the LinSig intersection modelling take into account the impact that changes in intersection LOS will have on travel demand?

2.2.7 Section 9 Assessment of operational impacts

(49) Impacts on walking and bicycle demand and travel times have not been provided.

3 References

1. Newman P, Kenworthy J. Costs of automobile dependence: global survey of cities. Transp. Res. Rec. J. Transp. Res. Board 1999;1670(1):17-26. doi:10.3141/1670-04.

(Chris is currently researching for a PhD in transport economics at the University of Sydney. He holds a BSc in Physics from Brunel University, where his honours research was on subatomic particle measurement at the Stanford Linear Accelerator, and a Master of Environmental Management from UNSW. He has previously worked as a transport planner in local government, as a policy advisor in the NSW Parliament, and as a systems architect designing telecommunications networks for operators in Europe and Asia.)

Air Quality

Brief Comments on Volume 2B, Appendix H, Air Quality Impact Statement

Contributed by Kerry Barlow

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, this Statement 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. An independent review of the WRTM is required, given that this Air Quality Impact Statement is so reliant on it.
- 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 for Parramatta Road
- 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)
- other cleaner forms of transport have not been compared, ie no cost-benefit analysis has been included
- the 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 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 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 of PM2.5 show a range from 26.5ug/m3 to 24.3ug/m3 (six of them above the advisory standard of 25ug/m3) with the "do minimum" and "do something" scenarios still showing most sites of 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 Statement

- relies on the traffic modelling for its claim that concentrations of pollutants at community receptors will, generally, be improved this traffic modelling did not include a scenario where traffic on Parramatta Road is greater than model estimates
- 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):
 - 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
- BOM 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, especially in relation to the modelling of the temperature variation of the exhaust plume

Flaws in the 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
- the 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:
 - 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)
 - 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.

Noise and Vibration

Comments on Noise and Vibration Assessment

Contributed by an environmental scientist who chooses to remain anonymous.

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 continued at 10-3 -10-47 and also in Volume 2C, Appendix I.

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. Vibration from construction including tunnelling 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 is 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.

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 <u>Interim Construction Noise</u> <u>Guideline</u> (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.



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 appear to be in error and need to be corrected.

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.

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.

Human Health

Comments on Volume 2D, Appendix J - Human Health Risk Assessment

Contributed by an anonymous author

Executive Summary:

This Human Health Risk Assessment is not acceptable as a reliable study of the health risks of the WestConnex project for the following reasons:

- the 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 should be passed
- other cleaner forms of transport are not canvassed for this corridor
- no mention is made about the possibility of phasing out diesel fuel cars, as is happening in France and proposed in other parts of Europe

The Human Health Risk Assessment makes 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

Key air quality issues summarised and accepted by the Health Risk Assessment as follows:

- 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
 - o 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 several key aspects of the Air Quality Impact Assessment, namely:

- the tunnel design claim that there will be negligible impact at sites of portals and ventilation stacks
- on 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
- It also relies on the 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
- 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 will 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 (5) 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, will possibly include higher standards for PM10 than are being used in this EIS. The outcome of this will be many more "hot spots" created than currently acknowledged in the Air Quality Impact Assessment

- it should also 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 this type of 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
- it 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 needed to also note 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
- it 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.
- another scenario that should have been included when considering risk factors is 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.
- 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*" (ib id).
- 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 data that is five (5) years old for the key health indicators is problematic, given background sources of key pollutants (NO2 and PM2.5 and PM10) have increased in that five (5) 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
- suggests mitigating works for noise-related health issues, but none for the increased exposure to PM2.5 & NO2 risks to those schools, childcare and aged-care facilities
- the current 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 (ie includes risky alcohol drinking, smoking, consumption of fruit & vegetables, being overweight or obese, and adequate physical activity) which 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 (eg 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, but should be noted by them
- 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 the findings of it. Our independent review of the noise and vibration section of the EIS 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 which does not allow any further input from the community.
- this health risk assessment should have included a risk assessment for asbestos and a management plan for mitigating such risks, given there have already been two serious 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 find and analyse any
 related health studies to understand their methodology and conclusions and thus ascertain the
 implications for the WestConnex project. Indeed there have been two such studies conducted on
 local tunnels, 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 to be able to draw

any strong conclusions from. 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 (eg 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 affects of the M5 East tunnel (NSW Health, 2012), it was stated 0 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 those 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 will no doubt increase total traffic pollution over time.

Flawed assumptions

There are a number of flaws in the assumptions on which the health findings are based:

- They do 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 NSW government's draft metropolitan strategy that divides Sydney into nine key areas, known as

"city shapers" are to include growth corridors along Parramatta Road. 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.

Social and Economic

Objection from a Haberfield Resident

This document summarises one resident's objections to the recently published EIS for the M4East proposal, but they are concerns that are widely held.

It concentrates on aspects of the health and social impact, including social & emotional wellbeing of residents that would result if the M4 East proposal was allowed to go ahead. This along with linked projects, the M5 East duplication & the M4-5 link projects are the bulk of the 33 km long road & tunnel project, collectively known as WestConnex.

Individually and collectively these projects have already impacted on the social and economic life of residents and workers in the inner west, since the current proposal was first mooted in late 2013. In particular, the M4 East project impacts heavily on the residents and businesses around Homebush/North Strathfield & Concord and its Western end and Haberfield/Ashfield & Croydon at its eastern end.

In addition the proposals for this project occur while there are other significant proposals that are affecting residents in the inner west.

- The first are the NSW Urban growth proposals for the Parramatta Road Corridor, with five of the eight proposed growth precincts within the inner west, coupled with the Bays precinct and the Central to Eveleigh project. Together these projects will have substantial influences on the character, built environment and population make-up of the inner west.
- The second are proposals for forced amalgamations of local councils. The majority of residents do not wish to be represented at a local level by large distant bureaucracies. There is a real sense that local decision-making and democracy is being removed from residents by this enforced process. There is also great frustration that decisions affecting the lives of people are being made by a government that has shown no interest in the impacts these decisions have on the lives of local people. There has been no attempt by the Premier of relevant Government ministers to actually visit the sites of where residents are being forced from their homes, to explain why it is necessary and how the impact on people and their lives will be mitigated.

I object to the proposal partly because it has not been presented in a way that enables the public to determine if the proposal is an appropriate and effective solution for Sydney's significant transport problems.

I object because the whole process has been corrupted by the agencies who are its proponents. This is evidenced by, the awarding of contracts for the project, notice of compulsory acquisition of family homes and the planned destruction of local communities, all before the matter has been considered and approved.

These factors combined have left local residents feeling sad and angry about the process to date and left many feeling sceptical that there is any real concern about their rights and welfare. In addition no comprehensive business case has been presented and the arguments in the 5000 page EIS are simplistic and lack depth. Critic such as the NSW Auditor-General and

MLC Ms Mehreen Faruqi have seen the business case and have made strong arguments against what they consider to be a flawed process and proposal. There has been no serious rebuttal from the proponents, which suggests that the critique is accurate and that the whole process is flawed. If this was private money that was taking the risk, this would be disturbing but only for shareholders. In this case it is public money that is being proposed for investment. The scheme proponents are keeping the public in the dark about their financing methods. The opportunity costs of this project and the alternatives that could be developed by equivalent investment have not been tested in public.

The most disturbing outcome of this proposal, coupled with the other assaults on community rights and the ability of the public to engage in decision making about their city, is further distrust about governance and probity in NSW.

The whole process of the development of this proposal smacks of back room deals, hidden behind the cloak of "commercial-in- confidence concerns", so that the public who pays for this are not truly involved in the decision. This is a fundamental core of my objection to what appears to be a flawed proposal.

Initial Impacts

I object to the poorly handled process of how this process has been announced, and the poorly run community "consultation".

The process appeared more concerned with the marketing and media spin, rather than the provision of information.

The initial announcements of this project were made in the last quarter of 2013. The WestConnex Delivery Authority (WDA) conducted a series of information sessions near where the project would impact. Many local residents and businesses received letters that their homes/ buildings would probably be resumed for the project.

The consultation sessions were characterised by what many residents in Homebush, Concord, Ashfield and Haberfield characterised as contradictory and misleading information. There was considerable distress amongst older residents at the prospect of being forced from their homes to an unknown and uncertain future.

There was also immediate deflation on local real estate prices in the affected areas.

Many rental property owners were not advised of the resumption intention - the WDA advising only their tenants of the property resumption plans. For many owners, the first they knew of the WDA plans was when the tenants gave notice, and in some cases, only when their tenants moved out.

Other long-term owners in Haberfield and Concord were subjected to pressure, to sell their properties for low prices, by WDA agents.

Many businesses faced uncertainty about their prospects and found that trade reduced quite quickly through 2014. The loss of a family run motel on Parramatta Road would be significant loss for the district.

In mid 2015, a large number of residents who had lived with the apprehension of their homes being resumed for over 18 months, were advised that their properties were no longer required. Others who had not had any such advice received letters stating their properties would be resumed. This occurred in Ashfield and Haberfield. The impact of proposed resumptions in Haberfield and Ashfield is significant.

- Lack of analysis of the Socio-economic impact : The EIS identifies the social impacts on individual finances, health and loss of equity caused by compulsory land acquisition. It also concludes that this disadvantages the sick, frail, elderly and poor. It also concludes that property owners who seek to find property in the district would also be disadvantaged by the limited time available to find suitable property. The remedies offered in the EIS are limited and do little to identify how local residents would be supported. It appears to conclude disadvantage to property owners would just be collateral damage. There is no detailing of the socio-economic cost of these impacts. These need to be appropriately estimated and considered within a comprehensive social impact statement. *Those disadvantaged by the proposed measures must have appropriate financial restitution to compensate for current and future losses*.
- Demolition of Apartments and social housing stock: One impact particularly for Haberfield/Ashfield and also Concord is the proposed demolition of many apartments and social housing blocks. Haberfield will lose over 50% of its apartment dwellings, many of which house single person and elderly long term residents. There is little if any equivalent stock available for purchase or rent nearby. Many of the people who are being forced from their homes will be forced to try and find a new home some distance away from where they have been part of established communities for years. Compulsory acquisition processes are already being implemented on local residents before the project is approved. Families, Friends and Neighbours are being separated. So while the impact is most significant for the 400 or more people forced to move, it also affects the hundreds who remain. Any stock demolished must be replaced and locally available for people on low incomes.
- Supports for those affected and impacted by proposals: The EIS suggests WestCONnex would offer a counselling service to those affected: this is a somewhat akin to a party assaulting someone, then offering counselling in order for a person to deal with the assault. *The only solution is to offer support for independent financial, legal and other counselling advice to affected people and to pay full and appropriate sums to compensate.*
- Destruction of Urban Heritage in Historic Conservation Area: The heritage report identifies that many of the historic houses that are slated for destruction are in Haberfield and Ashfield. This would result in a permanent scar on the historic fabric of the world's first garden suburb and also cut off the western corner of the suburb from the rest of this treasured precinct. The EIS states that this proposal would have a major adverse impact on Haberfield Conservation Area. It does not propose any mitigation or restitution for this loss. (Definition of Major Adverse Impact p 19-11, Table 19-4 EIS Section 1B: "Actions that would have a severe, long-term and possibly irreversible impact on a heritage item. Actions in this category would include partial or complete demolition of a heritage item. These actions cannot be fully mitigated. ")

- Loss of Community: The EIS itself says in 14.4.2, "Changes to the amenity of a street or suburb can negatively impact the sense of belonging and identity of its residents and consequently their cohesion and connectedness. Areas with heritage values can also be a significant contributor to local character and community sense of place. Impacts on heritage assets affect not only the value of the assets, but the value communities place on the quality of their environment, and their connections to it, both past and present." "These impacts are primarily along the M4 corridor in Homebush at the western and eastern ventilation facilities, Concord Road interchange, and Parramatta Road and Wattle Street interchanges." It describes the impacts for Haberfield as "major adverse impacts" with the whole project having cumulative adverse impacts. *It proposes no solution or restitution for this impact. This is not acceptable*.
- Ongoing implied forced Acquisition of property prior to any official approval for the project: This week identified Residents and Businesses in Haberfield & Ashfield have received compulsory acquisition notices (PANS), which set a 90 day time frame for a negotiated settlement to be finalised, before court proceedings would commence. Residents who have lived their whole lives in the district will be forced from their homes, often with what is considered inadequate funds to secure housing within the neighbourhood. Residents report that RMS staff have been behaving in a forceful and what some consider a bullying manner towards them. They find it difficult to understand that as an EIS has just been released for community consultation, the planned acquisitions are being forced through, prior to any formal approval and prior to any consideration of community responses and concerns. Many believe the process to be a sham formality, without taking any real consideration of resident concerns. All property acquisition processes must cease until there is a full release of the Business case to the parliament and public to allow appropriate analysis of the proposal and for alternatives to be properly considered. This must include a full socio-economic impact analysis that accounts for all costs of the project and does not hide the costs borne by individuals if this project were to proceed.

Construction related impacts

The size of the project is huge with a 65 hectare (650,000 square metres) project footprint. This includes clearance of 13 hectares of vegetation and established tree cover.

I object to the proposed destruction of healthy iconic trees in the Reg Coady reserve.

- Noise and Dust : The EIS discusses the extent of the construction period of some 3 years. This includes a plan for 24 hour operations of heavy truck removal, with many places experiencing 20-40 heavy truck movements an hour 24 hours a day, as over 1.7 million cubic metres or some 16 million tonnes of spoil are removed. Part of this includes trucks running up and down Wattle Street adjacent to residential areas, where traffic is usually light between 9 pm & 6 am. I object to the proposed 24 hour spoil removal by truck. There would have to be respite from this process, from 9pm to 7am.
- Also all trucks from Haberfield/Ashfield would aggregate in Concord through Homebush and beyond for 24 hours a day, subjecting many people along that corridor to extended period of noise & dust. *Appropriate noise mitigation through double glazing and sound barriers would have to be installed. This would also require*

installation of high capacity dust filtration on air-conditioners. The capital and recurrent operating costs should be borne by WDA

- Vibration & potential damage to homes: There is significant local resident concern on the impact of tunnelling beneath and around properties and the possibility of structural damage to old homes. *There must be independent structural assessment of all houses in the region of the proposed tunnelling and blasting (within 200metres of the tunnels). All damage must be compensated with full remediation*.
- **Destruction to Neighbourhood and Community**: The grief and mourning caused by the forced breakup of family kinship and community ties would be long-lasting.

Health Impacts

I object to this project because a number of health induced impacts are not satisfactorily addressed in the EIS.

- Sleep Disturbance: If heavy vehicle traffic is permitted on a 24 hour basis, it would disrupt sleep patterns for many local residents. Poor sleep is associated with a raft of health impacts, including increased blood pressure, increased cholesterol levels, impaired work performance, increased anxiety and depression. *This would require a noise curfew between 9pm and 7am, along with noise mitigation described above*
- **Respiratory Irritation due to dust**: Spoil removal from tunnelling would increase dust locally and this would impact on general respiratory health, particularly for young infants and children and those with pre-existing heart & lung conditions. *This would require appropriate glazing and air filtration mitigation as proposed above. In addition round the clock monitoring of local air quality would be required and residents would need to be alerted if dust levels were raised at certain times*.
- Mourning & Grief over loss over home & community: This would be an enduring influence on many people, including those forcibly moved and those that remain. It would also increase the risk of both anxiety and depressive conditions. The loss of home and community attacks a basic need for all humans, to have stable shelter and accommodation. Many people believed that a home within the confines of the Heritage Conservation area would safe-guard them from the destruction and vandalisation of their community. *The lack of any proposed mitigation for this major impact is a serious deficiency in the EIS. It would require appropriate address and resolution. There should not be any progress on the project until this matter is satisfactorily addressed and appropriate restitution made to affected residents*
- Anxiety about impact on homes: The ongoing work, associated, with blasting, tunnelling and spoil removal would leave many remaining residents anxious about the security of their own homes and possible financial loss.
- **Impact on Family life**: The loss of close family and friends from an immediate neighbourhood diminishes the quality of life for many people. Increased isolation, particularly those who were in their own or rented flats is associated with increased health morbidity. *It is most likely that the initiation of the project would hasten the death of many elderly residents if they were displaced from their long-standing homes and community. No mitigation has been proposed for this problem*.

Post Construction related impacts

I object to the proposal on the basis that even if the M4 East tunnel was completed, traffic congestion impacts in the Haberfield/Ashfield localities will remain unresolved.

Once the project is completed in 2019, the Haberfield/Ashfield sector would remain significantly impacted as the increased induced traffic would funnel into 2 already crowded corridors, namely Parramatta Rd and Dobroyd Parade. Proposed new right hand turns at Ramsay Street & and Waratah St off Wattle Street would increase through traffic in what is a residential suburb. The EIS also notes in its cumulative impact section (26), that there would be greater traffic densities along both the Eastern sector of Parramatta Rd and Wattle St when the whole project is complete. This appears to contradict other assertions about the localised benefits. It also states in Section 26.4.2 that there would be significant increases in concentrations of pollutants in a select number of sites, but does not specify where. *Detailed information is required about where the pollution impacts are predicted to be worse as consequence of this project and identification of what remedies or solutions are proposed. These matters must be satisfactorily addressed before the proposal proceeds any further*.

Questions about Ongoing Health Impacts

I object to the current proposal because the EIS fails to satisfactorily address a number of significant concerns about ongoing health impacts

- Localised noise hot spots: The redistribution of traffic and focussed portal entry & exits would cause concentrations of noise. In addition, ventilation fans and exhaust stacks would create new noise sources that would require monitoring. *This information should be clearly spelled out and readily identified and appropriate mitigation planned*.
- **Ongoing sleep disturbance**: The localised hot spots would contribute to ongoing sleep disturbance with health impacts that are known and documented
- Localised Pollution hotspots: The Portal entry and exits would create localised pollution hot-spots. In addition until the project is complete, as described above there will be ongoing increased traffic in Parramatta road east of Bland Street, which would cause local problems. *Again detailed information of these impacts is required along with mitigation proposals*

Exhaust stack plume dispersal: Even if we accept the assertion in the EIS that the exhaust ventilation tunnel would for the most part allow for reasonable distribution of pollutants away from the immediate vicinity, two issues of concern remain.

The first issue is: *what is the impact of intense localised plume strikes onto small areas, which would cause often short, but quite intense concentrations of pollutants in a restricted area, due to changes in wind patterns or atmospheric inversion layers?* These acute events can be a major trigger for acute asthma episodes or people with other chronic lung conditions. A further issue is that plume strikes would more frequently hit high rise buildings, so projected high rise apartments along the Parramatta Rd corridor would be more likely to be affected than low rise housing.

The second issue is: **do these pollutant plumes continue to contribute to the adverse air quality conditions in the SW of Sydney?** So is the claim of an improved local air quality in in the inner west, done at the expense of a worsening of the air quality in the South West, due to the prevailing air movements?

- **In Tunnel exposure to pollutants**: The EIS identifies the pollutant exposure for the Concord-Haberfield journey. However, there does not appear any recognition of cumulative exposure for people such as transport and taxi drivers, once all proposed tunnel projects are complete. If a person takes a return trip from Hornsby to the airport via NorthCONnex & WestCONnex, over half the journey by 2023 would be in a tunnel. So there would be some 40 or more minutes spent driving in a tunnel on a return trip. What would be the cumulative in-tunnel exposure from such a lengthy trip? Or if a taxi driver did this trip three times in a day, the exposure would be even longer; say a minimum of 120 minutes of in tunnel ambient exposure. How would the cumulative impact accrue in terms of NO2 or CO exposure? Would there need to be advisory information to limit in-tunnel exposure to less than 60 minutes per day?
- The lack of analysis about particulate matter pollution: The EIS raises a number of contradictory issues about PM monitoring. The EIS argues that the NSW approved methods has no requirement to measure PM2.5. In fact much of the analysis is done on standards promulgated in 1998, and probably on science that is over 30 years old! There have been huge advances in knowledge and measurement technologies since then. This raised questions about claims that this project is being based on world's best practice.
- We know that there is no safe limit to most exhaust emission exposure. Exhaust emissions contribute to both increased rates of cardio-vascular disease and lung conditions, including lung cancer, which is now increasing amongst non-smokers.
- Diesel exhaust emissions are carcinogenic. Modern Diesel exhaust consists mostly of particles sized PM0.5 and smaller (i.e less than 0.5 micrometer, at least one fifth smaller than PM2.5). There is no measurement of the quantity of these particles which drivers will be exposed to in tunnels. These particles penetrate into the blood stream and long term effects are not well known. It is not acceptable to state that the technology to measure these PM emissions is difficult and not required by NSW approved methods (section 9.2.4). The public needs to know what they would be exposed to in tunnel and via the tunnel exhaust vents. There are mitigating technologies that reduce in-tunnel and from tunnel exhaust ventilation stacks, by the use of electronic precipitators, which if designed from the start can work satisfactorily, as they do in Madrid and Hong Kong. Also carbon filtration can reduce Nitrous oxide build-up both in tunnel and from exhaust.

It may be that diesel vehicles need to be banned from tunnels and also urban environments.

In Summary

The EIS clearly outlines the enduring and destructive impact that the WestCONnex project will have on the lives of people in select communities of the inner west. The loss of heritage items will be irreplaceable. The social connections and networks of families and friends will be disrupted. No meaningful mitigation is proposed. The central argument of the project proponents is that the perceived benefits will make Sydney a better place, so that the enforced

sacrifices of a few justify this outcome. The proponents do not give any real evidence to support their thesis and to date no true business case that includes all socio-economic costs and benefits, has been made available. In fact it would appear that the proponents are pushing ahead with the project in spite of clear external critiques and with no logical rebuttal to the critics.

The project has already had an impact on the health and wellbeing of local citizens. During construction further impacts are proposed, that if unmodified would have serious impact on local wellbeing, particularly the 24 heavy vehicle traffic and tunnelling work. Even if the M4East was to be completed, local pollution and noise hot-spots would remain; East of Bland St and along City West link would be as congested as ever, with increased capacity coming to a stuttering halt at those 2 choke points. Increased public transport plans for Parramatta road are not even planned to be operational until 2031.

As outlined, there remain too many unanswered questions about the health impacts.

From a health perspective for local affected communities, this is a slow moving disaster. The disaster is easily avoidable, and should be avoided, by not proceeding headlong with this project. It is the wrong project at the wrong time for Sydney. Let us stand back, take a deep breath and work collaboratively, using proper planning principles, to design a twenty-first century transport solutions for our communities and metropolis.

Non-Aboriginal heritage

Natural & cultural resources and the environment

Provided by Kathy Calman, co-convenor of the Beverly Hills Kingsgrove WestCONnex Action Group

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 a **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 <u>independent infrastructure</u> <u>experts with worldwide experience</u> 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 (<u>reported</u> in the media) claim that lower than market value is offered for their homes and that they are bullied by RMS staff. Longstanding community members <u>are being</u> forced to move far from their social networks.

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.



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 elsewhere in this document.)

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 <u>evidence</u> 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.

[https://newmatilda.com/2015/10/02/westconnexs-asbestos-problem/]

I object to the <u>contempt WestConnex has shown for the health and safety of residents</u> 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. [http://www.jennyleong.org/government_forced_to_recognise_westconnex_asbestos_concerns]

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.



Trucks waiting to get onto the M5 at Beverly Hills

Heritage Destruction

This section is extracted from a submission made by the National Trust of Australia(NSW) Advocacy Director Graham Quint, and reproduced here with permission.

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)

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.

1. 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.
- 2. 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.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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,

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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 Bay64 Concord Road, Concord, example of transitional Victorian/Federation house9 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.



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

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

Conclusion

Most of the claimed benefits arise from activities that are peripheral to the core project. They could equally well be delivered as standalone projects. As such, they can provide no justification for the wider project, and indeed, it is a failure of process that they have not been listed as alternatives to the current project.

Improved bus services are claimed as a result of the project, but bus lanes promised on Parramatta Rd are not a product of the project, and may not happen at all. Currently, they are only options being considered by Transport NSW, and could be delivered without WestConnex.

Some bus routes across Parramatta Rd running N and S are predicted in the M4 widening to take longer after the completion of works.

It is a failure of process that where alternatives have been acknowledged, they are not properly considered. For example, public transport is dismissed because of its unsuitability for freight, without acknowledging that improved public transport will take commuters off the road, freeing up capacity for freight.

It is also a failure of process that the business case was not included. To be legitimately performed, the consultation process requires the sharing of all available and relevant information, including the best available assessment of the cost and benefits. Until this information is made available and reviewed, consultation cannot properly be said to have happened.

There are a huge number of questions hanging over the WestConnex project. Evidence is mounting that WestConnex would not meet its objectives and the EIS does not provide confidence that it can do so. The M4 East should not be approved until these questions are satisfactorily addressed. If they cannot be answered, then the project should not be allowed to proceed at all.

Contributors

Amongst others, contributors include: Anthony McCosker, Ben Aveling, Kathy Calman, EcoTransit, Nicole Gooch, Wendy Bacon