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INQUIRY INTO IMPACT OF THE WESTCONNEX PROJECT

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Submission by:

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I do not work for, consult, own shares in or receive funding from any company or organisation that would benefit from the outcomes of this inquiry.

a. The adequacy of the business case for the WestConnex project, including the cost-benefits ratio

a.1 Financial business case

1. The NSW and Commonwealth Governments have so far injected more than $7 billion equity into the Sydney Motorways Corporation (SMC). Given cost increases, it is likely further substantial equity contributions will be needed.
2. In addition, the NSW Government has agreed to a free transfer of valuable public assets to SMC:
    a. The M4 motorway (between Parramatta and Homebush) – from 2017.
    b. The M5 East motorway (between King Georges Road and General Holmes Drive) – from 2020.
    c. The M5 West motorway (between General Holmes Drive and Prestons) – from 2026.

    The present value of these assets I estimate to be well over $3 billion.
3. In addition, the NSW Government has committed to funding additional capital works that will help to increase SMC's traffic volumes/toll revenues:
    a. Increasing the capacity of roads that feed into/out of SMC's interchanges, e.g., along the Alexandria to Moore Park corridor.
    b. Decreasing the width/capacity of roads that will compete with SMC's toll roads, including:
        i. Parramatta Road.
        ii. Sydney Park Road.

    The cost of these enabling works I estimate to be in the region of $500 million.
4. In addition, the NSW Government has funded much of the planning, design, administration and PR/communications – a cost that would normally be borne by the proponent of a private toll road (SMC in this case).
5. In addition, NSW Roads and Maritime Services has spent about $1.5 billion on property acquisitions.
6. I estimate total government/taxpayer funding of SMC is likely to be well over $13 billion (to date).

7. We will not know the value of SMC until bids for the 51% share are revealed.

8. If bids are in the region of $2 billion, this would value SMC at about $4 billion.

9. **This would give a financial benefit-cost ratio of:**
   4 / 13 = 0.31.

   This means a financial return of 31 cents for every $1 invested by the NSW Government on behalf of taxpayers.

10. In addition to these financial losses, there will be indirect costs to Treasury. In particular, increased public health costs due to:

    a. Significant increases in air pollution, which is associated with cardiovascular disease, respiratory disease and cancer.

    b. Children attending schools and childcare centres near the tunnel portals and smoke stacks will be exposed to higher concentrations of air toxins. Children are particularly vulnerable to air toxins while their lungs are still developing. Specific health risks for children include impaired lung and nervous system development.

    c. Users of the toll road tunnels will be exposed to high concentrations of air toxins, including diesel smoke which is a class 1 carcinogen (same as asbestos).

    d. Reduced levels of physical activity due to the encouragement of driving, and additional traffic discouraging walking (including to access public transport). Physical inactivity is a major risk factor for type II diabetes, heart disease and some cancers.

    e. Increased traffic noise, which is associated with stress and sleep loss.

    f. More people killed/seriously injured in road traffic crashes.

a.2 Economic business case

11. Governments do not usually invest in transport systems for purely financial reasons (as a private enterprise would); a low financial benefit-cost ratio is generally considered acceptable, if it can be demonstrated that a project has broader social benefits.

12. This is where an *economic appraisal* or *social cost-benefit analysis* comes in. In this assessment approach, the broader benefits and costs to society of a proposed project/policy are considered, with non-financial benefits and costs valued in monetary units (dollars). The sum of the benefits minus the non-financial costs is divided by the financial cost to give a social benefit-cost ratio.

13. When done well, social cost-benefit analysis can help to inform decision makers and stakeholders about the relative merits of alternative project proposals competing for scarce government funding. In theory, those with the highest social benefit-cost ratios offer the highest social benefits per dollar and should be prioritised.

14. However, in the business case for the WestConnex scheme [1], many of the costs are omitted, and many of the benefits are over-estimated. These are detailed in Tables 1, 2 and 3 below.

Table 1: Non-financial costs omitted

Travel time increases	The financing strategy for WestConnex involves imposing tolls on existing, free motorways: the M4 and M5 East (as well a toll on the M5 West from 2026, when the current concession was due to end). To avoid the new tolls, many motorists who currently use these motorways will switch to alternative (free) roads or public transport, in which case their journey times will increase. The cost of these travel time increases is not included in the business case.
Urban sprawl	Urban roadway expansion is known to contribute to urban sprawl, car dependency and the closure of local shops and services. The consequences of urban sprawl include: • Higher vehicle ownership costs. • Higher transport costs. • Reduced access to economic opportunities (employment/education). • Reduced access to services (shopping, medical care, etc.). • Reduced access to social opportunities (social isolation). • Loss of independence for those unable to drive (due to young age, old age, health issues, not being able to afford a car, etc.).
Physical inactivity	Urban roadway expansion is associated with an increase in sedentary travel (driving), and a decline in walking (including for access to public transport). Physical inactivity is a major risk factor for a number of non-communicable diseases, including: • Diabetes. • Heart disease. • Cancer.
Unproductive journey time	Urban roadway expansion is associated with a mode shift from public and active transport to driving. Those people who switch to driving can no longer use their travel time productively, e.g., for work, reading, fitness, etc.

Table 2: Non-financial benefits over-estimated

Hypothetical travel time savings	$12.9 billion (53%) of the claimed $24.3 billion of social benefits is the estimated value of 'hypothetical travel time savings'. This is based on the number of minutes of travel time that users would hypothetically save per day, and their hypothetical 'willingness to pay' for such a time saving. The inclusion of hypothetical travel time savings in urban transport business cases is controversial, because there is no empirical evidence that travel times decline in practice. Indeed, the average daily travel time in Sydney has been stable at about 80 minutes per person for decades, despite billions of dollars having been spent on new transport infrastructure in that time. It appears that when a faster transport option is made available, people opt to travel further, and keep their daily travel time the same. E.g., they move further from work, and travel to more distant destinations, e.g., shopping centres instead of local shops (i.e., urban sprawl). To ensure that their models do predict travel time savings, the WestConnex analysts have assumed that no one will move home, and no firms will relocate, after WestConnex becomes operational – and for the lifetime of the project. They also appear to have ignored waiting times at the traffic signals controlling access to the toll roads (ramp metering), leading to a significant under-estimation of future journey times.
Vehicle operating costs	$6.2 billion (26%) of the claimed $24.3 billion of social benefits is the estimated value of vehicle operating cost savings, based on the assumption that WestConnex toll road users will spend less on fuel and vehicle maintenance. Again, the analysts have ignored the likely increase in travel distances resulting from people moving home and choosing more distant destinations (induced demand), which would result in an *increase* in vehicle operating costs. They have also ignored the increase in vehicle operating costs for those people who will switch to using congested (free) suburban/residential streets, to avoid the new tolls on the (previously free) M4 and M5 East.

Journey time reliability	$1.5 billion (6%) of the claimed $24.3 billion of social benefits is the estimated value of improved journey time reliability, that is, the estimated amount of money people would hypothetically be willing to pay to reduce uncertainty in their journey times. Again, the analysts have ignored the decrease in journey time reliability for those people who will switch to congested suburban/residential streets, to avoid the new tolls on the M4 and M5 East.
Environmental impacts	$0.9 billion (4%) of the claimed $24.3 billion of social benefits is the estimated value of the forecast decrease in greenhouse gas emissions and toxic vehicle emissions. No road expansion project in history has resulted in a reduction in air toxin and greenhouse gas emissions. Again, the analysts have chosen to ignore the increase in travel distances resulting from people moving home and choosing more distant destinations (induced demand), which would result in an *increase* in vehicle emissions. They also appear to have ignored the increase in vehicle emissions from motorists who will switch to using congested (free) surface streets, to avoid the new tolls on the M4 and M5 East.

Table 1: Financial costs omitted/under-estimated

Value of M4, M5 East and M5 West	These motorways are being transferred to SMC for free. The opportunity cost (value the NSW Government could have fetched for them in a competitive privatisation) should have been included in the business case.
Enabling works to increase traffic/toll revenue	Increasing the capacity of roads that feed into/out of SMC's interchanges, e.g., along the Alexandria to Moore Park corridor. Decreasing the width/capacity of roads that will compete with SMC's toll roads, including Parramatta Road and Sydney Park Road.
Planning, design, administration and PR/communications	
Property acquisitions	NSW Roads and Maritime Services has spent about $1.5 billion on property acquisitions.

15. **Given the omitted financial/non-financial costs and inflated non-financial benefits, the social benefit-cost ratio for WestConnex in my opinion is well below one.**

    A social benefit-cost ratio below one indicates a very poor investment for the government on behalf of taxpayers, from a social/welfare perspective. A better social return could be achieved by (a) doing nothing, or (b) spending the funds on more worthwhile projects.

16. The business case does not say anything about how costs and benefits will be distributed among the NSW population. The few travellers who are willing or able to pay the new tolls may enjoy faster travel in the short term (until induced demand causes traffic to slow, as happened with the M2), but any benefit to them will be largely offset by the tolls. **I.e., the main beneficiary will be Sydney Motorways Corporation (and its future private owners)**.

17. The costs will be borne by the whole population, in terms of:

    a. Significant public funding diverted from more worthwhile causes, e.g.,

        i. Tax relief

        ii. Education

        iii. Health care

        iv. Regional roads, bridges, development

        v. Urban mass transit

    b. Increased traffic on local/suburban streets, due to toll avoidance and induced demand.

    c. Increased air pollution and noise levels.

f. The extent to which the project is meeting the original goals of the project as articulated in 2012

18. It is not clear which of the NSW Governments' strategic objectives the WestConnex proposal was developed to address. The project is a means without an obvious end.

19. An outsider can only speculate about what the ultimate objective of the project might be. Given that the Commonwealth funding application was made under the *National Freight Network* category, the main objective may have been to improve road freight productivity between Port Botany/Sydney Airport, and distribution hubs/markets in Western Sydney. However, there is already a high-capacity motorway along this corridor (the M5), albeit one that is not appropriately priced to maximise its efficiency and productivity at peak times (the M5 East is free, while there is a cashback scheme for the M5 West). In addition, there is an under-utilised rail freight line connecting Port Botany,

Enfield and Macarthur in South-West Sydney. Also, the new airport at Badgerys Creek will provide direct air freight access to Western Sydney in the future.

20. There are more cost-effective ways of achieving the freight objective. For example, introducing appropriate peak time user charges on existing free motorways, such as the M4 and M5 (which will be tolled as part of the WestConnex project anyway), or introducing High Occupancy Toll (HOT) lanes on existing motorways. These are express lanes reserved for multi-occupant vehicles, and single occupant vehicles/trucks on payment of a toll. This is a very low-cost alternative, because it requires very little new infrastructure. HOT lanes have been used since the 1990s in the United States to improve the efficiency of existing roads.

21. A set of objectives for the WestConnex project was contrived *after* the NSW Government and Commonwealth had already committed to funding it. These were included in the Strategic Business Case released in November 2015 (more than a year after the NSW and Commonwealth funding commitments were made).

22. These retrospective objectives are listed and discussed in Table 4. Even though they were clearly written to suit the project, none can be achieved with the project as currently proposed. *Alternative projects/policies that could meet these objectives have never been assessed or costed by the NSW Government, or by the Commonwealth (Infrastructure Australia).*

Table 4: Retrospective project objectives

Objective	**Comment**
Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways, western Sydney and key places of business across the city.	There is no evidence that expansion of urban road capacity contributes to economic growth in developed countries that already have well-developed transport systems [2]. On the contrary, building urban motorways hinders economic development, because of consequential urban sprawl, increased transport costs, increased health costs, and resulting productivity losses. There are more effective ways to support economic growth.

Objective	Comment
Relieve road congestion to improve the speed, reliability and safety of travel in the M4, M5 and Central Business District (CBD)/airport/port corridors, including parallel arterial roads.	Urban road expansion is known to *increase* traffic and congestion, because of induced demand. With WestConnex, congestion on the existing M4 and M5 motorways will decline in the short term. But this will not be the result of increased capacity; rather, it will be due to the introduction of tolls on these motorways, which will reduce demand. Congestion on parallel arterial roads will increase, because: (a) many drivers who currently use the free motorways will change route to the parallel arterial roads, to avoid the tolls; (b) the overall increase in road capacity will encourage more vehicle use (induced demand); and (c) in the case of Parramatta Road (parallel to the M4), it will be narrowed from six to four general traffic lanes. If the objective is to relieve congestion, there are more cost-effective ways of doing so (e.g., mobility management, congestion pricing, HOT lanes). Many city governments overseas have a policy of "allowing congestion to occur", because they understand that there can never be enough road capacity to accommodate the underlying demand for driving, and congestion is a way to ration/manage that demand [3]. They concentrate instead on *giving people realistic alternatives to sitting in traffic*.

Objective	Comment
Cater for the diverse travel demands along these corridors that are best met by road infrastructure.	There is already more than sufficient road capacity along these corridors to cater for trips that are best made by road (e.g., tradespeople with tools/materials). The reason these road corridors are currently at capacity is because of the thousands of driving trips that could be made using alternative transport modes. These discretionary trips could be discouraged through better mobility management (e.g., road pricing, HOT lanes), and investing in efficient mass transportation systems (e.g., passenger rail).
Create opportunities for urban renewal, improved liveability and public and active transport improvements along and around Parramatta Road.	The NSW Government's modelling for WestConnex Stage 1B (M4 East) [4] shows that congestion on Parramatta Road will actually increase, because: (a) many drivers who currently use the free M4 motorway will switch to Parramatta Road, to avoid the new toll; (b) the overall increase in road capacity will encourage more vehicle use (induced demand); and (c) Parramatta Rd will be narrowed from six to four general traffic lanes. A noisy, congested arterial road with poor air quality is a recipe for *urban blight*, not urban renewal. Urban renewal can be more effectively stimulated with efficient mass transit (e.g., light/heavy rail, BRT) and transit oriented development (e.g., mixed use and walkable neighbourhoods).
Enhance the productivity of commercial and freight-generating land uses strategically located along the corridor.	There are more cost-effective ways to enhance the productivity of commercial and freight-generating land uses, e.g., (a) Discourage discretionary car use on road freight routes (mobility management). (b) Increase use of rail/intermodal freight. There is spare capacity on the Port Botany rail freight line. (c) Relocate freight-generating land uses to more appropriate locations.

Objective	Comment
Fit within the financial capacity of the State and Federal governments, in partnership with the private sector.	To finance the WestConnex project, the NSW Government sold/gave away valuable assets: NSW Ports, electricity network, M4, M5 East and M5 West. As per item (9) above, I estimate the financial return to the NSW Government will be 31 cents for every $1 spent.

Objective	Comment
Optimise user-pays contributions to support funding in a way that is affordable, equitable and fair.	User-pays toll roads are inherently unequitable and unfair, because the tolls are less unaffordable for poorer people. To avoid the new tolls on the M4 and M5, many poorer people will switch to free roads such as Parramatta Road and Stony Creek Road, meaning their commute times will be much longer and less reliable. The distance-based tolling regime will further disadvantage poorer people, because they are less able to afford a home close to employment and may have no choice but to drive long distances. In addition to being able to afford tolls, wealthy people have other options for easing their commutes, such as moving closer to work, or moving closer to a rail station. The overall toll regime for the metropolitan area will be manifestly unfair: some motorways will be free or have cashback schemes (M1, M5 South-West, M31), while others will be tolled (M2, M4, M5 East, M7). Motorists driving the same distance on motorways each day will pay vastly different amounts, depending on where they live and work. The new tolls on the M4 and M5 will make it even more difficult for poorer people living in the Western suburbs to access economic and social opportunities. If the objective is to make access to economic and social opportunities more equitable, there are more effective approaches, e.g., • Investment in jobs for Western Sydney. • Affordable housing close to existing jobs and rail stations. • Investment in mass transportation.

Objective	Comment
Provide the ability to deliver an additional harbour road crossing and northern beaches motorway, the Western Harbour Tunnel and Beaches Link, which should be able to connect into the WestConnex motorway.	The 'Western Harbour Tunnel' and 'Beaches Link' are obviously project proposals, not policy objectives. They are means without defined ends.
Support improved connectivity between Sydney, the Sutherland Shire, and the Illawarra; with the ability for the 'Gateway to the South' project to connect into the WestConnex motorway.	Again, the 'Gateway to the South' project is obviously a project proposal (means), not a policy objective (end). There is already a high capacity road corridor linking Sydney, Sutherland Shire, and the Illawarra. There is significant scope to improve mobility along the existing road corridor, as well as to improve mass transit (passenger rail) and rail freight connectivity. This can be achieved without the WestConnex project. There is a private sector proposal to construct a passenger and freight rail line between Sydney and the Illawarra. This would be funded by value capture, as opposed to government subsidy [5].

References

[1] NSW Government, "WestConnex updated strategic business case," Sydney, Australia, 2015.

[2] D. Banister and Y. Berechman, "Transport investment and the promotion of economic growth," *J. Transp. Geogr.*, vol. 9, no. 3, pp. 209–218, 2001.

[3] C. Standen, "Sydney needs congestion on its roads so we don't have complete gridlock," *The Sydney Morning Herald*, Sydney, 11-May-2016.

[4] AECOM and GHD, "M4 East Environmental Impact Statement," 2015.

[5] M. O'Sullivan, "Fast-train bonanza: big investors in race to build major new Sydney rail projects," *The Sydney Morning Herald*, Sydney, 30-Jun-2016.

[6] C. Standen, "The way we justify investments in road projects like WestConnex doesn't add up," *The Sydney Morning Herald*, Sydney, 01-Dec-2015.

Appendix

'We need better and fairer methods of assessing proposed public works', Christopher Standen, The Sydney Morning Herald, December 1, 2015 [6].

The Baird government has published an updated business case for its controversial WestConnex tollway scheme, which it plans to build through inner Sydney. The claimed benefit-cost ratio has declined from 2.55 to 1.71, due to a $6 billion cost blowout taking the total cost to $17 billion.

But the economy will still benefit by $1.71 for every dollar spent, right? Well, that is what the Turnbull and Baird governments would have us believe, with federal Minister for Cities Jamie Briggs boasting the scheme will "inject $20 billion worth of benefits into the national economy".

This is stretching the truth. When economists talk about economic benefits, they don't just mean benefits to the national economy, but also social or environmental benefits for which they can estimate a dollar value. They have invented ways of monetising just about everything, from clean air to human life. Such non-market benefits do not necessarily help the national economy, in terms of increasing gross domestic product, incomes or productivity, or reducing the deficit. Nonetheless, they can be good for society and improve our gross national happiness.

The approach used in Australia for assessing the "economic benefits" of urban transport projects was devised by highway agencies in the 1960s to justify the massive cost of urban motorways. This has given us the urban sprawl, car-dependence and high transport costs with which we are encumbered today.

The main failure of this approach is that it places significant value on hypothetical travel time savings. In NSW, it is normally assumed travellers would value saving one hour of travel time at $15 to $48. For WestConnex, the estimate has been inflated to $21 to $70. This results in a total travel time saving benefit valued at $13 billion, allowing the government to claim a positive benefit-cost ratio. However, in the case of personal travel, this is purely a social benefit that will not help the national economy. Rather, economists argue it will increase gross national happiness by giving some of us more leisure time.

Or will it? The average daily travel time in Sydney has been stable at about 80 minutes a person for decades, while the average trip distance has increased substantially. In this time, billions have been spent on tollways. We're spending more than ever on tolls, yet have not gained one minute of leisure time. The higher speed of tollways has simply encouraged us to move further from work, drive more, and make longer trips than before, for example, visiting shopping malls instead of local shops. It has also encouraged freight to shift from rail to urban roads.

Some economists argue we don't actually value reductions in travel time, rather the freedom to live further from work, and drive wherever and whenever we like in free-flowing traffic. Unfortunately, satisfying this desire for everyone in a city of 5 million people is not feasible. There can never be enough road and parking space.

Furthermore, the way in which benefits and costs are distributed among the population is ignored. If completed, WestConnex would be used by less than 1 per cent of the NSW

population each day. Any benefit that users gain will be offset by the hefty tolls. Non-users will pay dearly, in terms of poorer air quality, more traffic on existing roads, lower urban amenity, and less government funding for more worthwhile things. The losers will not be compensated. Who wins? Mainly trucking magnates, large construction corporations, tollway operators, consultants and bankers.

What about the jobs this scheme will create? Well, the same jobs would be created by investing $17 billion in infrastructure that actually improves our economy and standard of living.

So, how could transport project assessment be improved to give us efficient and world-class urban transport, and more liveable cities?

First, projects must be assessed before they are approved. The political decision to proceed with WestConnex before it was assessed put pressure on the economists to manipulate the business case. Alternative project and policy proposals for meeting strategic objectives should be assessed concurrently. Equity impacts should be reported and considered by decision makers, in addition to benefit-cost ratios.

Knowing we will not reduce our average daily travel time even if given the opportunity, much less value should be attributed to hypothetical travel time savings. Rather, changes in accessibility to economic and social opportunities should be valued. This, after all, is the underlying purpose of most transport. The consequential costs of induced sprawl should also be included.

Improvements to the quality of our travel time – making it less stressful, more enjoyable or healthier – should be considered. As should the ability for us to stay connected and work while travelling.

Finally, the assessment and prioritisation of transport projects must be undertaken by an independent body that is immune to politics, and is not influenced by lobbying and political donations.