Introduction

My name is Lyall Kennedy. I am a Transport Economist with over 38 years experience in transport delivery and planning. I have held senior executive roles in the State Government and the private sector. I am currently Director of Kennedy Consulting Pty Limited providing transport management and planning advice to the private and public sectors.

I also spent four years on Ashfield Council including as Mayor in 2011 and 2012.

I am very concerned that the WestConnex project has been ill conceived and the weaknesses of the proposal have been amplified through poor governance.

My submission largely focuses on transport issues. I have also included coments from other transport professionals, in particular Chris Standen.

I strongly urge the Department of Planning & Environment to reject the New M5 EIS. Some of the reasons I call for this are elaborated below.

Lack of Transparency and Proper Process in Project Selection

The Federal and NSW governments have called WestConnex the largest road infrastructure project in Australia's history. For such a major piece of infrastructure it has had a relatively short period of review. It appears to have been 'fast-tracked' bypassing important evaluation steps aimed at providing assurance to government and the taxpayers that the project is the best solution.

The Productivity Commission in its recent inquiry into public infrastructure found

> "an urgent need to comprehensively overhaul processes for assessing and developing public infrastructure projects."

It pointed to

> "numerous examples of poor value for money arising from inadequate project selection, potentially costing Australia billions of dollars".

It argued that further spending under the status quo will simply increase the cost to users, taxpayers and the community, and lead to more wasteful infrastructure.[1]

At the request of the Senate Select Committee into the Abbott Government's Budget Cuts, the Grattan Institute recently prepared a paper on infrastructure financing and expenditure with a focus on transport infrastructure.[2]

> "To get a better return from infrastructure spending, governments should focus on selecting the right projects, and on making the business cases and

[1] *Inquiry into Public Infrastructure,* Productivity Commission (2014)

[2] *Submission to Select Committee into the Abbott Government's Budget Cuts,* Marion Terrill, Transport Program Director Grattan Institute (August 2015)

their underlying assumptions more transparent. Governments can also get a better return through use of new technologies to get more value out of existing infrastructure; through minor augmentation and relief of pinch points; and through more systematic maintenance.

"The capacity to waste money is a serious risk for infrastructure, given the very large amounts of money involved."[3]

"Infrastructure investment over the past five years has been about one per cent of GDP higher than a decade earlier. Such a significant increase would have been expected to have some visible effect on GDP growth. There is no evidence it has done so, with GDP growth still well below three per cent per annum and below historic growth rates.

"The wrong projects can destroy value and divert funds from projects that would be more valuable to the economy and community."[4]

"Australia could get better value from public infrastructure by making better project selections. Unreliable or non-existent cost-benefit analyses have been an obstacle to optimal project selection. Recent large infrastructure projects in Australia have typically suffered from cost overruns of about 15 per cent, while patronage has been 15 per cent lower than projected, on average. As a result, real cost-benefit multiples are expected to be about 25 per cent lower than projected on average. All other things being equal, this consistent overestimation of benefit-cost ratios is making uneconomic projects look viable at the approval stage."[5]

Unfortunately, the WestConnex project does not appear to be an example of industry best practice in project selection and transparency (see NSW Auditor General's comments below). Calls for the release of the business case have been opposed by both the Federal and NSW governments. If there is such a compelling business case, then why isn't it being shared with the Australian taxpayers who are bearing the risks associated with this project.

The Auditor General's Performance Audit of WestConnex[6] conducted in 2014 highlighted the importance of proper evaluation and identified some serious deficiencies in the development of the WestConnex project.

The Executive Summary concluded

"In the period covered by this audit, the processes applied to WestConnex to provide independent assurance to Government did not meet best practice standards…

"The preliminary business case submitted for Gateway review had many

[3] Ibid Page 1
[4] Ibid Pages 5-6
[5] Ibid Page 6
[6] *Performance Audit WestConnex: Assurance to the Government*, New South Wales Auditor-General, 2014

deficiencies and fell well short of the standard required for such a document. Further, on our analysis, the business case put to the Government still included some deficiencies that independent Gateway reviews and external assurance arrangements, if they had occurred, should have identified…

"The post-business case governance arrangements did not clearly separate board-level responsibilities for commissioning from responsibilities for delivering the WestConnex project. After not separating the roles, they also failed to provide mechanisms to effectively manage the conflict between these roles.

"The WestConnex project offers several lessons. While good internal controls are critical, they are not a substitute for externally managed Gateway reviews. Steering committees and boards cannot be responsible for both project delivery and independent assurance and reporting to the Government. Responsibility for commissioning should be clearly differentiated from the responsibility for project delivery. Challenging deadlines heighten the need for good assurance but, paradoxically, also the risk of departure from best practice."[7]

The NSW Government's Major Projects Assurance Framework

"The Government approved a new Major Projects Assurance Framework in December 2011…

"The objective of the Framework is to increase the Government's confidence and assurance in planning and implementation of major projects through their entire lifecycle, specifically:

prevent projects failing or not realising their stated objectives/benefits

- improve clarity in the feasibility phase of projects
- drive better governance
- inform Cabinet Infrastructure Committee intervention.

"A key component of the Major Projects Assurance Framework is the Gateway review system. The Gateway system is a series of structured reviews at key decision points (gates) in a project's lifecycle. Gateway gives the Government a level of independent assurance on:

- whether an investment in a project is warranted
- the strategic options considered
- the agency's capacity to manage and deliver the project on time, on budget and achieve desired project outcomes

[7] Ibid Pages 3-4

- whether a project is on track and ready to move to the next phase."[8]

The WestConnex Concept

"Based on the Major Projects Assurance Framework, we expected a Gateway review (or similar arm's length, independent review) either during the concept phase or early in the development of the business case.

"The Major Projects Assurance Framework introduced a Gate Zero to provide assurance that projects are well justified after considering a wide range of options. A Gateway review or similar should therefore be conducted early in a project's life cycle to provide assurance around whether:

- the need for a project is properly defined
- there is justification for addressing that need
- the best value means of servicing that need are being proposed after considering a broad range of alternatives and their associated costs and benefits.

"We also expected that Infrastructure NSW or some other body would have recognised the need for a Gateway review during the concept phase, or early in the development of the business case and taken steps to ensure this occurred, including reporting to the Cabinet Infrastructure Committee.

"There was no independent Gateway review or equivalent undertaken at the concept stage. Infrastructure NSW has indicated that the concept paper it prepared to advise Government before WestConnex was publicly announced was not subjected to any independent assurance reviews. The first gateway review was of the preliminary business case late in the business case development phase...

"We saw no evidence that:

- the Government specifically exempted WestConnex from the Major Projects Assurance Framework Gate Zero
- provided an explanation or justification for the variation from the Major Projects Assurance Framework
- the alternative approach adopted was assessed as being equivalent to, or better than, the Major Projects Assurance Framework.

"…we believe that a Gate Zero Gateway review should have been conducted. It would have provided independent assurance that the project was justified…

[8] Ibid, Pages 10- 11

"Infrastructure NSW's roles at this stage of the WestConnex project were in conflict. It was responsible for developing the WestConnex concept and at the same time it was the key agency responsible for providing assurance to Government over major capital projects including WestConnex. A fundamental principle is separation between those providing independent assurance and those developing and delivering a project."[9]

Developing the Business Case

"Given no Gate Zero Gateway review was conducted during the concept phase, we expected one (or an equivalent arm's length, independent expert review) at the beginning of this phase.

"In line with the Transport for NSW Investment and Gating System we also expected to see the following Gateway reviews (or equivalent arm's length, independent expert reviews)

- a strategic business case review (Gate One)
- a preliminary business case review (Gate Two)
- a final business case review (Gate Three).

"We expected there would be acquittals of each of these reviews, and that the review reports and acquittals would be provided formally to Infrastructure NSW and followed up in each subsequent Gateway review or equivalent. We also expected regular progress reports to, and monitoring by, Infrastructure NSW."[10]

"We expected to see outputs from the other peer reviewers but detailed reports were limited to infrastructure solutions, capital costs and traffic analysis. Even here, timing was a concern. The peer reviewer engaged to review the traffic analysis produced a report, but not until November 2013 after the business case went to the Government. The reviewer's report indicated that the review was supposed to be continuous throughout the process of modelling, but the traffic modellers were too pressed for time to consult on a continuous basis with the peer reviewer. The reviewer described the exercise as more an audit than a peer review. The reviewer concluded that the traffic data he received in early August 2013 'raises questions about the underlying quality of the modelling'.

"The agencies concerned advised us that significant analysis and review of traffic numbers was undertaken by the specialist work streams established within the Project Office. However, we have seen no evidence of an independent, arm's length review of the traffic analysis used for the final business case, by someone technically qualified to do so, before the business case was presented to the Government.

[9] Ibid Pages 16-17
[10] Ibid Page 21

"We did not find peer review outputs for land use, urban planning or transport planning."[11]

Gateway review of a preliminary business case

"One formal, independent Gateway review was conducted during the development of the business case. This was of a preliminary business case.

"In its report to the Sydney Motorways Project Office (dated 14 June 2013), the Gateway Review Panel concluded that

> "due to lack of key information presented for the review, the Gateway Review Panel was not able to form a view on whether the project is a worthwhile and prudent investment (both economically and financially viable) for the NSW Government".

"Further, the Gateway Review Panel stated that:

> "A number of key documents were delivered later than anticipated and the Review Panel had very limited time to review the Silver business case.

"Relevant documentation relating to a number of critical areas of the business case was not available for review - these included the Governance Section, Financial Plan and Communications Plan. The absence of these documents did impact on the ability to review related sections.

"The Review Panel did not have access to a number of Stakeholders or documents that were considered essential in order to satisfactorily complete the review.

"The Review Panel noted that not all key benefits nor all key risks were adequately documented, and that the business case would benefit from these and other inclusions".[12]

"The Gateway Review Panel also found the preliminary business case should have been more advanced than it was and would have benefited from previous iterations and review processes which had not occurred.

"The Gateway Review Panel's 'traffic light' risk ratings against the Gateway criteria were all red and yellow, with no greens."[13]

[11] Ibid Page 26
[12] Ibid Page 28
[13] Ibid Page 29

Business needs and benefit (Service) delivery	**Yellow**
Funding and value for money	**Red**
Sustainability	**Yellow**
Governance	**Red**
Risk Management	**Yellow**
Project Delivery	**Red**
Stakeholder management	**Red**
Change management	**Red**
Cost management	**Yellow**

Red: critical and urgent – project strategy to address the shortcomings/recommendations is to be established before project is further progressed.

Yellow: Important and urgent – project should go forward with action on recommendations. Source: WestConnex preliminary business case Gateway review 2013.

Matters a Gateway review may have identified

"We reviewed the final business case and identified some issues with the underlying analysis which we believe a full Gateway review should have identified.

"These deficiencies related to the way the business case dealt with risks around traffic projections, project cost, economic benefits, financial analysis, governance arrangements and the procurement strategy."[14]

Purpose of the business case

"Roads and Maritime Services say that the assurance provided to the Government on the WestConnex business case was appropriate for its purpose.

"It says the overall objective outlined in the Business Case Implementation Plan was to "produce a business case that demonstrates the overall technical and financial viability of the WestConnex scheme, consistent with the State's Fiscal Strategy".

"Roads and Maritime Services advised that at the conclusion of the business case in July 2013, Stage 1 was regarded as being sufficiently developed to proceed to procurement and environmental planning phases. For the other stages, the business case outlined a pathway for their further development and planning. It says that it was always envisaged that there would be additional Gateway reviews conducted on the component parts of the scheme.

"Roads and Maritime Services' arguments do not justify the lower level of independent assurance provided on WestConnex than that offered by the Major Projects Assurance Framework. The objective was to "produce a

[14] Ibid Page 31

business case that demonstrates the overall technical and financial viability of the WestConnex scheme, consistent with the State's Fiscal Strategy." Approval of the business case was the key decision point so far for this project, and arguably the stage at which independent assurance was most critical."[15]

Failure to abide by the Major Projects Assurance Framework and employ best practice governance from project inception has greatly reduced community confidence. The Community is being asked to comment on an EIS that is deficient in analysis of project justification.

A condition of consent for the M4 East should include adherence to the NSW Government's Major Projects Assurance Framework. Vital gateway reviews which should have been undertaken before the preparation of the EIS (and certainly before awarding construction contracts) should be commissioned, completed and made publicly available before any further approvals are issued.

What came first – WestConnex or the Strategic Plans

EIS proponent requires that it is consistent with all the strategic planning instruments in Sydney. Requiring this project to be consistent with all the strategic planning instruments sounds reasonable until you realise that all these plans were rewritten in 2012/2013 to place WestConnex at the centre of their transport strategies.

Up until 2012, metro strategy development in NSW was based on developing the broad strategy planning objectives and then discussing options to meet these strategic objectives before proposing individual projects/actions. Linking the M4 with the M5, as proposed by WestConnex, was never included as a project to realise previous Metropolitan Strategies.

Once WestConnex became the number one infrastructure project proposed by Infrastructure NSW, all the strategic planning documents were rewritten to include WestConnex. In fact, it became the centrepiece of the transport strategy. This was after extensive community consultation was undertaken in February 2012 for the Long Term Transport Master Plan which did not include Westconnex.

At the time, Les Wielinga, the then Director General of Transport, was on the Board of Infrastructure NSW and at the same time was developing the Long Term Transport Master Plan. When Infrastructure NSW proposed WestConnex as the major infrastructure project of its plan, Les Wielinga resigned from the Board citing conflict of interest as he was proposing public transport solutions in the Long Term Master Plan and was not supporting WestConnex. Even within Infrastructure NSW there was doubt about the appropriateness of WestConnex.

Even with the bastardisation of the planning process, this submission identifies areas where the New M5 is inconsistent with the Metro Strategy. These include:

- Does nothing to alleviate Western Sydney congestion

[15] Ibid Page 31

- Is an unsustainable solution as it will reach capacity by 2031
- Does not relieve traffic congestion on most downstream intersections

Who Benefits from the WestConnex Motorway?

Given that WestConnex provides a direct link to Sydney Airport but not to the city or Port Botany (which is eight kilometres from WestConnex) who is the big winner out of this project?

I would suggest that Macquarie Airports the then owner of Sydney Airport appear to be a major beneficiary. They have been pushing since at least 2004 in each of their Master Plans for improved links to the airport.

In 2011 the debate on a second Sydney airport was well advanced with the Federal Government considering a further proposal. If billions of taxpayers' money was to be spent on improving the road connections to the airport this would cement it as the primary airport for Sydney for decades to come.

But how could an individual company influence the deliberations of Infrastructure NSW? One way may be to have the Chairman of Macquarie Airports Max Moore-Wilton as a Board member.

The only major attractor that is served by WestConnex is Sydney Airport. According to the WDA spin, among the benefits that WestConnex delivered included reducing the travel time from Parramatta to the airport by 40 minutes and bypassing up to 52 sets of traffic lights. They failed to say that you can now avoid the 52 traffic lights now in 2015 by catching the train which takes 45 minutes from Parramatta to the airport. According to google maps it takes between 39 and 54 minutes to drive between Parramatta and the airport. The claim of a 40 minute saving seems heroic.

The cover of the Strategic Environmental Review released by WDA in 2013 was a picture of the airport.

Sydney has underinvested in public transport over the past 30 years

In 1998 the NSW government released *Action for Transport 2010 an integrated transport plan for Sydney*.[16] The plan proposed to

> "redress the [then] current imbalance in the road and public transport system."[17]

The plan included a

> "10 point action plan for Sydney:
>
> 1. Getting the best out of the Sydney system
> 2. Improving Sydney's air quality
> 3. Reducing car dependency
> 4. Meeting the needs of our growing suburbs
> 5. Getting more people on public transport
> 6. Safeguarding our environment
> 7. Making space for cyclists and walkers
> 8. Preventing accidents and saving lives
> 9. Making freight more competitive
> 10. Giving the community value for money"[18]

The plan listed (at page 5) 21 projects to be completed or started by 2010 these were:

Rapid Bus Only Transitways

1. **Liverpool to Parramatta (2003)**
2. Parramatta to Strathfield (2002)
3. St Marys to Penrith (Stage 1 2003) (Stage 2 2008)
4. **Parramatta to Blacktown (2004)**
5. Blacktown to Castle Hill (2009)
6. Blacktown to Wetherill Park (2006)
7. Parramatta to Mungerie Park (2010)

Heavy Rail

8. **Airport Line (2000)**
9. Bondi Beach Railway (2002)
10. Parramatta Rail Link to Epping and Chatswood (2006)
11. Hornsby to Newcastle High Speed Rail (Stage 1 to Warnervale 2007) (Stage 2 to Newcastle work to start by 2010)

North West Rail Link Epping to Castle Hill (2010)

12. North West Rail Link Epping to Castle Hill (2010)
13. Sutherland to Wollongong High Speed Rail (2010)
14. Hurstville to Strathfield Railway (To start by 2010 and be completed by 2014)
15. Liverpool Y Link (Work to start by 2010)

Light Rail

16. **To Lilyfield (2001)**

Road Improvements

17. **Eastern Distributor (2000)**
18. **M5 East (2002)**

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[16] *Action for Transport 2010 an integrated transport plan for Sydney,* 1998, NSW Government,

[17] Ibid, Page 2

[18] Ibid, page 3

19. **Cross City Tunnel (2004)**
20. **M2 to Gore Hill (2004)**
21. **Western Sydney Orbital (2007)**

All the projects in bold were built. It can be seen from the list that every road project was delivered. Of the 16 public transport projects only four were completed.
The inability for successive governments to deliver public transport projects has made Sydney (particularly western Sydney) more car dependent. Building more roads has not had any lasting impact on road congestion. The traffic projections in the current M4 East EIS show the tunnel at capacity by 2031.

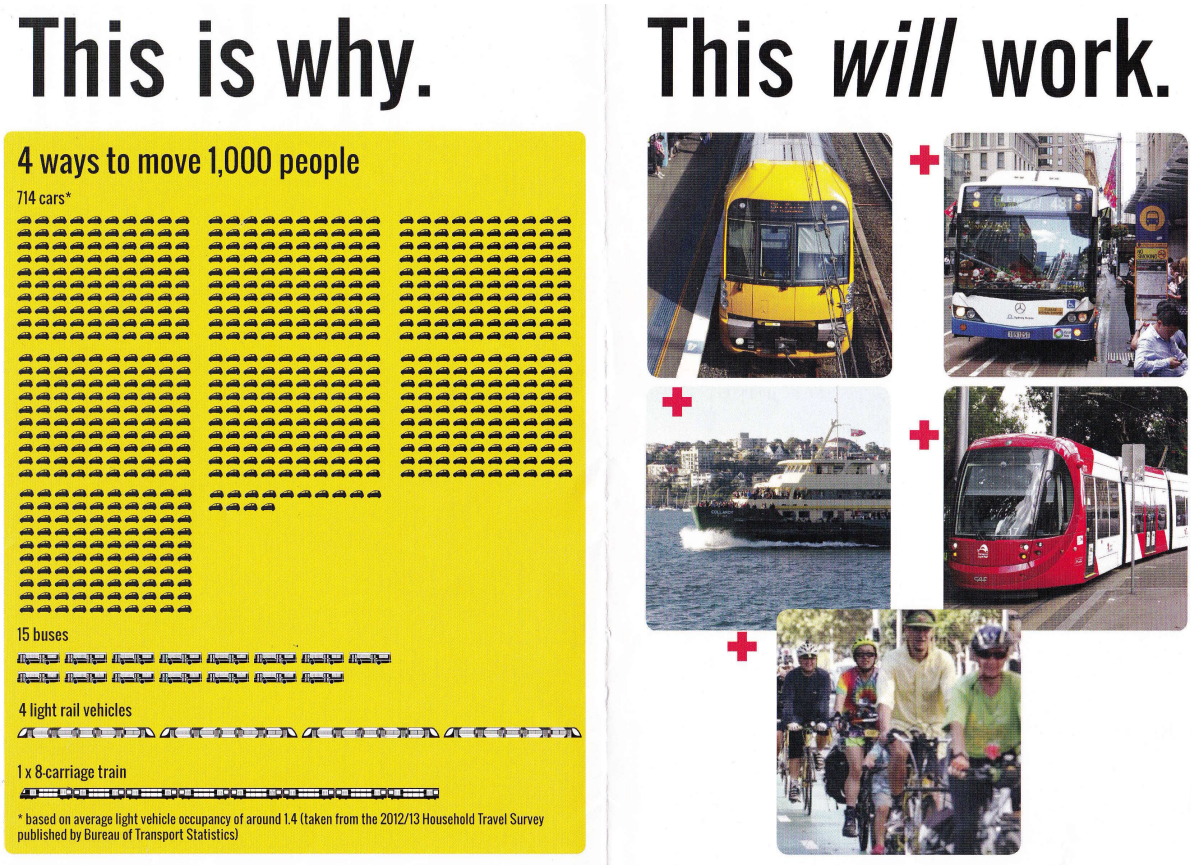
> "2031 AM peak and PM peak operational performances (in comparison to the 'do minimum' results) are detailed in Table 10.7 and Table 10.8 respectively.
>
> High traffic densities are now recorded in the project's mainline tunnel east of Concord Road, particularly westbound during the AM peak and eastbound in the PM peak where capacity is reached."[19]

What is the plan post 2031? Building more roads will not solve traffic congestion in Sydney.
WestConnex clearly fails to:

- Reduce car dependency
- Meet the needs of our growing suburbs
- Get more people on public transport

The Benefit-Cost analysis of WestConnex is evaluated over a 40 year period. Relieving traffic congestion on the corridor appears to be a major objective of the project. The project reaches capacity in the M4 East tunnel within eight years after project completion. This does not seem to be an effective means of relieving congestion. The Cost-Benefit analysis should include costs of additional measures required over the remaining 32 years of the project life to maintain the claimed congestion and travel time savings. If included, it is likely that the project costs will significantly outweigh any benefits.

[19] *M4 East EIS* Volume 2A Appendix A-G, page 10-6



1 The EIS does not comply with the Secretary Environmental Assessment Requirements (SEARS).

2 There are major issues with the Traffic and Transport Assessment. There is insufficient information about the modelling inputs, assumptions and methodology for the forecasts to be independently verified. There is no sensitivity analysis of key assumptions.

3 The social and environmental impacts described in the EIS are unacceptable and far outweigh any benefits of the project. Because of flaws in the modelling, the actual impacts are likely to be even greater than those forecast.

4 The project does not meet the project objectives.

5 Many of the project objectives, such as congestion relief, could be met through better management of demand on the existing road network, e.g., through reform of road pricing. The corridor already has an extensive and high capacity road network; there is just too much demand at present for it to operate effectively. Adding more capacity will not lessen this demand; it will only serve to increase it.

6 A claimed benefit of the project is that daily traffic on the existing M5 East would reduce by 20-40 percent due to the new tolls. If it is acknowledged that tolls alone can be effective in meeting the main project objective (reducing congestion), then what is the rationale for adding more capacity

7 The project makes little sense from a transport planning and policy perspective. The role of motorways is to allow traffic to circumvent densely populated areas. For radial transport into and out of urban centres, mass transit is more efficient and economical, and has less impact on the human population.

8 The project is not in the public interest. It will be used by less than 1% of the NSW population each day. The rest of the population will pay dearly in terms of higher traffic impacts, poorer air quality, and state and federal taxes being diverted from public transport and other more worthy causes?

9 The project has a high financial risk. The flaws and optimistic assumptions in the traffic modelling mean that toll revenue is likely to be significantly lower than forecast. AECOM has a history of providing over-optimistic traffic forecasts for toll roads, resulting in previous financial failures (e.g., Clem7).

10 The average daily travel time in Sydney has been stable at about 80 minutes per person for decades, while the average trip distance has increased substantially (see graph below). In this time, billions have been spent on tollways. Travellers are spending more than ever on tolls, yet are not spending any less time travelling.

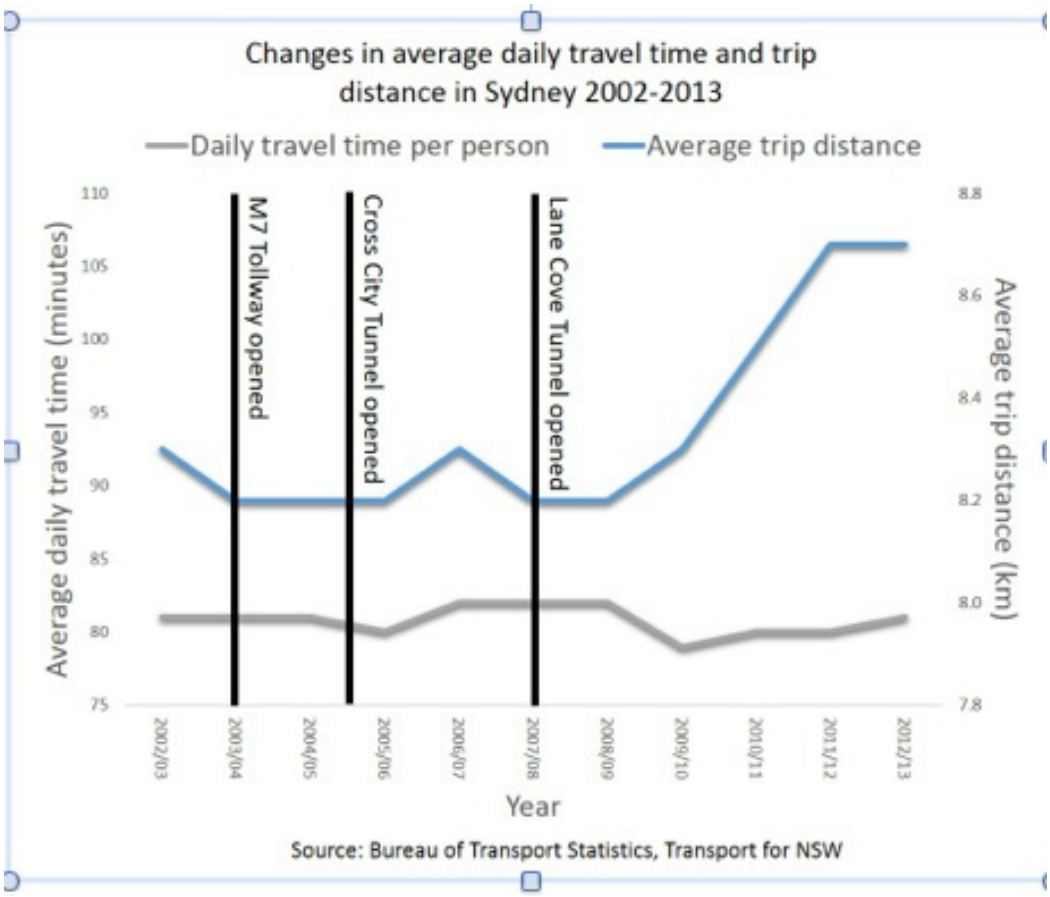
11 The higher speed of tollways has simply encouraged people to move further from work, drive more, and make longer trips than before, for example, visiting shopping malls instead of local shops. It has made road more attractive than rail for freight.

12 This predict and provide approach to transport planning has been a failure, and is being abandoned by advanced nations. In a city of 5 million people, we can never provide enough road capacity to enable everyone to live as far from work as they like, and drive wherever and whenever they like in free flowing traffic.

PROJECT & BROADER WESTCONNEX SCHEME

1) The proposed New M5 and broader WestConnex scheme are not in the public interest.

Any personal travel time savings generated by the project will not benefit the economy, and will be cancelled out in time by induced demand and induced sprawl.



The New M5 will be used by less than one percent of the NSW population each day. The costs will be borne by the whole population.

The project will cause immense social harm. It will destroy long-established communities. It will cause an increase in air pollution-related deaths and illnesses. The increase in air pollution will further inhibit lung and nervous system development in children.

There are numerous ways of spending $16.8 billion that would deliver a much greater social and economic benefit, and would not cause so much destruction.

2) The EIS authors (AECOM) have not modelled or objectively assessed alternative policy scenarios that could meet the transport/accessibility needs of NSW's growing population (individually or in combination)

For example:

- Greater investment in mass/public transport;
- Demand management/road pricing reform
- Land use planning that places homes, employment and services closer together

3) It is no secret that the primary 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 in the scheme as a means of paying for it (through tolls). However, there are various policy alternatives for dealing with the growing freight task that have not been objectively assessed in the EIS

For example:

- Improve the capacity and reliability of rail freight.
- Increase rail/intermodal freight subsidies to match those of road freight.
- Divert container operations to other ports outside the city centre. It does not make sense to concentrate container operations in the city centre where road access is costly and has significant impacts on the surrounding residential areas. An expansion of the Port Kembla container terminal, which already has good road/rail access, would stimulate the Illawarra region's economy.
- Freight demand management, e.g., incentivise shorter supply chains and local supply.

4) The new intermodal terminals at Moorebank and St Marys, along with the planned upgrades to the Port Botany rail freight rail line, will significantly increase the share of freight that can leave/enter Port Botany by rail

Against this background, spending $16.8 billion on marginal improvements to road freight access must be questioned. Is the proponent (RMS) aware of the new intermodal terminals?

5) 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. In particular the assumed toll price, on which the traffic forecasts heavily depend, has not been stated.

6) There is no sensitivity analysis in the Traffic and Transport Assessment.

The effects of varying key assumptions (e.g., willingness to pay the tolls) have not been described. AECOM has a history of overestimating the willingness of motorists to pay for toll roads, resulting in overly-optimistic traffic forecasts and financial failures (e.g., Clem7).

7) There is no modelling/objective assessment of the travel time and accessibility impacts for non-motorised modes (walk and bicycle) in the Traffic and Transport Assessment

8) The issue of induced demand has not been adequately addressed in the Traffic and Transport Assessment.

9) Given the major flaws with the 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

Particularly in the following areas:

- Air quality
- Noise and vibration
- Human health
- Greenhouse Gases

10) The role of motorways in a multimodal urban transport network is to allow traffic to circumvent populated urban areas, and to connect less densely populated areas (where mass transit is not justified).

For radial transport into and out of employment/activity centres, mass transit (e.g., rail) is faster, more efficient, requires less space, and has fewer impacts on highly populated urban areas.

11) The EIS does not consider the cumulative costs and impacts 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:

- 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%.
- Serious human health impacts due to petrochemical vehicle emissions/smog, including: lung cancer; asthma; heart disease; and impaired lung and nervous system development in children living near motorways/exhaust stacks.
- Waterways contaminated with road runoff (heavy metals and carcinogens in brake and clutch dust, exhaust particulates, etc.).
- High traffic crash costs (deaths/traumatic injuries and material damage).
- Urban sprawl and increasing commuting distances.
- Social isolation for non-drivers living in car-dependent suburbs.
- Increasing numbers of people losing sleep due to traffic noise pollution.
- Impacts on visual amenity (pollution stacks, concrete interchanges, concrete flyovers).

- Extreme summer temperatures (urban heat island effect).
- Community destruction and severance
- Destruction of heritage areas/buildings.
- Irreversible biodiversity loss.
- Less incidental physical activity from walking and bicycling (including to/from public transport), resulting in higher rates of obesity, diabetes, cancer and heart disease.
- Increased chauffeuring burdens for parents and carers
- Less independence for children.
- High per-capita greenhouse gas emissions

ALTERNATIVES

The SEARS provide for an analysis of feasible alternatives to the carrying out of the proposal and proposal justification, including:

- an analysis of alternatives/options considered, having regard to the proposal objectives (including an assessment of the environmental costs and benefits of the proposal relative to alternatives and the consequences of not carrying out the proposal), and whether or not the proposal is in the public interest,
- justification for the preferred proposal taking into consideration the objects of the Environmental Planning and Assessment Act 1979,
- details of the alternative ventilation options considered during the tunnel design to meet the air quality criteria for the proposal,
- details of the short-listed route and tunnel options from the tender process and the criteria that was considered in the selection of the preferred route and tunnel design, and staging of the proposal and the broader WestConnex scheme, and in particular access to Sydney Airport and Port Botany and improved freight efficiencies.

Standen's finding: FAIL

Comment: The EIS does not include cost-benefit analysis, modelling, or any other objective analysis of feasible alternatives. Only cursory descriptions are provided.

No alternative staging strategies are described or objectively assessed.

Cumulative aspects and proposal's relationship to rest of Westconnex works

Details of the proposal's relationship to and consistency with the broader WestConnex, and an assessment of the cumulative impacts taking into consideration the WestConnex program of works.

Standen's finding : FAIL

Comment: Cumulative construction impacts for the New M5 and other WestConnex projects have not been modelled/reported. Only a cursory description of cumulative impacts is provided.

The assessment of operational cumulative impacts does not include past/existing developments, in particular existing arterial roads and motorways. Although the economic, social and environmental costs of the proposed New M5 on its own may be considered by some stakeholders to be acceptable, the cumulative costs of this and previous/existing/planned motorway developments are considerable:

- 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
- Serious human health impacts due to petrochemical vehicle emissions/smog, including: lung cancer; asthma; heart disease; and impaired lung and nervous system development in children living near motorways/exhaust stacks.
- Waterways contaminated with road runoff (heavy metals and carcinogens in brake and clutch dust, exhaust particulates etc.).
- High traffic crash costs (deaths/traumatic injuries and material damage).
- Urban sprawl and increasing commuting distances.
- Social isolation for non-drivers living in car-dependent suburbs.
- Noise pollution from traffic and its impacts on sleep.
- Impacts on visual amenity (pollution stacks, concrete interchanges, concrete flyovers).
- Extreme summer temperatures (urban heat island effect).
- Community destruction and severance.
- Destruction of heritage.
- Irreversible Biodiversity loss.

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

- Increased chauffeuring burdens for parents and carers.

- Less independence for children

- High per-capita greenhouse gas emissions.

Meeting objectives of the entire Westconnex

Standen : FAIL

Comment: finds that the project FAILS to meet the Westconnex objectives. This will be covered in Part 3 of this submission.

Impact of New M5 on traffic and transport after start of operation

Requirement: An assessment and modelling of operational traffic and transport impacts on the local and regional road network (in consultation with affected councils), and the Sydney motorway network, including the consideration of planning proposals, major urban renewal and development, the potential cumulative impacts of Stage 3 – M4 South (Haberfield to St Peters), and the impacts of potential shifts of traffic movements to alternative routes outside the proposal area (including as a result of tolls).

Standen Finding : FAIL

Comment: The assessment of operational traffic and transport impacts is limited to a small study area around the project site. However, there will be significant traffic and transport impacts outside the study area, and indeed throughout the whole Sydney metropolitan area.

The assessment of operational traffic and transport impacts ignores delays at new on-ramps and off-ramps.

The EIS does not include any objective assessment or modelling of impacts on pedestrians and bicycles using the local and regional road network.

Pedestrian and bicycle movements have not been included in the strategic model (WRTM) nor the intersection models (LinSig). There is no forecast of the impacts on walking and bicycling travel times and accessibility.

As such the EIS does not provide a complete “assessment and modelling of operational traffic and transport impacts”, it provides only an objective assessment of motor vehicle and public transport impacts within a small part of the area affected.

Induced traffic

Requirement: Induced traffic and operational implications for public transport (particularly with respect to strategic bus corridors and bus routes) and future public

transport opportunities.

Standen Finding : FAIL

Comment: Induced demand has not been adequately accounted for because:

- The model ignores the induced demand caused by long-term transport decisions of individuals and firms, including:
- Residential location choice – the project will encourage more people to move further from work (sprawl), thereby increasing average travel distances/demand.
- Work location choice – the project will encourage more people to work further from home, thereby increasing average travel distances/demand.
- Car ownership choice – the project will encourage more car ownership and use.
- 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.

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.

Cyclists and Pedestrians

Requirement: Impacts on cyclists and pedestrian access and safety and consideration of opportunities to integrate cycleway and pedestrian elements with surrounding networks.
Standen : FAIL

Comment: The EIS does not include any objective assessment or modelling of impacts on pedestrians and bicycles using the local and regional road network.

Pedestrian and bicycle movements have not been included in the strategic transport model (WRTM) nor the intersection models (LinSig). There is no forecast of the impacts on walking and bicycling travel times and accessibility.

Air Quality

Requirement: An assessment of construction and operational activities that have the potential to impact on in-tunnel, local and regional air quality. The air quality impact assessment must provide an assessment of the risk associated with potential discharges of fugitive and point source emissions on sensitive receivers.

Standen: FAIL

Comment: An accurate assessment of air quality impacts is dependent on an accurate assessment of traffic and transport impacts. Because the traffic and transport impacts have not been correctly modelled, the air quality impact assessment is worthless.

Human Health Impacts

An assessment of human health impacts.

Standen: FAIL

Comment: An accurate assessment of human health is dependent on an accurate assessment of traffic and transport impacts. Because the traffic and transport impacts have not been correctly modelled, the human health impact assessment is worthless.

Noise Impacts

Requirement: An assessment of the noise impacts of the proposal during operation, consistent with the Road Noise Policy (EPA, 2011) and NSW Industrial Noise Policy (EPA, 2000).

An accurate assessment of noise impacts is dependent on an accurate assessment of traffic and transport impacts. Because the traffic and transport impacts have not been correctly modelled, the noise impact assessment is worthless.

CHRIS STANDEN : REASONS WHY WESTCONNEX FAILS TO MEET OBJECTIVES

Westconnex has key objectives that the whole project is supposed to meet.

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.**

Westconnex's stated objectives have no associated targets by which their achievement can be ever be determined. For example, how can it ever be determined if the objective to "maintain regional air quality" has been met? Objectives/targets need to be:

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound

Even though the objectives of Westconnex have been contrived to fit the project, the **project still does not meet them.**

Each objective below is accompanied by an explanation of why the project does **NOT** meet that objective.

1. Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways and south-western Sydney and places of business across the city.

- There is already an extensive and high–capacity road and motorway network linking Sydney's international gateways (Sydney Airport and Port Botany), Western Sydney and places of business across the city. The operation of this network could be improved significantly with demand management such as road pricing reform. There is no need for costly and destructive new motorways.

- The most efficient and economical way to link large trip generators is with mass transit. A single motorway lane can transport only 2000 passengers per hour, under ideal conditions. A single railway line can transport 20,000 passengers per hour.

2. Relieve road congestion to improve the speed, reliability and safety of travel in the M5 Motorway corridor.

- There is no evidence that increasing road capacity and building urban motorways can relieve road congestion in the long term, because the added capacity simply induces more demand.

- As travel speeds increase, so do travel distances, i.e., increasing the speed of the road network encourages urban sprawl. Perversely, this sprawl has the effect of reducing the population's accessibility to employment, education and services, and increasing transport costs (because people have to travel longer distances.

- Road congestion is inevitable in any large city, in the absence of adequate demand management. There can never be enough road capacity to satisfy the latent demand for driving, where everyone can live as far from work as they like, and drive whenever they like, to wherever they like in free flowing traffic. It is geometrically impossible.

- Congestion on Sydney's roads is the main thing keeping private vehicle travel demand in check. If this congestion is relieved temporarily by increasing the road supply, then demand will increase until a new equilibrium between supply and demand is reached (i.e., congestion will return to its previous level)

- A better objective would be to give as many people as possible a reasonable alternative to sitting in traffic. How many people would really prefer to spend hours each week crawling along a dark tunnel inhaling truck fumes, than sitting in a modern train that takes them

swiftly to their destination, where they can use the time to relax, read, work etc.

- A claimed benefit of the project is that daily traffic on the existing M5 East would reduce by 20-40 percent due to the new tolls. If it is acknowledged that tolls alone are effective in meeting the project objective (reducing congestion), then there is no rationale for adding more capacity.

- **More intersections in the study area will have an LOS of F with the project (4) than without it (3) in 2021.**

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

There is already more than sufficient capacity along these corridors to cater for all the essential vehicle travel. Non-essential vehicle travel could be discouraged through better demand management, e.g., road pricing reform.

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

- This objective could be more easily and more economically achieved by improving the operation of the existing road network with demand management, e.g., road pricing reform.

- It has to be questioned whether a highly populated inner city area is the optimal location for some commercial and freight generating land uses. Could some of them be relocated to less populated areas, where the transport costs and externalities are lower?

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

The project has a high financial risk. The flaws and optimistic assumptions in the traffic modelling mean that toll revenue is likely to be significantly lower than forecast. AECOM has a history of providing over-optimistic traffic forecasts for toll roads, resulting in previous financial failures (e.g., Clem7).

6. Optimise user pays contributions to support funding in an affordable and equitable way.

- More than 99% of the NSW population will not use the project each day, but they will still have to pay for it through general taxation.

- Many of the potential users will be from low-income households who cannot afford to live near employment centres or railway stations. They will have to pay high tolls while higher-income households have access to cheaper roads and public transport. This is hardly equitable.

7. Provide for integration with other WestConnex projects and the proposed

Southern extension, while not significantly impacting on the surrounding environment in the interim period

- There will be significant impacts on the surrounding environment.
- There is a high risk that future stages of the WestConnex scheme will never go ahead, due to the likely financial failure of the preceding stages.

8. Manage tunnel ventilation emissions to ensure local air quality meets NSW Environment Protection Authority (EPA) standards

- The emissions from the exhaust stacks and tunnel portals will not be filtered.
- Local air quality near the project is already poor, with air toxin levels regularly exceeding standards. Even when they do not exceed standards, they still cause health problems. There is no safe level of air pollution.
- The project will result in poorer local air quality. The air quality modelling in the EIS is worthless because it is based on flawed traffic modelling.

9. Maintain regional air quality

- Regional air quality in Sydney is already poor, with air toxin levels regularly exceeding standards. Even when they do not exceed standards, they still cause health problems. There is no safe level of air pollution.
- The project will result in poorer regional air quality. The air quality modelling in the EIS is unreliable because it is based on flawed traffic modelling.

10. Manage in-tunnel air quality to stringent air quality standards

The in-tunnel air quality will be poorer than that for surface roads. People using the tunnels on a regular basis will have a higher risk of lung cancer, asthma, heart disease and other diseases. The health of children being driven through the tunnels is a particular concern.

11. Minimise energy use during construction and operation

- Roads are one of most energy-intensive ways of moving people and freight. Road construction is also energy-intensive.
- The project will encourage longer travel distances (sprawl), which will result in increased transport energy use.
- The project will encourage travellers to switch from energy-efficient

public transport to energy-inefficient private vehicles.

- Transport energy use could be better minimised by: providing for energy-efficient transport modes (public transport, walking, bicycling); and land use planning that places homes closer to employment and other destinations.

12. Manage noise impacts in accordance with the NSW Road Noise Policy and realise opportunities to reduce or mitigate noise

- Traffic volumes on surface roads will increase, resulting in increased noise pollution.

13. Provide for improvement of social and visual amenity

- The project will reduce social and visual amenity.

- The concrete interchanges and pollution stacks will be visually obtrusive.

- The increased traffic volumes on surface roads will result in lower amenity (more noise pollution, more fear and intimation, increased crash risk etc.).

- The increase in petrochemical exhaust emissions from the tunnel portals, pollution stacks and surface roads will result in increased smog and reduced visibility and air quality.

14. Minimise impacts on natural systems including biodiversity

- The project will cause irreversible biodiversity loss.

- The project will contribute to climate change through increased greenhouse gas emissions. This will result in further biodiversity loss and damage to natural systems.

15. Protect surface and groundwater sources and water quality including management of contaminated areas

- The project will result in increased VKT (Vehicle Kilometres Travelled) , and therefore more contaminants (brake and clutch dust, hydrocarbon particulates etc.) being deposited on roadways and washed into waterways.

16. Reduce susceptibility to, and minimise impacts of, flooding

- The project will contribute to climate change through increased greenhouse gas emissions. This will increase the risk of flooding and other extreme weather events, not just in Sydney, but worldwide.

17. Integrate sustainability considerations throughout the design, construction and operation of the project, including consideration of the

Infrastructure Sustainability Council of Australia (ISCA) Sustainability Rating tool scorecard

- The project is not a sustainable development.
- Not economically sustainable. The costs far outweigh the productivity benefits.
- Not socially sustainable. It will destroy and sever communities, and result in poorer public health, more car dependency, more transport inequity, and more social isolation.
- Not environmentally sustainable. It will result in higher greenhouse gas emissions and irreversible biodiversity loss.

GENERAL COMMENTS

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.

The study area (area that is analysed) is too small to capture adequately the traffic and transport impacts of the project. The project will affect home location choice, work location choice, trip generation, destination choice, mode choice and route choice across the whole metropolitan area. For example, people travelling between Penrith and the Airport will have a number of options (train; drive via M7/M2; drive via M4; drive via M7/M5; drive via un-tolled roads).

The resulting changes in travel behaviour will have implications for local and regional traffic and transport throughout the Sydney metropolitan area. For example, more Penrith residents may be encouraged to drive to the city rather than use the train, which will (a) increase traffic volumes and associated impacts on local/regional roads in/around Penrith and (b) reduce rail patronage, which could in turn lead to reduced service frequencies affecting remaining rail users.

The Traffic and Transport Assessment does not assess or even acknowledge these traffic and transport impacts beyond the study area.

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

The travel time calculations do not appear to include delays at on-ramps and off-ramps. Although it is not even mentioned in the Traffic and Transport Assessment, the Business Case states that ramp metering (signals to regulate flow onto the ramps) will be used. This will cause delays for travellers entering/exiting the M5; these delays have not been included in the Traffic and Transport Assessment.

Travel time and accessibility impacts for non-motorised modes (walk and bicycle) have not been modelled or objectively assessed.

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

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

Changes in aggregate measures have not been provided for the whole study area, nor for the wider metropolitan area, e.g.,:

- Overall increase in VKT.
- Change in average trip distance.
- Change in average trip duration.
- Change in total travel time.

COMMENTS ON SPECIFIC SECTIONS

(The references here are to sections in Appendix G)

a) Appendix G, Section 3 Strategic Context 4.2.1

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.

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); asingle railway line can transport 20,000 people per hour.

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.

b) Appendix G, Assessment methodology, 4.2.2

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

- The transport model (WRTM) has not been made available for independent verification.
- The model input data and assumptions have not been made available for independent verification. What toll prices have been assumed?
- The study 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.
- Insufficient detail on the Value of Travel Time Saving (VTTS)/Willingness to Pay (WTP) model:
- What are the form and parameters of the model?
- If it was based on stated preference surveys, then how has the issue of hypothetical bias been addressed?
- Has the model been validated? Previous toll choice models in Australia have overestimated WTP for toll roads.
- Does the model include the negative utility of the tunnel environment (monotony, no natural light, poor air quality)?
- What value of WTP has been used in the WRTM?
- What is the confidence interval around the WTP value used?
- Does the WTP estimate take into account tolls that motorists currently pay (toll saturation)? E.g., a road user may be willing to pay an additional $10/day if he/she currently pays nothing, but not willing to pay an additional $10 if he/she is already spending $15 on tolls.
- Why has the weekend period not been modelled, when current weekend traffic volumes are higher than weekday traffic volumes in some places?
- Insufficient information about the travel zone structure in the Westconnex Road Traffic Model (WRTM)
- What are the travel zones based on? How big are they?
- How are intra-zonal trips modelled?
- How are trips to/from external zones modelled?
-
- Induced demand has not been adequately addressed.
- The model ignores the impact of the project on the long-term transport

decisions of individuals and firms, including:

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

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

- Car ownership choice – the project will encourage more car ownership and use.

- 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.

- 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.

- Insufficient detail on origin-destination demand matrix generation:

- What are the form and parameters of the generalised cost function?

- How were shortest paths calculated?ion:

- Insufficient detail on trip generation:

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

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

- How were trip productions and trip attractions balanced?

- Insufficient detail on trip distribution/modal split:

- What are the form and parameters of the gravity model used?

- What are the form and parameters of the deterrence function used?

- How has modal split been estimated?

- Insufficient detail on road traffic assignment:

- Is assignment stochastic or deterministic?
- What link loading/flow function was used? What parameters were chosen?
- Were intersection delays included?
- Insufficient detail on public transport assignment:
- How were access and egress points determined?
- How were route strategies determined?
- Non-motorised trips (pedestrians, cyclists) were not included in the WRTM or LinSig modelling. (LinSig is a traffic modelling package for the assessment and design of traffic signal intersections, either individually or as a network that comprises of a number of intersections.)
- Impacts on accessibility have not been modelled/assessed.
- Most transport is not an end in itself – it is a means to access work, education, services etc. How does the project affect accessibility?
- Equity and equality impacts not described.
- How many people have better accessibility with the project?
- How many people have poorer accessibility with the project?
- Do benefits/impacts accrue to any population groups more than others, e.g., people with a disability or on low incomes?
- Downs-Thomson Paradox is not considered The project will attract passengers away from public transport to driving. 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.
- 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 lower than the point estimate used?

c) Section 7 Assessment of construction impacts 4.2.3

- Impacts on travel times for all modes (driving, public transport, walk and bicycle) have not been assessed/reported. The construction activities will delay travellers in a number of ways: additional construction/workforce traffic; temporary road and lane closures; and speed limit reductions.

- The increased parking occupancy rates will mean additional time looking for parking.

- Cumulative construction impacts for the New M5 and other concurrent projects have not been modelled/reported. Only a cursory description of cumulative impacts is provided.

d) Section 8 Future conditions without the project

Has the impact that the forecast decreases in LoS will have on travel demand been fed back into the demand model? The decreases in LoS will reduce travel demand by influencing a number of long and short term travel choices:

- Home location choice;

- Work location choice;

- Destination choice;

- Mode choice;

- Departure time choice; and

- Route choice.

As such, it is unlikely that the future 'do minimum' scenarios will be as bad as claimed. We know that congestion is self-limiting – as LoS declines, travellers will adjust their travel behaviour/choices to avoid congestion.

Tables 69, 70, 74, 75, 77 and 78 do not include the base year (2012) values, so the future 'do minimum' scenarios cannot be compared with current conditions.

Table 79 WRTM screenline comparison between 2021 'without project' and 'with project' AWT volumes

Direction	Location	2021 'without project'	Share	2021 'with project'	Share	Change
Western Screenline						
Eastbound	Canterbury Road	23,643	22%	25,688	24%	9%
	M5 East Corridor (including M5 East Motorway and New M5)	57,764	54%	50,104	47%	-13%
	Stoney Creek Road	13,549	13%	19,230	18%	42%
	Forest Road / Queens Road	12,218	11%	12,108	11%	-1%
	Total	**107,174**		**107,129**		**0%**
Westbound	Canterbury Road	24,206	22%	25,895	24%	7%
	M5 East Corridor (including M5 East Motorway and New M5)	58,125	52%	48,424	45%	-17%
	Stoney Creek Road	13,496	12%	17,068	16%	26%
	Forest Road / Queens Road	16,513	15%	16,692	15%	1%
	Total	**112,340**		**108,079**		**-4%**

Tables 72, 73 and 76 use 2014 as the base year, instead of 2012 as used elsewhere in the EIS. To understand the impacts of the project, a consistent baseline must to be used.

An assessment of the impacts on walking and bicycle demand and travel times has not been provided.

e) Section 9 Future year traffic volumes and patterns

Tables 79, 80, 81 do not include the base year (2012) values, so the future 'with project' scenarios cannot be compared with current conditions.

Figures 67, 68, 69, 70, 71, 72 do not include the base year (2012) values, so the future 'with project' scenarios cannot be compared with current conditions.

f) Section 10 Future conditions with the project

Delays at on-ramps and off-ramps have been omitted from the travel time forecasts, so actual travel times will be significantly higher than those forecast.

The reported travel times savings have been selectively chosen to show only those routes where travel times are forecast to decline (i.e., the M5 itself). The impacts on travel times for adjacent routes have not reported, in particular Stony Creek Road, Canterbury Road Forest Road and Queens Road. Travel times on these routes will increase significantly due to the large increase in traffic diverting to avoid the M5 tolls.

An assessment of the impacts on walking and bicycle demand and travel times has not been provided.