

16 October 2017

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Ms Carolyn McNally
Secretary
NSW Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Dear Ms McNally

WestConnex Stage 3 M4-M5 Link Environmental Impact Statement

Please find attached the City of Sydney's (the City) submission on the WestConnex Stage 3 M4-M5 Link Environmental Impact Statement (EIS).

The City strongly opposes WestConnex including the Stage 3 M4-M5 Link.

WestConnex Stage 3 EIS should not receive planning consent

The WestConnex Stage 3 M4-M5 Link (the Project) should not receive planning consent.

Key reasons include:

- The strategic rationale is flawed and the Project will not achieve its stated goals as it does not improve access to Sydney Airport or port facilities, and does very little to improve access for commuters from Western Sydney;
- The Project will undermine the economic competitiveness of the Sydney City Centre;
- The EIS is deficient and does not adequately incorporate information or safeguards on impacts on the community, especially noise, air quality and health impacts for local residents;
- The submission is too vague and not detailed enough to meet approval requirements (let alone tendering) and it would diminish the standing of the Department of Planning and Environment (the Department) and the Minister to establish the acceptability of this level of detail as a precedent.
- No comprehensive assessment of alternatives has been undertaken as required by the Department of Planning and Environment Secretary's Environmental Assessment Requirements SSI 16_7485 (SEARS) and the Proposal relies on flawed and outdated information from the *WestConnex Updated Strategic Business Case*;
- The costs outweigh the benefits and the Project is not financially viable unless the Sydney Gateway, Western Harbour Tunnel and Beaches Link and F6 Extension are delivered – yet no business case, funding commitment or timeline is provided for these other projects. The Project will create road network failures that may be used to justify further privately operated motorways.

Major shortcomings in the EIS

The City has identified a comprehensive array of shortcomings and anomalies in the EIS which will be apparent to the Department.

There are major flaws in the strategic traffic modelling process. Traffic projections have direct and significant influence on a range of key aspects of the EIS including air quality modelling, noise and vibration modelling, safety and benefits estimates. It also has a major bearing on toll and revenue projections, critical to assess the financial viability of the Project. For these reasons, substantial errors in the strategic traffic projections compound throughout the whole EIS.

EIS based on a concept design that cannot be adequately assessed

The Proponent has developed the EIS based on a concept design to which it makes no commitment to and which by its own admission is likely to change significantly during subsequent design development. It is not possible, therefore, for the EIS to fulfil its statutory function and consider all the likely impacts. This is a major and fundamental shortcoming and a potential legal exposure.

EIS fails to fully evaluate health impacts

The EIS fails to fully evaluate the long-term health impacts of the Project and the related surface traffic increases. For example, the EIS identifies five unfiltered ventilation stacks to be constructed in Inner Sydney and the widening of a number of local surface roads with increases in traffic volumes. The dual effects of induced traffic and toll avoidance will see traffic volumes increase and congestion worsen, increasing exposure to particulate matter across metropolitan.

Lack of meaningful consultation

A large section of the community had just eight weeks to read, understand and respond to the EIS. At around 7,700 pages the EIS is written in a way that makes it difficult to make any sense of the complex and impenetrable statements relating to benefits. The exhibition period of just eight weeks despite requests for a longer period, while meeting statutory requirements, does not constitute meaningful community consultation. Further, the EIS does not incorporate or respond to community and stakeholder submissions on the preceding WestConnex Stage 3 M4-M5 Link Concept Design.

Major technical issues in the EIS need to be addressed

The City has allocated significant resources to reviewing the EIS and has identified major shortcomings and significant errors in the document and processes.

The City requests that the Department work with the Proponent to explain (*with supporting evidence*) the identified issues in advance of issuing any Submissions Report. The City is also looking to the Department to comprehensively address all matters raised by the City in its 'Response to Submissions' report. Failing this, the City will be seeking resolution of these matters through alternative channels.

In addition, if approval is given to WestConnex Stage 3, it is imperative that sufficient resources are provided to ensure timely and full compliance with all of the Minister's Conditions of Approval.

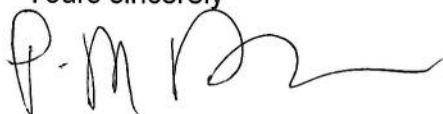
In Closing

The NSW's Government's decision to progress WestConnex must not proceed given the robust and evidence-based objections from local government, industry members, academics and the community.

The Premier of NSW, the Honourable Gladys Berejiklian holds ultimate responsibility for WestConnex. Given her roles as Minister of Transport, Treasurer and now as Premier Ms Berejiklian will be held accountable for her role in promoting this project despite major flaws in its planning, development, approval and delivery.

Should you wish to speak with a Council officer about the City's submission, please contact Sebastian Smyth, Executive Manager City Access & Transport on 9246 7703 or at ssmyth@cityofsydney.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'P. M. Barone', with a long horizontal flourish extending to the right.

Monica Barone
Chief Executive Officer

Encl.

WestConnex Stage 3 M4-M5 Link Environmental Impact Statement

City of Sydney Submission



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Sydney2030/Green/Global/Connected
city of villages



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Executive Summary

The WestConnex Stage 3 M4-M5 Link should not be approved

This submission outlines the City of Sydney's (the City) robust and evidence based objection to the WestConnex Stage 3 M4-M5 Link (the Project) which should not receive planning consent for the following reasons:

- The strategic rationale is flawed and the Project will not achieve its stated goals as it does not improve access to Sydney Airport or port facilities or improve access for commuters from Western Sydney;
- The Project will undermine the economic competitiveness of the Sydney city centre;
- The Environmental Impact Statement (EIS) is deficient and does not adequately incorporate information or safeguards on impacts on the community, especially noise, air quality and health impacts for local residents;
- No comprehensive assessment of alternatives has been undertaken as required by the Department of Planning and Environment Secretary's Environmental Assessment Requirements SSI 16_7485 (SEARS) and the proposal relies on flawed and outdated information from the *WestConnex Updated Strategic Business Case*;
- The costs outweigh the benefits and the Project is not financially viable unless the Sydney Gateway, Western Harbour Tunnel and Beaches Link and F6 Extension are constructed – yet no business case, funding commitment or timeline is provided for these other projects. The Project will create road network failures that may be used to justify further privately operated motorways;

If the Project is granted planning consent, the City requests the Department of Planning and Environment (DPE) to require Roads and Maritime Services (the Proponent) to provide further information or impose conditions that address the following issues:

- The enforceability of consent conditions in light of the unusual relationship between the NSW Government and the SMC which has undermined the ability of the DPE to effectively ensure compliance. This has been illustrated in previous stages of WestConnex;
- The substantial risks associated with Rozelle Interchange, the level of which is without precedent internationally – and failure of which could lead to construction stretching across a decade with unacceptable impacts on local residents;
- The noise, air quality and health impacts on surrounding residents;
- Major flaws in the strategic traffic modelling process that result in projected traffic outcomes that are likely to be very different to the actual future traffic outcomes;
- The risks to surface road networks from traffic generated by the Project, and a clear indication how the Proponent will manage traffic volumes, speeds and impacts to preserve the liveability of surrounding areas.

The Project does not reflect Government aims

The M4-M5 Link is Stage 3 the outdated WestConnex project. While other global cities have abandoned large scale inner city motorway construction as inefficient and

ineffective, the NSW government continues to cling to this 1950s traffic-centric solution.

The EIS provides no assessment of strategic alternatives for road solutions, public transport solutions, travel demand management solutions or a combination of all. It relies on dated assessments provided in the *WestConnex Updated Strategic Business Case* and documentation prepared for previous WestConnex planning submissions.

The Government's own emerging *Future Transport Strategy* calls into question the strategic justification of WestConnex. Through its *Technology Roadmap* process, Transport for NSW (TfNSW) is consulting the public on the future of private car ownership and use, heralding technology and market changes that are expected to dramatically reduce vehicle kilometres travelled. But at the same time, SMC is building a metropolitan wide, over-scaled and extraordinarily expensive network of toll roads which will leave future generations paying off billions of dollars of private debt.

The NSW Government's own *Sydney City Centre Access Strategy* aims to prioritise limited street space in Australia's Global City Centre for public transport and people walking and cycling. This is key to improving access and amenity as the city centre grows. The Project threatens this outcome.

The Project is based on a flawed logic and delivers false promises

Since WestConnex was first conceived in 2012, RMS' justification for the M4-M5 Link has changed considerably but can still only be described as flawed at best and misleading at worst.

- The Project does not provide a 'missing link' between the M4 and M5. The M7, A6 and A3 roads already provide this function but have not been considered in the EIS. Strategic modelling undertaken for the City confirms that there is very little demand for a link between the M4 and M5 where WestConnex proposes it.
- The Project can no longer claim to provide a direct motorway connection to Sydney Airport and Port Botany because the Sydney Gateway, the proposed connection between this \$17 billion roadway and the Port and Airport, is no longer part of the WestConnex project, has no business case¹ and no delivery date.
- The Project can no longer purport to meet the government's key objective of traffic reductions (and consequent urban renewal) along the Parramatta Road corridor, because the reintroduction of tolls on the M4 has actually resulted in traffic increases on Parramatta Road, not the promised reductions.
- WestConnex in general, and the Project specifically, does not meet the needs of people from Western Sydney. The great majority of people in the West who travel to the city centre do so by public transport, and 90 per cent of people in the West do not travel to the city centre on a regular basis at all.

¹ Hon Stuart Ayres, Minister for Western Sydney, Minister for WestConnex and Minister for Sport at Portfolio Committee No. 5 Industry and Transport, Western Sydney, WestConnex and Sport. 6 September 2017 (Budget Estimates)

- The EIS reveals that the real purpose of the M4-M5 Link is to enable the construction of major tollways to the North Shore, Northern Beaches (Beaches Link) and Southern Suburbs (F6 Extension).
- The Project will not ease congestion. The *WestConnex Updated Strategic Business Case* states that traffic induced by the Project equates to around 0.3 per cent of the total traffic movements in the Sydney Metropolitan Area. Even though this is considered an underrepresentation of induced traffic, it would still mean that an additional 50,000 vehicles a day will move through the areas surrounding WestConnex and this number will be much larger if the proposed future stages of WestConnex eventuate.
- The Project will not improve travel times to the Sydney city centre. The Rozelle Interchange locates numerous tollway portals in one of the most congested parts of Sydney's road network, and will directly impact the Anzac Bridge and the western edge of the city centre. This will further delay buses and service and delivery vehicles needed to keep the city centre globally competitive.
- EIS figures indicate the Project would lead to traffic volumes some 30 per cent higher than the capacity of the Anzac Bridge.
- The cited 'key customers' that would benefit from the Project (long distance, freight, businesses) do not reflect the bulk of vehicles which would actually use the Project, that is, single occupancy commuter vehicles. The key customers could be served by a far more modest project, given they represent an extremely small proportion of projected traffic on the Project
- RMS is now promoting WestConnex as a bypass rather than a connector to the Sydney city centre, so it does not need to link to the Anzac Bridge. This route is already congested and there is no capacity to accommodate additional vehicles in the Sydney city centre.
- The EIS does not provide 'without project' traffic estimates for 2033 which means that they cannot be compared to the 2033 'with project' and 'cumulative' scenarios. This omission casts the validity of the EIS into doubt as it could be assumed that this is because the modelling outputs showed little benefits (or actual worsening) accruing to the Project relative to the base case.

Despite the evident weaknesses in, and fundamental changes to, the assumptions underpinning the Project's strategic justification, the business case for WestConnex has not been re-examined.

The business case relies on proposed future stages to justify unfeasible preceding stages

The *WestConnex Updated Strategic Business Case* relies on benefits accruing in the latter stages of the WestConnex program as justification for WestConnex progressing. The City's analysis shows that Stages 1 and 2 will not return benefits that will outweigh costs.

There is significant risk the Sydney Gateway will not be delivered and it is clearly not within the \$16.8bn funding envelope identified for WestConnex². The removal of the Sydney Gateway from the WestConnex program raises significant questions around

² Hon Stuart Ayres, Minister for Western Sydney, Minister for WestConnex and Minister for Sport at Portfolio Committee No. 5 Industry and Transport, Western Sydney, WestConnex and Sport. 6 September 2017 (Budget Estimates)

the program benefits, and specifically those apparently accruing from the M4 – M5 Link.

It is now generally accepted by the transport community that road building is not a long term solution to road congestion in urban areas. Two aspects of WestConnex further evidences this:

- The *WestConnex Updated Strategic Business Case* indicates that congestion on Sydney's road network will have returned to current levels just eight years after the M4-M5 Link opens.
- The reintroduction of the toll on the M4 resulted in a decline in traffic on the M4 and increased congestion on Parramatta Road.

The Environmental Impact Statement does not meet the requirements of the SEARs

The quality of the EIS is insufficient to respond adequately to the Secretary's Environmental Assessment Requirements (SEARs), let alone meet the *Desired Performance Outcomes* of the SEARs.

RMS, as the Proponent, has taken the unusual and unhelpful approach of developing the EIS based on a concept design to which it makes no commitment and which by its own admission is likely to change significantly during subsequent design development. It is not possible, therefore, for the EIS to consider all the likely impacts.

The EIS appears to have focused more on achieving planning approvals prior to the NSW Government's sale of 51 per cent of the SMC - rather than accurately assessing likely environmental impacts.

The community had just eight weeks to read, understand and respond to the EIS. The Hon. Stuart Ayres, Minister for WestConnex, stated the EIS *is an incredibly complicated, detailed and technical document*³. At around 7,500 pages the EIS is written in a way that makes it difficult to make sense of the complex and impenetrable statements relating to benefits.

The SEARs requires an assessment of the likely risks to public safety with particular attention to pedestrian safety. The EIS completely fails to address this requirement.

An exhibition period of just eight weeks, while meeting statutory requirements, does not represent meaningful community consultation. Further, the EIS does not incorporate or respond to community and stakeholder submissions on the preceding *WestConnex Stage 3 M4-M5 Link Concept Design*.

Unusual planning approvals and compliance arrangements do not safeguard communities

As the Project Proponent, RMS will be responsible for complying with the Project conditions of consent. The RMS has commissioned SMC to finance, deliver and operate WestConnex on behalf of the Government.

³ Hon Stuart Ayres, Minister for Western Sydney, Minister for WestConnex and Minister for Sport at Portfolio Committee No. 5 Industry and Transport, Western Sydney, WestConnex and Sport. 6 September 2017 (Budget Estimates)

The company structures put in place prevent public scrutiny of SMC through the *Government Information Public Access Act* despite SMC being wholly owned by Government and funded by taxpayers.

The relationship between RMS and SMC will be further complicated when SMC is sold to the private sector. Should the Project be approved the responsibility for complying with the Minister's Conditions of Consent, which are intended to protect the community, will be passed from Government to SMC, and then to a design and build contractor. This will reduce the level of protection for the community through the design development and construction phases.

Government is, for all intents and purposes, seeking planning approval to sell the Project to the private sector and then discharging its responsibility and control for the delivery of the Project. Local Governments affected by previous stages of WestConnex have experienced the RMS effectively abandoning its responsibility for the impacts of WestConnex on the basis of them being 'outside its control'. RMS has already, in many public meetings, advised the public and the City that it has no control over, or, in many cases, any knowledge of, SMC activities.

WestConnex will deliver lose–lose traffic outcomes for Sydney

The WestConnex Stage 3 M4-M5 Link on its own does not attract enough traffic to justify its construction.

The traffic projected to travel along the M4-M5 Link would only fill it to around one third of its available capacity during peak periods. This significantly undermines the justification for building the mainline tunnel with four lanes in each direction.

The Project needs additional motorway links (that are not part of the Project and not included in the EIS) to generate sufficient traffic to financially justify its construction. The proposed Western Harbour Tunnel and Beaches Link would see traffic volumes increase, bringing volumes closer to the capacity of the mainline tunnel. This would lead to significant impacts across the surface road network. The resulting congestion would negatively impact surrounding communities, much of the inner city and road network within the Global Economic Corridor.

Without this additional traffic, SMC faces an outcome similar to the Cross City Tunnel where there is insufficient traffic to meet its financial obligations and the Government (having a 49 per cent share of the Project) would be subject to ongoing payouts.

Both problems – not enough traffic to justify WestConnex Stage 3 on its own and the high traffic volumes and congestion that would occur if the additional motorway links are added – will render the surface and tunnel road network dysfunctional for business, the community and the region as a whole.

The Project will have major impacts on the community

Traffic flowing to and from the Project will have unacceptable impacts on inner Sydney communities. The traffic already generated by the St Peters Interchange will increase further, bringing major additional impacts to the surrounding community.

It will also increase demand from the West, causing further congestion on the 'free' alternative routes such as Parramatta Road and the Great Western Highway. This has already been evidenced with Stage 1A, the widening of the M4.

The cumulative impact of noise, low harmonic vibration and air quality has direct and indirect adverse impacts. People are less inclined to venture outside and partake in activities, they are more stressed, which has measurable negative cardio vascular effects, and are more likely to become depressed. The impacts of traffic flow on social interaction have been known and documented since the 1960s. Social interaction is eroded as traffic volumes increase.

The New M5 construction has already seen the complete loss of over 100 homes and over 1000 mature trees. The construction of the St Peters Interchange and local road widening has placed the local community under enormous pressure due to noise, odours, traffic management, construction workers taking on-street parking and lengthy detours. The M4-M5 Link construction will place additional stress on this same community.

Road expansions to deal with the traffic impacts of the Project have not been identified

The M4-M5 Link will, like other sections of WestConnex, require the extension of surface roads but the NSW Government has adopted a 'wait and see' approach to identifying these impacts and costs

These major works would affect numerous road corridors and could include: intersection and road widening, banning parking in local centres, removal of trees, footpaths and cycling facilities.

This shortcoming means that the **EIS does not provide sufficient detail of the likely impacts on communities**, nor does it provide the people of NSW with a true reflection of the level of taxpayer funding required to deliver the identified works (as they will not be funded by the Proponent).

The Rozelle Interchange is without precedent internationally and constitutes a major risk

The M4-M5 Link includes a major underground interchange at Rozelle, the scale and complexity of which has never been seen anywhere in the world. The EIS provides insufficient detail on the delivery and potential impacts of the Rozelle Interchange. . It does it deal with the major safety and assurance risks that accompany a project of this scale.

The EIS suggests that the Project will be delivered in two parts (mainline tunnels and Rozelle Interchange), meaning there is a very real possibility that it will either be partially delivered, or the Project will be staged in a way that construction impacts occur over a decade.

The EIS barely considers the scenario where the M4-M5 link may operate without the Rozelle interchange for an extended period of time (there is a short paragraph at the end of the traffic appendix). Given the uncertainty around the complexity and affordability of the Rozelle interchange, this is a real possibility and the EIS should examine it fully.

Building congestion to justify building more tollways

The Project now includes the Iron Cove Link and connections to a future Western Harbour Tunnel. These 'add-ons' were not considered fully in the *WestConnex*

Updated Strategic Business Case and do not reflect the WestConnex Project objectives.

The EIS acknowledges the Project will add significantly to congestion on the Anzac Bridge, meaning that traffic will come to a standstill and create demand for the Western Harbour Tunnel. It essentially builds congestion to justify future private tollway projects

The EIS puts the Western Harbour Tunnel forward as a major justification for the M4-M5 Link but provides no information on demand, project costs, delivery times or business case it. The Western Harbour Tunnel will do little to serve long distance or freight traffic, predominantly serving car commuters between the suburbs of the lower North Shore and the Inner City.

Major impacts on the Anzac Bridge and Sydney City Centre

The EIS for the M4 East, released in 2015, included the statement that 'Due to capacity constraints on the Anzac and Sydney Harbour bridges the provision of this connection [M4-M5 Link] is not possible without an additional harbour crossing'. The Project will place an unacceptable burden on the Anzac Bridge, increasing travel times from Rozelle into the Sydney city centre for all drivers, including essential services and buses. Buses account for over 24 per cent of all trips entering the City Centre via the Anzac Bridge during the AM Peak Hour⁴.

Businesses located in the Sydney city centre rely on fast and reliable access to a large and diverse potential workforce. Buses are a key mode of access to the city centre and evidence shows that slower bus travel times impact negatively on the city centre economy.

The City has developed the draft *Central Sydney Planning Strategy*. This strategy identifies future employment and floor space requirements to support Sydney's continued status as a global city and to contribute to the Government's employment growth targets. Over the next 30 years central Sydney will accommodate an additional 100,000 workers. Without improved levels of access and quality of service for people walking, cycling and using public transport this growth will not occur.

The Sydney city centre cannot accommodate additional vehicle traffic, nor does it need this to achieve significant growth and economic development. TfNSW data confirms that the number of vehicles entering the Sydney city centre during the morning peak hour remained stable between 2002 and 2012⁵ and has decreased by some nine per cent in the two years since construction of light rail began⁶. The number of trips by public transport, by contrast, increased by some 38 per cent between 2002 and 2012⁷ and another 10 per cent in the two years since construction of light rail commenced⁸.

Walking is the dominant mode of access in the City Centre (accounting for over 92 per cent of trips within the centre) and continues to grow. Footpaths and pedestrian crossings are already struggling to cater for demand and WestConnex will bring

⁴ Sydney City Centre Access Strategy, (NSW Government, 2013)

⁵ Sydney City Centre Access Strategy, (NSW Government, 2013)

⁶ Coordinator General of the Sydney City Centre

⁷ Sydney City Centre Access Strategy, (NSW Government, 2013)

⁸ Coordinator General of the Sydney City Centre

more vehicle traffic to the city centre, impacting on the safety, amenity and travel times of people walking, cycling and using public transport.

The EIS does not adequately account for impacts on health and air quality

The EIS identifies five unfiltered ventilation stacks to be constructed in Inner Sydney. In addition local surface roads will be widened and traffic volumes will increase. The dual effects of induced traffic and toll avoidance will see traffic volumes increase and congestion worsen, increasing exposure to particulate matter across metropolitan Sydney.

Research has shown that any exposure to particulate matter generated by traffic is detrimental to health: there is no safe exposure level. It is a classified carcinogen. Further, children, the elderly, people with chronic disease and people otherwise generally susceptible are particularly at risk of the health effects of traffic related particulate matter⁹. The EIS fails to fully evaluate the long-term health impacts of the Project and the related surface traffic increases. The *WestConnex Updated Strategic Business Case* also fails to take the full costs of healthcare, increased mortality and the resultant economic impacts into account.

Vehicles are becoming increasingly efficient, but more rigorous emissions standards incorporating airborne particulate matter (PM) have only been in place in Australia since 2013 and only apply to emissions; there are no measures in place to reduce the significant non-emission vehicle contribution to particulates. In NSW around 78 per cent of the vehicle fleet was manufactured before these regulations were put in place¹⁰. As two-thirds of the NSW population¹¹ lives in metropolitan Sydney in relatively close proximity to major roads, vehicles are one of the most important sources of PM exposure in NSW and therefore a significant contributor to negative health outcomes.

The adverse health impacts of living close to busy roads is well documented and studies looking specifically at Sydney have shown consistent results¹². These health impacts include increased mortality, respiratory and cardio-vascular disease, and adverse birth outcomes. Many other health impacts have also been associated with living near busy roads including cancers. While larger particulates are concentrated in road corridors, smaller particulates are more evenly spread across the urban area as the smaller particles remain airborne.

Legacy impacts and worsening intergenerational equity

The Project fails to take into account the whole of life impacts of the motorway. The EIS assesses impacts over a 15 year period; to 2033. This is not consistent with the

9 Hime, D., Cowie, C. and Marks, G. (2015) Review of the health impacts of emissions sources, types and levels of particulate matter air pollution in ambient air in NSW (for NSW Environmental Protection Agency and NSW Ministry of Health, Environmental Health Branch). Woodcock Institute of Medical Research, Centre for Air Quality and Health Research and Evaluation, University of Sydney.

10 http://www.rms.nsw.gov.au/about/corporate-publications/statistics/registrationandlicensing/tables/table113_2017q2.html (accessed 20 September 2017)

11 <http://www.planning.nsw.gov.au/projections> (accessed 20 September 2017) and <http://www.abs.gov.au> (accessed 20 September 2016). Calculation based on Greater Sydney ERP at 30 June 2016 and 2016 NSW Population Projections data.

12 Hime, D., Cowie, C. and Marks, G. (2015) (as above)

35 plus year toll concession periods that will apply across the WestConnex project, the M5 and M5 East.

WestConnex tolls will increase at the rate of CPI or 4 per cent - whichever is higher until 2043, and keep growing at the rate of inflation until 2060. This means that in the current economic climate, tolls would be increasing at twice the rate as salaries – placing an increasing level of financial stress on people using WestConnex.

The lack of long term analysis in the EIS fails to fully assess the impacts of the Project and the costs to future generations. Today's children, who are still too young to hold a drivers licence, will have retired by the time the concession period across the WestConnex suite of toll roads comes to an end. Within this same timeframe TfNSW's own *Future Transport* work is predicting major technological shifts that will change the way we travel.

A missed opportunity

The Government has missed a significant opportunity to be truly visionary, recognising and embracing technological change that offers the potential to revolutionise urban travel, support economic agglomeration and deliver on health and wellbeing outcomes.

Instead the people of NSW will be left with an intrusive inner city motorway that escalating tolls will make unpopular and technological change will render redundant.

Other global cities are investing in fast and efficient public transport that connects homes and jobs, supports the decentralisation of commercial investment and develops a resilient and equitable city for future generations.

WestConnex will not deliver jobs: the logistics sector will continue to suffer, with no additional capacity between Port Botany and the multi-modal logistics hubs established at great cost in the West on the back of the promise of WestConnex.

1. Introduction

1.1. Purpose of this document

This document comprises the City's submission on the WestConnex Stage 3 M4-M5 Link EIS.

1.2. Structure of this document

For legibility and ease of use, the City's submission has been structured as follows:

- Sections 2 to 30 reflect the chapter numbering of the EIS.
- **Key Findings** have been summarised in blue boxes at the beginning of each section.
- **Planning conditions required to avoid or mitigate impacts** have been incorporated in green boxes within the appropriate subsection which provides the context and information relating to the planning condition.
- **Matters to be addressed** have been incorporated in yellow boxes within the appropriate subsection which provides the context and information relating to the planning condition.
- Information supporting the key findings, planning conditions to avoid or mitigate impacts and matters to be addressed is provided in the body of each section.

1.3. The City of Sydney's Position on the EIS

- The City strongly objects to WestConnex, including the Stage 3 M4-M5 Link, for the following reasons:
 - WestConnex fails to meet the Government's primary objectives of providing a direct motorway connection between Western Sydney and Sydney Airport and Port.
 - WestConnex undermines the economic competitiveness of the Sydney city centre
 - There is a lack of strategic justification for WestConnex. No feasible alternatives have been developed or assessed.
 - WestConnex will have unacceptable impacts on health and air quality. The EIS identifies an additional five unfiltered ventilation stacks to be constructed in Inner Sydney. In addition local surface roads will be widened and traffic volumes will increase.
 - There is a lack of alignment between WestConnex and the NSW Government's priorities and policies.
 - WestConnex will create a number of legacy impacts and worsen intergenerational equity
 - The costs outweigh the benefits and the Project is not financially viable unless the Sydney Gateway, Western Harbour Tunnel and Beaches Link and F6 Extension are constructed – yet no business case, funding commitment or timeline is provided for these other projects. The Project will create road network failures that may be used to justify further privately operated motorways;

- There will be major impacts on the Anzac Bridge (projected to carry some 30 per cent more traffic than its ceiling capacity) and city centre resulting from the Project. The EIS forecasts major impacts on bus travel time and reliability.
- Construction of the M4 East and New M5 appears to be used as part of the justification for the M4-M5 Link – constructing a motorway to justify more motorways
- The Project objectives do not align with the objectives outlined for WestConnex
- The EIS does not contain sufficient safeguards for the community. Government is seeking planning approval to sell the Project to the private sector and discharging its responsibility and control for the delivery of the Project.
- There will be major negative impacts on the community as a result of the Project.
- The NSW Government has missed a significant opportunity to be truly visionary, recognising and embracing technological change that offers the potential to revolutionise urban travel, support economic agglomeration and deliver on health and wellbeing outcomes.
- Instead the people of NSW will be left with an intrusive inner city motorway, that escalating tolls will make unpopular and technological change will render redundant.
- Other global cities are investing in fast and efficient public transport that truly connects homes and jobs, supports the decentralisation of commercial investment and develops a resilient and equitable city for future generations

1.4. Context – The Project

- The Project and the context in which it sits is summarised below.



Source: WestConnex M4-M5 Link EIS

- The EIS is for the third of five stages of WestConnex that the Government has so far committed to. Stage 1 completed the widening of the M4 and largely completed a tunnel to Haberfield from the end of the current M4; Stage 2 comprised the M5 upgrade and New M5 including the St Peters Interchange; Stage 3, the M4-M5 Link, is the subject of this EIS.
- The EIS is based on the spurious assertion that the M4 and M5 need linking, when they are already linked by the M7, A6 and A3. The A3 is the primary eastern link between the two motorways and is shown in the State Road network hierarchy as the M4-M5 Connector.
- The M4-M5 Link enables the expansion of the WestConnex network to include the proposed Western Harbour Tunnel, Beaches Link and F6. These motorway projects were not part of the WestConnex business case and are not priority projects in any State or Federal roads plan.
- The EIS has been prepared based on a concept design only. A final design has not been adopted. The EIS cannot then adequately canvas all the impacts that may arise.
- Crucially, to make the sale more attractive, the tunnels between Haberfield and St Peters will be built independently of the Rozelle Interchange.

1.5. Background – the WestConnex Business Case

- Key criticisms of the Business Case focus on the limitations of the process. Searle and Legacy¹³ raise fundamental issues about the way infrastructure business cases in general are developed, and WestConnex in particular.
- The first of the limitations identified by Searle and Legacy is the manner in which strategic transport and land use planning considerations are evaluated in business cases. They found, in relation to WestConnex that:
 - The Business Case did not factor in the impact that longer total journey lengths will have on urban sprawl, which will have a flow-cost for infrastructure and servicing.
 - The Business Case included benefits from WestConnex supporting more compact commercial land use ('agglomeration benefits'), when this outcome is generally not the result of motorway investment, and is unlikely to be in the area served by WestConnex Stage 3.
 - The Business Case did not attempt to cost the reductions in public transport use, especially the loss of fare revenue.
 - Ancillary road projects necessitated by WestConnex, such as the Alexandria-Moore Park Connectivity Upgrade (which could cost over \$1 Billion), should have been included in the Business Case.
 - Impact on property values, costs of noise during construction, and loss of business should all have been costed and included in the Business Case
 - Loss of heritage to the whole community (not just property owners) should have been costed and included in the Business Case.

¹³ Searle, G and Legacy, C, 2017, *Do the business cases for major Australian transport infrastructure adequately incorporate planning concerns?* Draft Paper for the State of Australian Cities Conference, Adelaide, November 2017

- The second category of limitations is the manner in which other planning issues are excluded from cost-benefit analysis, which is a key component of developing a business case. Searle and Legacy found:
 - There was no analysis of equity impacts of the infrastructure investment and the tolling regime, given the lower socio-economic status of many areas of Western Sydney, and the requirement for potential users of WestConnex to own or pay for access to a private vehicle to be able to use it.
 - The localised impact of air quality around the ventilation outlets should have been accounted for.
 - Impacts associated with loss of amenity from reduced access to open space should have been accounted for.
- Searle and Legacy attribute some of these issues with the Business Case to the decision of the NSW Government to include WestConnex in the State Infrastructure Strategy and other land use and transport plans before a business case was developed. There was no incentive to explore alternatives or to fully explore the costs and benefits.
 - This process has been described as 'locked in'. Commitment escalates because a project has been announced and appears in numerous policy documents.
 - WestConnex is a clear example of government 'locking in' its commitment before sufficient analysis had been undertaken.
- With the Government fully 'locked-in' to WestConnex, the issues and inadequacies identified in the Updated Strategic Business Case are also reflected in the Stage 3 M4-M5 EIS.
- The Strategic Business Case for the full WestConnex project, made up of the M4 widening and M4 East, New M5, M4-M5 Link, King Georges Road Interchange upgrade and Sydney Gateway, was completed in August 2013 but only a summary was released.
- After the Strategic Business Case, the WestConnex project changed significantly. An Updated Strategic Business Case reflecting an updated concept design was published in 2015.
- SGS Economics and Planning (SGS) undertook a detailed assessment of the Updated Strategic Business Case and reached the following conclusions:
 - The Benefit Cost Ratio (BCR) as misrepresented as 1.71 when it was 1.64.
 - The Business Case did not identify Stage 3 WestConnex, connecting the M4 to the M5, as a priority for 'filling in the missing links in Sydney's motorway network'.
 - Modelling for post-2031 conditions was not undertaken, however benefits were assumed to continue until 2052.
 - The transport modelling used in the Business Case was likely to have underestimated the impact of extra traffic induced by the additional capacity, which would significantly reduce the BCR.
 - The Business Case did not reflect global approaches to congestion management, such as investment in public transport and travel demand management.
 - The Business Case suggested WestConnex would help renew Parramatta Road by reducing traffic on it, despite the modelling showing that many parts of it would carry more traffic, not less.

- Travel time savings were relied on as a key component of the positive BCR. A significant proportion of these purported benefits are from travel time savings which were within the margin of error of modelling and would be so small that motorists may not notice them (and therefore would not value them). Research¹⁴ has found that business travellers are more concerned with predictability and reliability of travel times than they are with actual travel time.
- Insufficient justification was provided for the significant travel time savings, and economic benefits, factored into the BCR for business and light commercial vehicles – for instance there was insufficient analysis of origins and destinations of these trips.
- The construction costs were considerable, with the implication being that if these increase, by even a small percentage, the BCR would reduce accordingly.
- Other costs were not accounted for, such as reduced amenity on urban development, loss of land for higher value activities, and the health costs of potentially reduced public transport use.

1.6. Requirements

The City takes its role as a key stakeholder for the Project very seriously and has allocated significant time and resources to reviewing and providing evidence based feedback to the EIS.

As a minimum, the City requires that the Department of Planning and Environment (DPE):

- Provides detailed responses to each **Key Finding** provided in this document.
- Include the **Planning Conditions** in the Minister's Conditions of Approval.
- Set out actions to respond to each **Matter to be addressed** provided in this document.
- Ensure all issues raised in this submission are addressed explicitly in the submissions report prepared by RMS.

If DPE disputes any of the above the City requires that it provides evidence and explanation to support its position by the time it issues the Submissions Report.

¹⁴ Roads Australia, 2013, Building the Case for Customers.

2. Assessment Process

2.1. Key Findings

Key Findings
<ul style="list-style-type: none">WestConnex is an extremely large, multi-staged project that could eventually affect much of the Sydney Metropolitan area but its assessment is being rushed through in advance of the release of major strategic planning documents aimed at coordinating planning for the Sydney Metropolitan Area e.g. TfNSW's <i>Future Transport</i> and the Growth Centres Commission's <i>Towards our Greater Sydney 2056</i>.
<ul style="list-style-type: none">The separate exhibitions and approvals as well as design changes throughout the process make assessment of WestConnex extremely difficult for individual stages and near impossible the scheme as a whole.
<ul style="list-style-type: none">It is not clear how the detailed assessment of the Project, following any approval and subsequent detailed design and planning, will be undertaken and by whom as the <i>'detail of the design and construction approach presented in this EIS is indicative only based on a concept design and is subject to detailed design and construction planning to be undertaken by the successful contractors'</i>.
<ul style="list-style-type: none">The EIS fails to demonstrate how the performance outcomes in the SEARs will be achieved.<ul style="list-style-type: none">The traffic projections and benefits provided in the EIS are far from 'balanced'. They have been 'cherry-picked' to present the Project in a positive light.No alternatives have been developed nor has any analysis of alternatives been undertaken.There is a lack of transparency in terms of key inputs to the traffic modelling process (which form the basis of the analysis and assessment of many key impacts associated with the Project).

2.2. SEARs response is inadequate

- The *Environmental Planning and Assessment Regulation* and DPE practice note states the Proponent must ensure an EIS complies with the SEARs so decision-makers, government regulators and government advisory agencies are able to understand and assess a project and its impacts without seeking further information. However despite a huge volume of documentation, the EIS does not provide sufficient quality information to allow for a good understanding of the Project and its impacts by regulators such as local government.
- The EIS fails to demonstrate how the stated performance outcomes outlined in the SEARs will be achieved. Key examples:

- The SEARs specifies that assessment must be transparent. The WestConnex Road Transport Model (WRTM) is the basis of the analysis and assessment of many key impacts. However, basic information has not been provided about the assumptions that have been applied or the forecasts associated with populations and transport demands, including for major changes resulting from the Western Sydney Airport, planned intermodal freight terminals or the Western Sydney Employment area.
- The EIS is required to demonstrate that the process for assessment is 'balanced' however the traffic projections and benefits provided in the EIS have been carefully selected and worded to imply positive outcomes that are at best optimistic and at worst misleading.
- **The SEARS require analysis of feasible alternatives to the Project.** No feasible alternatives have been developed and no analysis of alternatives has been undertaken. While Section 4.4 of the EIS purports to cover *Strategic Alternatives*, it does little more than offer a discussion of why an alternative was not pursued
- The EIS is required to 'provide confidence that the Project will be constructed and operated within acceptable levels of impact' but the traffic impacts on the Anzac Bridge and city centre have not been demonstrated.
- The SEARs require that the Project be developed with meaningful and effective engagement during design. However, the final design will be unknown until a contract is signed and there is no ongoing mechanism for community engagement

2.3. Status of State Significant Infrastructure application

- The status of the application is not clear. The EIS states that 'detail of the design and construction approach presented in this EIS is indicative only based on a concept design and is subject to detailed design and construction planning to be undertaken by the successful contractors.'
- However, the EIS does not indicate that the application is a staged State Significant Infrastructure (SSI) application under section 115ZD of the EP&A Act, which requires subsequent applications and detailed assessment.
- It is not clear how the detailed assessment of the Project, following any approval and subsequent detailed design and planning, will be undertaken and by whom.

2.4. Controlled activity under Airports Act 1996

- The EIS states that the Project has been designed to satisfy Department of Infrastructure and Regional Development requirements for structures such as ventilation facilities and equipment moving and lighting and plume rise from ventilation facilities may be deemed a controlled action under section 183 of the Airports Act 1996.
- The EIS notes that a plume rise assessment would be carried out in accordance with relevant Civil Aviation Safety Authority requirements prior to the operation of the Project to determine whether it's a controlled action.
- This results in the deferral of full assessment of this issue post- State approval and project construction.

2.5. Critical State Significant Infrastructure declaration

- The EIS states that a request has been made to the Minister for Planning for the Project to be declared Critical State Significant Infrastructure (CSSI). The DPE website notes that a CSSI declaration has been made but does not specify the date of declaration.
- We note WestConnex Stage 1 M4 East was declared CSSI 5/12/14 with EIS exhibition in September 2015. The timing for the CSSI declaration is inconsistent with M4 East.
- The Rozelle interchange would override land intended for employment and affordable housing in The Bays Precinct which is identified as a critical precinct in the Government's *Plan for Growing Sydney*. Permission for the Rozelle interchange must therefore be refused.

Planning conditions required to avoid or mitigate impacts

Condition 2.1

- a. The Proponent must prepare detailed Design Reports for all elements of the Project, including all surface works, addressing the following:
 - i. Detailed description of the proposed works and how the detailed design of each element relates to the element as described in the EIS.
 - ii. Detailed assessment of the potential social, economic and environmental impacts of each element and how this assessment relates to the assessment of these impacts contained in the EIS.
 - iii. Each report must be submitted to, and approved by, the Secretary of the DPE prior to the commencement of relevant works. In considering each report, the Secretary is to consult with relevant Councils.
- b. Within 6 months of this approval, the Proponent must submit to the Secretary a schedule of Design Reports outlining each report to be submitted and timing for submission of each report.

Condition 2.2

- a. The Proponent must submit a Staging Report to the satisfaction of the Secretary in consultation with relevant Councils prior to the commencement of works. The Staging Report must provide:
 - i. how the SSI would be staged, including general details of work activities associated with each stage and the general timing of when each stage would commence;
 - ii. details of the relevant conditions of approval, which would apply to each stage and how these shall be complied with across and between the stages of the SSI;
 - iii. detailed evidence of consultation with relevant Council and Urban Design Directorate (UDD) prior to finalisation of the Report.
 - iv. Actual dates of commencement of each stage (day, month, year).
- b. Where staging of the SSI is proposed, these conditions of approval are only required to be complied with at the relevant time and to the extent that they are relevant to the specific stage(s).

Condition 2.3

- a. The Proponent must ensure that any strategy, plan, program, or other document, required by the conditions of this approval is submitted to the Secretary no later than one month prior to the commencement of the relevant stage(s), if the SSI is to be staged, (as identified and defined in the Staging Report), unless otherwise agreed by the Secretary.
- b. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that:
 - i. the activities on site are covered by all relevant and suitable strategies, plans or programs;
 - ii. the relationship of this stage to any future stages is made clear;
 - iii. the trigger for updating the strategy, plan or program is explained.

3. Strategic context and project need

3.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The EIS does not set out the specific transport needs addressed by the Project. Nor is it demonstrated that projections in growth in population and employment correlate to traffic demand increase along the proposed M4-M5 Link. As a result it is not possible to assess the Project's ability to meet those needs.• The cited 'key customers' that would benefit from the Project (long distance, freight, businesses) do not reflect the bulk of vehicles which would actually use the Project which are single occupancy commuter vehicles. The key customers could be served by a far more modest project, given they represent an extremely small proportion of projected traffic on the Project.
<ul style="list-style-type: none">• The EIS suggests that the Project forms part of an integrated planning solution. This is simply not true. While WestConnex might integrate with the wider motorway network, no evidence is provided demonstrating that it integrates with the wider road network – let alone the broader transport and land use system. WestConnex contradicts and undermines a number of key NSW Government Strategies, including the <i>Long Term Transport Master Plan</i>, <i>Future Transport</i> and <i>Sydney City Centre Access Strategy</i>. Further, the role of WestConnex in relation to public transport and freight rail is not considered.
<ul style="list-style-type: none">• The EIS asserts that WestConnex will be a catalyst for urban renewal along major corridors but provides no evidence to support this. The <i>Parramatta Road Urban Transformation</i> project has been put on hold by the NSW Government largely due to uncertainties relating to traffic capacity on Parramatta Road following the construction of WestConnex. The Rozelle Interchange will prevent redevelopment in the Rozelle Rail Yards. This area has been identified by the NSW Government as a major opportunity for urban renewal for over 20 years.
<ul style="list-style-type: none">• The EIS narrowly defines congestion as 'traffic congestion' rather than delays to reliable and efficient access to human capital, goods and services which reduces economic activity and productivity. This results in an incorrect and misleading assessment.• There is no evidence presented (or available) that building motorways reduces traffic congestion over the long term.• Assertions relating to improvements for freight services rely on the Sydney Gateway Project, which is not part of WestConnex, and which poses significant threats to the crucial freight rail connection to Port Botany.• The EIS refers to benefits from road projects that are not part of the Project's scope. The full costs, benefits and impacts of these projects need to be considered in a transparent process.

- According to the EIS, buses travelling to the city centre will be slower, despite the construction of a tunnel between Iron Cove and the Anzac Bridge. This is an unacceptable outcome of such a major, supposedly 'integrated' transport project.
- The Project objectives include enabling the construction of motorways over the harbour and to the northern beaches. However, the traffic impacts of these motorways in Rozelle have not been assessed. These projects were not part of the business case that justified the WestConnex in the first place.
- The EIS states that the Project will improve connections to the Sydney Airport and Port Botany. It will not. The Sydney Gateway does not form part of the WestConnex project. Without the Sydney Gateway, connections between WestConnex (St Peters Interchange) and Sydney Airport and Port Botany will be via congested surface roads in Botany and Mascot.

3.2. No project justification

- The EIS (Section 3.2) does not set out the specific transport needs addressed by the Project but states additional road capacity is required to meet projected increases in trips. It does not set out the trips, desire lines, demand corridors or growth that the WestConnex project is addressing. As a result it is not possible to assess the Project's ability to meet these needs. Nor is it demonstrated that projections in growth in population and employment correlate to traffic demand increase along the proposed M4-M5 Link. TfNSW data confirms that the number of vehicles entering the Sydney Centre during the morning peak hour was stable between 2002 and 2012¹⁵ and in fact decreased by some 9 per cent in the two years since construction of light rail began¹⁶. The number of trips by public transport, by contrast, increased by some 38 per cent between 2002 and 2012¹⁷ and another 10 per cent in the two years since construction of light rail commenced¹⁸.
- The EIS does not set out a credible strategic rationale for WestConnex. There is no informed discussion on the economic geography of Sydney, and the role an integrated transport system has to play in meeting the needs of businesses and residents.
- The cited 'key customers' that would benefit from the Project (long distance, freight, businesses) do not reflect the bulk of vehicles which would actually use the Project (single occupancy commuter vehicles). The key customers could be served by a far more modest project, given they represent an extremely small proportion of projected traffic on the Project.

¹⁵ Sydney City Centre Access Strategy, (TfNSW, 2013)

¹⁶ Coordinator General of the Sydney City Centre

¹⁷ Sydney City Centre Access Strategy, (TfNSW, 2013)

¹⁸ Coordinator General of the Sydney City Centre

3.3. The Project is not integrated with the NSW Government's Strategic Planning process

- The EIS suggests that the Project forms part of an integrated planning solution. This is simply not true.
- While WestConnex might integrate with the wider motorway network, no evidence is provided demonstrating that it integrates with the wider road network – let alone the broader transport and land use system. For example the Project will increase traffic entering the Sydney city centre, Australia's pre-eminent business centre. RMS has only just commenced work to identify which roads serving WestConnex portals will need to be upgraded to deliver large numbers of vehicles to and from the Project. It is therefore impossible to properly understand the environmental impacts – the very purpose of the EIS.
- The Greater Sydney Commission is currently preparing strategic plans (six District Plans and the Greater Sydney Region Plan) for Sydney's long-term future and TfNSW is currently developing Sydney's *Transport Future*. All motorway projects should be placed on hold until finalisation of these plans.
- The Project focuses on 'catering for traffic growth' (P4.15). This contradicts and undermines the NSW Government's *Long Term Transport Master Plan* and commitments expressed on the *Future Transport* web site which commit to an integrated approach to congestion management focussed on land use planning, demand management, public transport investment and 'a coherent whole of network planning strategy'.
- The WestConnex program of works has been described as an integrated transport network solution. However, WestConnex's role and interdependency with public transport and freight rail is not considered. The recent Government commitment to a Metro West requires a rethink on the need for WestConnex, particularly as the WestConnex Updated Strategic Business case outlines a mode shift from public transport to the toll road the would undermine rail investment in this corridor.
- The Western Sydney Airport is due to commence construction next year with completion in 2026. Demand for air travel in Sydney is set to double over the next 20 years. Initial patronage is said to be 10 million passengers per year. Information should be provided demonstrating how (or if) the Project caters for travel to the new airport and the likely lessening of demand to the current airport.

3.4. The Project does not enable urban renewal

- The EIS misrepresents the structure of the Global Economic Corridor (GEC) and overstates the relationship of the Project to centres within it by claiming the Project serves centres in the north of the GEC when it does not.
- The EIS asserts that WestConnex will be a catalyst for urban renewal along major corridors. No evidence is provided to back this assertion. The Sydney experience suggests that roads do not act as urban renewal catalysts as evidenced by Canterbury Road after the M5 East was built and the Cumberland Highway corridor after the M7 was completed.
- The *Parramatta Road Urban Transformation project* has been put on hold by the NSW Government for a number of reasons, including the uncertainties relating to traffic capacity on Parramatta Road following the construction of WestConnex. To claim this as a benefit is misleading. The Project predicts increased traffic

congestion on Parramatta Road, prior to any renewal,, which is clearly not a benefit,.

- There is relatively limited urban redevelopment potential along the small section of Victoria Road that the Project would decongest, and this section has not been classified by the NSW Government as redevelopment area. To claim this as a benefit is misleading.
- The Rozelle Interchange will prevent major redevelopment of the Rozelle Rail Yard and surrounding former industrial land. This area has been identified by the NSW Government as a major opportunity for urban renewal for over 20 years. The Rozelle Interchange should not go ahead.

3.5. Claims congestion will be eased are incorrect and misleading

- The EIS narrowly defines congestion as 'traffic congestion' rather than delays to reliable and efficient access to human capital, goods and services which reduces economic activity and productivity. This results in an incorrect and misleading assessment.
- The method and logic used to develop and assess the Project is similar to methods that have delivered numerous motorways around Australia that have not only failed to ease congestion, but have made it significantly worse.
- There is no evidence presented (or available) that building motorways reduces traffic congestion over the long term. No major urban arterial road project, without carefully considered and implemented pricing signals, has succeeded in easing congestion for more than a few years. This is acknowledged in planning disciplines, on the *Future Transport* website and has been stated by the current Minister for Transport and the current Premier (during her time as Shadow Minister for Transport).
- The EIS forecasts increases in freight volumes without offering evidence as to how the Project enables this. Assertions relating to improvements for freight services rely on the Sydney Gateway, which is not part of WestConnex, and which poses significant threats to the crucial freight rail connection to Port Botany.
- The EIS refers to benefits from road projects that are not part of the Project's scope. The full costs, benefits and impacts of these projects need to be considered in a transparent process.
- The EIS asserts that the M4-M5 link would complete the orbital road network between Western Sydney and the eastern gateways of Port Botany and Sydney Airport. That orbital already exists in the form of the 110km Sydney Orbital - the M2, M7, M5, Eastern Distributor, Harbour Tunnel, Gore Hill Freeway and Lane Cove Tunnel.

3.6. The Project will slow down public transport

- The EIS states that buses travelling to the city centre will be slower, despite the construction of a tunnel between Iron Cove and the Anzac Bridge.

3.7. Rozelle and Iron Cove Interchanges do not achieve project objectives and do not link M4 East and New M5

- The Rozelle and Iron Cove interchanges are not required to meet the Project objective of linking the M4 East and New M5 and should not be included in the

Project. Existing motorways (Cross City Tunnel and Eastern Distributor) would provide suitable road capacity to avoid the city centre.

- To the west are the M7, A6 and A3 connections. There has been no modelling provided investigating whether, with appropriate upgrades, these connections might provide far more cost effective and time efficient connections, particularly given their alignments would service multiple demand corridors.
- The Project objectives include enabling the construction of a motorway across the harbour (Western Harbour Tunnel) and to the Northern Beaches (Beaches Link). However, the traffic impacts of these future tollway projects have not been assessed around Rozelle in the operational modelling process. Further, these future projects were not part of the Updated Strategic Business Case that justified WestConnex in the first place, nor are they mentioned in the overall WestConnex objectives. The Proponent appears to be planning and justifying WestConnex on the run is making it up as they go along.

3.8. Unplanned, unfunded Sydney Gateway benefits claimed for Project

- The EIS states that the Project will improve connections to the Sydney Airport and Port Botany. It will not. The Sydney Gateway does not form part of the WestConnex project. Without the Sydney Gateway, connections between WestConnex (St Peters Interchange) and Sydney Airport and Port Botany will be via congested surface roads in Botany and Mascot. As the connection is unresolved, it is impossible to determine the effect on demand of the unknown pricing regime that will apply to the Sydney Gateway, nor how much travel time will be incurred – which might actually negate the proposed travel time savings.

3.9. Project failure to meet Project objectives

Table 1. brings together an assessment of key areas where the Project fails to meet the objectives outlined in the EIS.

Table 1. Project failure to meet Project objectives

Project Objective	Why the project does not meet objectives
Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways with Western Sydney and places of business across the city.	<p>The Project does not improve connections to international gateways of Port Botany and Sydney Airport. It relies on this traffic filtering through surface streets that are already congested.</p> <p>The EIS provides no evidence to show that long term economic growth is dependent on improved motorway access, nor that investment in other transport options would not better support Sydney's long term economic growth</p> <p>There is very little capacity to accommodate additional vehicle access to Sydney and Parramatta city centre. At the same time, NSW Government planning transport</p>

Project Objective	Why the project does not meet objectives
	policy promotes access to key centres of business by non-car modes
Relieves road congestion so as to improve the speed, reliability and safety of travel on the M4, M5 and Sydney city centre /Sydney Airport/Port Botany corridors, including parallel arterial roads.	<p>The traffic modelling that informs the projected changes to traffic congestion, speed, reliability and safety is inadequate and cannot be relied on.</p> <p>The improvements projected are smaller than the degree of accuracy of the modelling process used.</p>
Cater for the diverse travel demands along these corridors that are best met by road infrastructure.	<p>The cited 'key customers' that would benefit from the Project (long distance, freight, businesses) do not reflect the bulk of vehicles which would actually use the Project (single occupancy commuter vehicles). The key customers could be served by a far more modest project.</p> <p>The assertion that 'the transport demands of these key customers are best served by an efficient motorway connection' is a baseless assertion which lacks evidence.</p> <p>This calls into doubt the Project's potential to achieve this objective.</p>
Create opportunities for urban renewal, improved liveability, and public and active transport improvements along and around Parramatta Road.	<p>The key urban development project (<i>Parramatta Road Urban Transformation</i>) and public transport project (Parramatta Road Interim Transit) have both been put on indefinite hold by the NSW Government with no commitment made to light rail, Bus Rapid Transit or urban redevelopment on Parramatta Road.</p> <p>This reduces the Project's potential to achieve this objective.</p>
Enhance the productivity of commercial and freight-generating land uses strategically located near and along transport infrastructure.	The cited improvements for access by commercial vehicles between Western Sydney and Sydney Airport and Port Botany rely on the Sydney Gateway which does not form part of WestConnex and is currently unfunded by Government.

Project Objective	Why the project does not meet objectives
<p>Fit within the financial capacity of the State and Federal Governments, in partnership with the private sector.</p>	<p>The EIS provides no evidence of how the Project would be funded, nor of the risks of the proposed financing model to State and Federal Government.</p> <p>It is understood that the toll risk of the Project is being borne by the NSW Government, which, should toll revenue fall short, would place significant burden on future generations of tax payers and threaten the ability for the NSW Government to fund other important aspects of the State's economy such as education, health, community services and non-motorway transport.</p> <p>This calls into doubt the Project's potential to achieve this objective.</p>
<p>Optimise user pays contributions to support funding in a way that is affordable, equitable and fair.</p>	<p>No evidence is provided as to how the Project would be affordable, equitable and fair. At the most fundamental level:</p> <ul style="list-style-type: none"> • It only provides an option for people who are able to drive and can afford to pay the toll. By the same token, it would favour people able to drive and afford tolls. • It does not provide an option for people using public transport or active modes for transport. <p>It is understood that half the toll risk of the Project is being borne by the NSW Government. Should the toll revenue fall short, it will place significant burden on future generations of tax payers and threaten the ability for the NSW Government to fund other aspects of the State Economy such as education, health, community services and non-motorway transport. This is not equitable.</p>
<p>Integrate with the preceding and proposed future stages of WestConnex projects without creating significant impacts on the surrounding environment or duplicating any potential issues across the construction periods.</p>	<p>The EIS has not identified the impacts of future stages of WestConnex projects in terms of capacity upgrades on roads that will experience increases in traffic volumes due to WestConnex. These upgrades (such as road widening, local parking removal and intersection widening) will have material impacts on the surrounding areas and communities, but the EIS provides no information by which to understand or assess these impacts.</p>

Project Objective	Why the project does not meet objectives
Provide the ability for an additional Sydney Harbour tunnel road crossing, the Western Harbour Tunnel and Beaches Link (subject to approval), to connect to WestConnex.	<p>The physical infrastructure might provide the ability for an additional Sydney Harbour tunnel road crossing, the Western Harbour Tunnel and Beaches Link, but the EIS has made no case for these additional motorway connections nor how they could be viably funded.</p> <p>This was not an objective of the WestConnex project when it was originally described in 2012.</p>
Support improved connectivity between Sydney, the Sutherland Shire, and the Illawarra, with the ability for the proposed future F6 Extension to connect to WestConnex.	<p>The EIS has made no case for these additional motorway connections nor how they could be viably funded. They were not part of the WestConnex project when it was originally described in 2012. The Proponent appears to be adding objectives that justify further motorway construction.</p> <p>There is no additional capacity to accommodate additional vehicle travel within the Sydney city centre and given the limited capacity within the centre, there is ample existing arterial road connectivity to provide vehicle access to/from it.</p>

Matters to be addressed

Matter 3.1

- The BCR (p. 3-20) includes notional costs and benefits for the Sydney Gateway project. These are unable to be assessed given the lack of a clear and costed concept. Determination of the EIS should not proceed until there has been an analysis of the revised BCR once a Sydney Gateway concept design is released.

Matter 3.2

- A separate analysis of the likely impacts of the Project and related works in the Green Square area be undertaken before the Project is determined.

4. Project development and alternatives

4.1. Key Findings

Key Findings
<p>Strategic Alternatives</p> <ul style="list-style-type: none">• No feasible alternatives have been developed and no analysis of alternatives has been undertaken.• The SEARs require an analysis of any feasible alternatives to the Project. While Section 4.4 of the EIS purports to cover <i>Strategic Alternatives</i>, it does little more than offer a discussion of why an alternative was not pursued.• The basic question that the people of NSW need answered by the EIS is: for the same or lower cost of the Project, could we do something that is different to the Project that will deliver outcomes that are as good or better? The EIS does not provide an answer.
<p>Project evolution and design requirements</p> <ul style="list-style-type: none">• The apparent lack of will within the NSW Government to reconsider or modify the Project to deliver better outcomes with less financial risk constitutes a major risk for the people of NSW.

4.2. No strategic alternatives were assessed

- The basic question that the people of NSW need answered by the EIS is:
For the same or lower cost of the Project, could we do something that is different to the Project that will deliver outcomes that are as good or better?
- The SEARs require analysis of feasible alternatives to the Project. No feasible alternatives have been developed and no analysis of alternatives has been undertaken. While Section 4.4 of the EIS purports to cover *Strategic Alternatives*, it does little more than offer a discussion of why an alternative was not pursued.
- It is impossible to separate the impacts of WestConnex Stage 2 from the additional roads that it is clearly aiming to facilitate – a Western Harbour Tunnel, a Beaches Link, the Sydney Gateway, a southern F6 road of some description, the proposed Alexandria-Moore Park Connectivity Upgrade. Most of these projects have involved little to no planning or development and there is no evidence they are appropriate solutions for identifiable problems in these corridors.
- There is insufficient investigation of alternatives eg rapid transit investment, peak pricing on existing roads, increased investment in rail freight.
- Construction of the M4 East and New M5 appears to be used as part of the justification for the M4-M5 Link – this is just constructing motorway to justify more motorways.

- The EIS says that the M4-M5 link would complete the orbital road network between Western Sydney and the eastern gateways of Port Botany and Sydney Airport (p4.4). That orbital already exists in the form of the 110km Sydney Orbital - the M2, Lane Cove Tunnel, Gore Hill Freeway, Sydney Harbour Tunnel, , Eastern Distributor, M5, and M7., , and.

4.3. Alternative road projects must be assessed

- The EIS purports to canvas alternatives to the Project. However ,better use of existing road infrastructure has not been thoroughly analysed as a feasible alternative. The EIS only refers to existing RMS programs. An analysis of urban road projects recommended in the *State Infrastructure Strategy Update 2014* should be conducted as strategic alternatives including:
 - Smart Motorways investments on the M4, the Gore Hill Freeway and Eastern Distributor
 - Upgrading the Sydney Coordinated Adaptive Traffic System (SCATS)

4.4. Real integrated transport measures must be assessed

- There is no evidence of scenario modelling being used to allow testing of the ability of different packages of integrated transport measures to achieve outcomes. TfNSW's *Long Term Transport Masterplan* states that integrated approaches are required to manage congestion.
- Even without scenario modelling, there is no evidence of detailed corridor planning. This is a major fault in the Project's development now that rapid transport options such as Sydney Metro City and Southwest are being constructed, and Metro West is in planning. Additional rail freight network improvements and intermodal facilities should also be considered.
- The EIS considers 'catering for traffic growth' at 4.15 whereas the *Long Term Transport Master Plan* outlined an integrated approach to congestion management, focussed on land use planning, demand management, public transport investment and 'a coherent whole of network planning strategy'.
- The EIS states that the 'WestConnex program of works has been developed to provide an integrated transport network solution' (p4.1). However, the Project deals only with roads. The role of public transport, and in particular, the Sydney Metro network, is not considered. The Project does not deliver an integrated transport network solution.
- The EIS states that 'there are no feasible strategic public transport or freight alternatives to the Project that, on their own, would meet the diverse range of needs for travel in the Sydney metropolitan area'. It is clear that a package of measures is needed but has not been considered.
- The EIS states that *Sydney's Bus Future* (TfNSW 2013a) proposes to redesign the Sydney bus network to meet current and future demands by providing rapid service routes to 'connect major centres along transport routes with mass transit demand' and that 'new bus connections would take advantage of WestConnex'. There is no evidence provided that WestConnex is pivotal to that approach, and by increasing traffic in a bus-rich area, it will affect the efficiency of bus services.

4.5. Travel demand management options must be assessed

- TfNSW and Infrastructure NSW (INSW) policies and strategies promote transport solutions to reduce travel demand as an effective mechanism for addressing congestion impacts. The EIS must investigate these options.
- The EIS forecasts that more and longer trips will be made (p4.31). This undermines the government's proposal, set out in the *Transport Master Plan* to reduce the kilometres travelled by motor vehicles.
- When considering travel demand management strategies the EIS confines itself to consideration of urban consolidation, jobs location, transit oriented development and parking restrictions. These are important tools in managing travel demand. However road pricing can be an effective tool, when used not just as a tolls-based revenue source to pay for roads. There are many international examples of pricing leading to changes in time or route of travel, change of mode or overall reduced travel (without measurable impacts on accessibility).
- The EIS states that 'travel demand management measures would require considerable changes in social attitudes, travel behaviour and government policy and can take many years to achieve'. There is no evidence to support this statement, TfNSW's Travel Choices behaviour change campaign has contributed in a substantial way to an eleven per cent decline in the number of vehicles entering the city centre. Even if the statement is correct it is not a reason to ignore this option Sydney already utilises many travel demand management techniques that are generally supported by the community for example:
 - Tolls on certain roads
 - Time of day tolling on some roads
 - Strict parking controls in new developments and centres
 - Parking Space Levy
 - Reallocation of roadspace to more efficient uses eg light rail, bus lanes
 - Changes to logistics and servicing around Sydney Olympics, World Youth Day and the Sydney city centre revitalisation.
 - Car share and rideshare solutions.

Matters to be addressed

Matter 4.1

- Before a determination is made, the Proponent will undertake an thorough assessment of Strategic Alternative 1 (*improvements to the existing arterial road network*) which shall, at a very minimum:
 - Identify key network capacity issues
 - Develop a scenario of investments in (potentially major) arterial road improvements required to address road network capacity constraints. This shall include reallocation of road space from single occupant vehicles to public transport and bus priority.
 - Draw on a process of transport modelling and economic assessment to inform the analysis and assessment of the alternative.

Matter 4.2

- Before a determination is made, the Proponent will undertake an assessment of Strategic Alternative 2 (*Investment in 'alternative transport' modes*) which shall, at a very minimum:
 - Identify key network capacity issues
 - Identify the mode shift away from private vehicles required to deliver the necessary relief on the road network to meet the future transport needs of Sydney.
 - Identify the mix of investments in public transport, cycling and walking required to deliver these mode splits.
 - Draw on a process of multi-modal transport modelling and economic assessment to inform the analysis and assessment of the alternative.

Matter 4.3

- Before a determination is made, the Proponent will undertake an assessment of Strategic Alternative 3 (*Travel Demand Management*) which shall, at a very minimum:
 - Identify key network capacity issues
 - Develop a package of Travel Demand Management mechanisms to address the road network capacity constraints. The package should aim to retime, re-mode or reduce trips that make less productive use of congested road space. It shall include: tolls on certain roads, time of day tolling on some roads, strict parking controls in new developments and centres, Parking Space Levy, reallocation of roadspace to more efficient uses eg light rail, bus lanes, changes to logistics and servicing around the Sydney city centre revitalisation, car share and rideshare solutions.
 - Draw on a process of multi-modal transport modelling and economic assessment to inform the analysis and assessment of the alternative.

5. Project Description

5.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The urban design objectives and proposed methodology in table 5.3 in Chapter 5 does not address the principles contained within the NSW Government's policy <i>Better Placed: An integrated design policy for the built environment of New South Wales</i>.
<ul style="list-style-type: none">• The description only represents a concept design for the Stage M4-M5 Link with the likelihood of changes once tenders are awarded. It is evident that the objective of many components of this Project is securing the patronage of eight traffic lanes in the mainline tunnels as well as future tollways, instead of providing improved links to the existing airport or the ports.
<ul style="list-style-type: none">• The Project includes widening and re-aligning of The Crescent to link with three portals serving any future Western Harbour Tunnel. The Western Harbour Tunnel is, however, unplanned and unfunded, and surface road operations in Rozelle have not been modelled.

5.2. The Project

- Part 5.1.1 of the EIS broadly outlines key components of the Project including the following:
 - A pair of mainline tunnels, up to four lanes in each direction, between the M4 East at Haberfield and the New M5 at St Peters.
 - Connections to tunnel stubs now under construction, but not approved yet, at Haberfield and St Peters as well as new entry/exit ramps.
 - Portals and ramps at Iron Cove Bridge leading to/from tunnels, duplicating Victoria Road, between Iron Cove Bridge and Anzac Bridge and connecting with the mainline tunnels.
 - A new interchange at Lilyfield-Rozelle connecting the mainline tunnels with congested roads in the inner city as well future tollways under Sydney Harbour.
 - An underground interchange beneath Leichhardt/Annandale linking Rozelle, Iron Cove and the mainline tunnels.
 - High impact surface works at Rozelle-Lilyfield including widening and realignment of The Crescent to accommodate unplanned and unfunded works, a new intersection and portals on City West Link, reconstruction and realignment of Victoria Road at The Crescent, widening of Whites Creek to manage stormwater, three 35m ventilation stacks and three operational complexes.
- The WestConnex program of works involves expanding or duplicating existing road infrastructure including widening the M4, upgrading King Georges Road interchange, creating a new M5 and further duplications of Victoria Road. No information has been provided about the forecast demand for movements

between the affected locations. The Project takes place ahead of other projects which could prioritise freight/business movements, provide for diverse passenger trips such as public transport or optimise existing road infrastructure.

- The description only represents a concept design for Stage 3 with the likelihood of changes once tenders are awarded. It is evident that the objective of many components of this project is securing sufficient patronage to justify eight traffic lanes in the mainline tunnels as well as future tollways instead of providing improved links to the existing airport or the ports.
- The range and extent of works involved in the Project would result in major impacts on the city centre and congested inner city streets. The description shows seven portals in Rozelle and Lilyfield feeding to and from Anzac Bridge, Victoria Road and the City West Link without full modelling of their long term impacts locally or on the city centre. It does not provide sufficient assurance that open space at the Rozelle Rail Yards will be landscaped to a standard suitable for community use. The description also fails to include changes proposed to local streets intended by the Road Network Performance Review mentioned in Appendix H, or information about the enormous signage likely to be installed on approach streets guiding motorists into divided entry ramps, which aim to reduce the amount of lane changes within the tunnels.

5.3. Urban Design Objectives

- The urban design objectives and proposed methodology in table 5.3 in the EIS do not address either the principles contained within the NSW Government's policy *Better Placed: An integrated design policy for the built environment of New South Wales* or RMS's *Beyond the Pavement*.
- *Better Placed* includes the following seven objectives that have been created to define the key considerations that should be met in the design of the built environment:
 - Better fit: contextual, local and of its place
 - Better performance: sustainable, adaptable and durable
 - Better for community: inclusive, connected and diverse
 - Better for people: safe, comfortable and liveable
 - Better working: functional, efficient and fit for purpose
 - Better value: creating and adding value
 - Better look and feel: engaging, inviting and attractive
- In reviewing the proposed urban design objectives all modifiers including 'where possible' and terms like 'enhance' should indicate the objective's hierarchy in relation to other considerations (like cost and increasing traffic capacity). This will clarify what constraints are at play, and where it is appropriate to apply the modification.

Planning conditions required to avoid or mitigate impacts

Condition 5.1

Align the urban design objectives that guide the Project with *Better Placed* including both design processes and design outcomes.

Matters to be addressed

Matter 5.1

- Design the Project and surrounding roads to ensure regional and induced traffic does not increase through areas where existing, and planned communities will, live or recreate.

Matter 5.2

- The City requests that the Proponent provide further information in relation to the proposed widening and realignment of The Crescent, as part of the Response to Submissions (RTS) documentation.

Matter 5.3

- Ensure that the importance of the urban design objectives is made explicitly equal to, or on a higher level than, the objective of increasing traffic capacity.

5.4. Rozelle surface works

- The Project includes widening and re-aligning of The Crescent to link with three portals serving any future Western Harbour Tunnel. The Western Harbour Tunnel is, however, unplanned and unfunded, and surface road operations in Rozelle of any future tunnel have not been modelled.
- In light of this, any surface road works intended to serve the future Western Harbour Tunnel, including widening and realignment of The Crescent, must be deleted from the Project.
- The Rozelle Surface Works are poorly designed as merely space left over after planning a motorway, its utilities and service housings. They must be redesigned with priority given to providing high quality parklands. To enable this a separate Urban Design Directorate must be established to direct their redesign.

Planning conditions required to avoid or mitigate impacts

Condition 5.3

- a. Within three months of the date of this approval, unless otherwise agreed by the Secretary in consultation with the City of Sydney Council, the Proponent must establish an Urban Design Directorate (UDD) to direct and guide the detailed design of the Rozelle Surface Works.
- b. The UDD key functions are to include: establishing the objectives and parameters of the Rozelle Surface Works, and guiding their design, documentation and construction. The UDD will approve the consultants' brief, participate in the consultant selection and establish targets to ensure design excellence in urban design, landscape design and environmental design practice is achieved. The UDD must ensure the quality of the parklands has priority over the civil works by ensuring the design of the Rozelle Surface Works proceeds in parallel with and informs the design of the motorway and its ancillary services and is not designed as subsidiary to these.
- c. The UDD is to provide advice in relation to architecture, heritage values, urban and landscape design and artistic aspects of the SSI and shall:
 - i. be comprised of the following relevant experts or their nominees:
 - a. The Government Architect (chair)
 - b. The Environment Commissioner of the Greater Sydney Commission (deputy chair)
 - c. Director Precincts & Urban Design at Transport for NSW
 - d. President Australian Institute of Landscape Architects NSW
 - e. Urban Design Planner Inner West Council
 - f. Director City Planning, City of Sydney
 - g. Executive Director Heritage of the NSW Office of Environment and Heritage
 - h. A member of the Board of Directors of Urban Growth with landscape and urban design skills.
 - Principal Manager Centre for Urban Design at RMS
 - ii. ensure each nominee has full membership of UDD regardless of local government area of works
 - iii. meet at least four times a year, or as otherwise agreed by the UDD with at least 4 members including the chair or deputy chair in attendance;
 - iv. all members to be invited to all meetings;
 - v. review and provide advice on the detailed design of the SSI and final review of the Urban Design and Landscape Plan (UDLP) for the Rozelle Surface Works as required by relevant DPE condition(s); and

- vi. keep a record of meeting minutes and a schedule of action items arising from the meeting.

Condition 5.4

- a. Prior to commencement of permanent built surface works and/or landscaping, or as otherwise agreed by the Secretary, an Urban Design and Landscape Plan must be prepared specifically in relation to the Rozelle Surface Works. The UDLP must be prepared by a suitably qualified and experienced person(s) as appointed by the UDD, in consultation with the relevant council(s) and community and Heritage Council of NSW (or delegate),
- b. The UDLP must be approved by the Secretary in consultation with City of Sydney and Inner West Councils.
- c. The UDLP must present an integrated urban and landscape design for the Rozelle Surface Works (and related works subject of the SSI) and must include, but not be limited to:
 - i. identification of design objectives, principles and standards based on -
 - a.local environmental and heritage values,
 - b.urban design context,
 - c.sustainable design and maintenance,
 - d.community safety, amenity and privacy, including 'safer by design' principles where relevant,
 - e.relevant design standards and guidelines,
 - f.prioritising the amenity and values of park users and adjoining residents over the road user experience,
 - ii. Consider and respond to:
 - a.Inner West Council's Recreation and Open Space Needs Study
 - b.City of Sydney's Open Space Sports and Recreation Needs Study
 - c.Urban Growth's The Bays Active Recreational Needs Study
 - d.NSW Government Architect's *Better Placed* Report
 - e.Roads and Maritime Service's *Beyond the Pavement* Report
 - f.minimising the footprint of the Project (excluding the Rozelle Surface Works but including at operational facilities, the various dives ramps and spurs, and the City West Link), and
 - g.the urban design principles outlined in the documents referred to in the relevant DPE condition(s);
 - iii. specific design measures for the Rozelle open space, including:
 - a.Consolidation of the motorway service areas and other facilities to the difficult to access areas on top of the various roadway dives and separation of these from the parklands by slow speed, narrow local streets

- b. Reconceptualise the area as a series of parks each fully surrounded by slow speed, narrow local streets to increase accessibility, casual surveillance, that provide on street car parking and give clear definition to each park
- c. Relocate the following:
 - The incident response bay;
 - the Iron Cove Bridge/M4 East to Anzac Bridge spur (limit the part open to the sky to be to the east of the Victoria Road bridge upgrade);
 - Drainage infrastructure to be designed to include its use for passive and active recreation where possible.
- iv. landscaping and building design opportunities to mitigate for overshadowing, noise and air pollution and any safety impacts of road infrastructure and operational fixed facilities (including the ventilation facilities, light rail vehicular ramp, water treatment plant, culverts etc.);
- v. details on the location of existing vegetation and proposed landscaping (including use of endemic, hardy, with minimal watering requirements, and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species. Where feasible and reasonable, any top soil and vegetation to be removed must be reused;
- vi. a description of disturbed areas (including compounds) and details of the strategies to progressively rehabilitate, regenerate and/ or revegetate these areas;
- vii. a description of the SSI design features, including the graphics such as plans, sections, perspective views and sketches for key elements of the SSI;
- viii. an assessment of the location, design and impacts of operational lighting associated with the SSI and measures proposed to minimise lighting impacts;
- ix. details of where and how recommendations from the UDD have been incorporated into the plan;
- x. the timing for implementation of access, landscaping and open space initiatives;
- xi. monitoring and maintenance procedures for the built elements, rehabilitated vegetation and landscaping (including weed control) including performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail; and
- xii. evidence of consultation with the UDD, Inner West and City of Sydney Council and the community on the proposed urban design and landscape measures, prior to finalisation of the Plan.
- d. The UDLP must be implemented within one year of operation unless otherwise required by these conditions.

Condition 5.5

- a. All works undertaken in relation to the Rozelle Surface Works must be fully funded by the Proponent including, but not limited to, the design and implementation of the UDLP to a standard acceptable to the future long-term owners and/or managers of the works; likely to be Inner West Council, or UrbanGrowth NSW.
- b. The Proponent will arrange for and complete the transfer of its ownership and management to Inner West Council once all works are completed in accordance with relevant DPE condition(s).

Condition 5.6

All available land, including any land resulting from compacting the WestConnex works at Rozelle, to be used for open space recreation.

Condition 5.7

Delete any surface road works intended to serve the future Western Harbour Tunnel, including widening and realignment of The Crescent from the Project.

Matters to be addressed**Matter 5.4**

- All available land, including any land resulting from compacting the WestConnex works at Rozelle, to be used for open space recreation. Any additional land must be used for public open space and recreation areas and must not be sold for commercial or development purposes at any time.

6. Construction Work

6.1. Key Findings

Key Findings

- The Construction Traffic and Access Management Plan (CTAMP) for the New M5 Project (WestConnex Stage 2) was poorly managed. A different approach is required.
- Management of construction vehicles on the Princes Highway does not reflect the RMS King Street Gateway project which will reduce the capacity of the Princes Highway.
- The claim that temporary traffic signals on the City West Link would operate at Level of Service A is unrealistic in this heavily-congested location, particularly during peak periods.

Matters to be addressed

Matter 6.1

- For the 2021 construction year, the EIS focusses on the impact of construction traffic during the weekday AM and PM peak periods only. Information must be provided on the impact of construction-related vehicles outside the weekday peak periods particularly on Saturday between 10am and 4pm and for sites where 24 hour operations are proposed.

Matter 6.2

- The EIS states temporary changes to the intersection of The Crescent and Chapman Road may be required. More information must be provided about these temporary changes

Matter 6.3

- In discussing the road safety impacts of construction vehicles, the EIS only refers to the volume of construction-related vehicles. It must also account for the size and manoeuvrability of the vehicles involved given larger vehicles have differing crash statistics and severities.

Matter 6.4

- The Proponent must prepare the CTAMP with local councils and key stakeholders including bicycle groups. Feedback provided by local Councils and key stakeholders must be acknowledged and responded to within 10 business days of receipt.

Matter 6.5

- More information must be provided about the temporary changes to the intersection of The Crescent and Chapman

Matter 6.6

- The road safety assessment must also account for the size and manoeuvrability of larger vehicles given differing crash statistics and severities.

Matter 6.7

- Any oversize and/or over-mass vehicles using Local or Regional Roads must gain approval from the relevant local Council prior to travel.

Matter 6.8

- All construction-related vehicles must be entirely off-street.

Planning conditions required to avoid or mitigate impacts**Condition 6.1.**

- a. Prior to the commencement of construction works, the Proponent shall:
 - i. Provide the relevant council with copies of the community consultation letters that are being distributed to the local residents and stakeholders.
 - ii. Provide the relevant council with 24 hour contact details to provide Council with information about construction activities and construction hours and to whom Council can direct any enquiries or complaints from surrounding residents and businesses.
- b. Evidence demonstrating compliance with this condition must be provided to the satisfaction of the Secretary prior to commencement of any works.

Condition 6.2.

Construction activities associated with the SSI must be undertaken during the following standard construction hours:

- 7:00 am to 6:00 pm Mondays to Fridays, inclusive;
- 8:00 am to 1:00 pm Saturdays; and
- at no time on Sundays or public holidays.

Condition 6.3.

- a. Except as permitted by an EPL, activities resulting in impulsive or tonal noise emissions must only be undertaken:
 - i. between the hours of 8:00 am to 6:00 pm Monday to Friday;

- ii. between the hours of 8:00 am to 1:00 pm Saturday; and
 - iii. in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.
- b.** For the purposes of this condition, 'continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.

Condition 6.4

- a.** Prior to the establishment of the ancillary facilities (including vegetation clearing) described in the documents referred to in relevant DPE condition(s), the Proponent must prepare and implement an Ancillary Facilities Management Plan which outlines the environmental management practices and procedures for the establishment and operation of the ancillary facilities. The Ancillary Facilities Management Plan must be prepared in consultation with the relevant council(s) and submitted to the Secretary for approval prior to commencing site establishment works. The Ancillary Facilities Management Plan must detail the management of the ancillary facilities, and include, but not be limited to:
- i. a description of each ancillary facility (including a site layout plan), its components and details of the existing environment on and in the vicinity of the site;
 - ii. a description of the works proposed to be undertaken during site establishment;
 - iii. details of the activities to be carried out at each facility, including the hours of operation, staging of operation and predicted date of commissioning;
 - iv. a description of the plant, equipment and materials to be used and/or stored on each site, including dangerous and hazardous goods;
 - v. a summary of the potential environmental impacts associated with the establishment and operation of the facility;
 - vi. details of the mitigation, monitoring and management procedures specific to each facility that would be implemented to minimise environmental and amenity impacts during both site establishment and operation or, where this is not possible, feasible and reasonable measures to offset these impacts;
 - vii. measures to minimise and manage flora and fauna impacts including -
 - a. clearing procedures incorporating pre-clearing surveys and inspections and measures for minimising the extent of clearing,
 - b. procedures for removal and relocation of fauna during clearing, and
 - c. construction worker induction and education;
 - viii. a description of how the management and mitigation measures set out in the documents referred to in relevant DPE condition(s) will be implemented on each site, and if not, justification for any departures from those management and mitigation measures;

- ix. details of the community consultation to be undertaken with affected and adjoining landowners and sensitive receivers;
 - x. details on the height and materials of noise barriers/hoardings at each facility;
 - xi. identification of the timing for the completion of site activities at each facility and how each site will be decommissioned (including any necessary rehabilitation); and
 - xii. mechanisms for the monitoring, review and amendment of the Ancillary Facilities Management Plan.
- b. In considering the approval of the Ancillary Facilities Management Plan, the Secretary will take into account the Proponent's response to public authority and relevant council comments on the plan.
- c. For the purposes of this condition, site establishment works does not include:
- i. piling (except for piling required for the erection of noise barriers around construction compounds); or
 - ii. the erection of acoustic sheds at ancillary facilities; or
 - iii. excavation activities (excluding excavation associated with trenching for services, site levelling for the erection of construction site offices and parking and storage and maintenance sheds; or excavation of sediment ponds for construction sediment and erosion control).
- d. Such works are considered to be construction.

Condition 6.5.

Site establishment works at ancillary facilities must be undertaken in accordance with the construction hours specified in DPE conditions.

Condition 6.6.

The location of ancillary facilities must comply with the following locational criteria:

- a. be located more than 50 metres from a waterway;
- b. be located within or adjacent to land where the SSI is being carried out;
- c. have ready access to the road network;
- d. be located to minimise the need for heavy vehicles to travel on local streets and/or through residential areas;
- e. be sited on relatively level land;
- f. be separated from nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant);
- g. not require vegetation clearing beyond that already required by the SSI;
- h. not impact on heritage items (including areas of archaeological sensitivity) beyond those already impacted by the SSI;

- i. not unreasonably affect the land use of adjacent properties;
- j. be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; and
- k. provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours.

Condition 6.7.

All ancillary facilities and supporting infrastructure must be rehabilitated to at least their pre- construction condition or better, unless otherwise agreed by the landowner. Where the rehabilitated site is residual land then (relevant DPE condition) applies.

Condition 6.8.

The privacy of adjoining residential development is to be considered in the design and establishment of ancillary facilities. Where an ancillary facility overlooks residential property, privacy measures will be provided in consultation with the affected property owner.

Condition 6.9

- a. Prior to the commencement of construction, the Proponent must prepare a Construction Traffic and Access Management Plan (CTAMP) in consultation with the relevant council(s) and submit it to the Secretary for approval.
- b. The CTAMP, must include but not be limited to:
 - i. An outline of the construction impacts; and
 - ii. Demonstrate sufficient on-site parking is provided at construction compounds to accommodate all construction staff at any one time.

Condition 6.10

The Proponent must seek approval for the use of local and regional road(s) by the Secretary. When seeking the Secretary's approval for use of such roads, justification must be provided as to why the use of the local road is the only feasible and reasonable route and that consultation with relevant council(s) has been undertaken.

6.2. Construction Activities

- The EIS states a CTAMP would be developed in consultation with local Councils and stakeholders. A similar commitment made for WestConnex Stage 2 New M5 has been poorly managed with neither SMC nor RMS taking responsibility for complying with the CTAMP and blaming each other for any compliance failures. The Proponent must prepare the CTAMPs in conjunction with councils and key stakeholders and feedback provided must be acknowledged and responded to within 10 business days of receipt. The plan must include strategies to address

the use of local streets for parking by construction workers and sub-contractors and truck marshalling areas.

- The EIS does not show future traffic conditions on the Princes Highway near the St Peters interchange. RMS is currently developing the King Street Gateway project which will reduce the capacity of the Princes Highway north of Campbell Street from six to four lanes.
- The EIS states construction vehicles would access the Rozelle Civil and Tunnel Site (C5) via temporary traffic signals on City West Link, west of The Crescent. The intersection analysis for the temporary signals forecasts a Level of Service A for the weekday AM and PM peak-travel periods. This is optimistic given the heavily-congested traffic conditions in this location.
- The EIS states construction-related vehicles associated with the Project is not expected to substantially impact road safety in and around the study area. The crash analysis underpinning this conclusion appears to be based primarily on the volume of construction-related vehicles and does not account for the size and manoeuvrability of large vehicles which have differing crash statistics and severities.

Planning conditions required to avoid or mitigate impacts
Condition 6.11
<ul style="list-style-type: none">• Adequate resources must be made available to ensure that compliance with the conditions applied to the Project can be carried out adequately and in a timely manner.

7. Consultation

7.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The consultation process has been flawed. It was not <i>genuine</i> consultation, it was merely a public relations exercise. Despite the assertion that consultation has been comprehensive, it has largely consisted of providing limited information which was of little real value. Repeated requests for answers to a wide range of questions and issues remained unanswered.
<ul style="list-style-type: none">• The exhibition period was inadequate. Despite requests for a submission period of at least three months, avoiding the school holidays, only two months has been allowed for submissions on the EIS, which has included a school holiday period.
<ul style="list-style-type: none">• On the New M5 project, community consultation has been poor in terms of time available, quality of materials provided and access to the necessary information. These shortcomings must be rectified for the Project.

7.2. Comments

- WestConnex is a major program of works and the EIS for Stage 3, with documentation totalling approximately 7,500 pages, should have been exhibited for at least three months to allow sufficient time to work through all the elements of the Project and its impacts.
- The Project Proponent seems determined to go ahead with Stage 3, irrespective of significant community opposition. The lack of detailed information in the EIS and associated high-profile advertising campaign suggests this is a promotional exercise only and that community feedback will not be taken into consideration. The City notes that the report back on submissions on the WestConnex Stage 3 Concept Design was released around the same time as the Stage 3 EIS was placed on exhibition, indicating that scant attention was made to the communities' feedback.
- WestConnex has developed into a major program of future roadways which if all stages proceed, would impact on northern, southern, western and inner Sydney. It bears little resemblance to the first concept design released in 2012 which involved integrating the M4 extension from Parramatta towards the airport with an expansion of the M5 East. The current media campaign for WestConnex does not mention links with the North and South in the future nor refer to connections to the airport.
- In its submission the City has requested additional information and access to background information which has not been included in the EIS to support many of the conclusions in the EIS.

Matters to be addressed

Matter 7.1

- Once submissions have been assessed, the Project should be re-exhibited with full background information, outlining how community concerns have been addressed.
- DPE must set and enforce clear parameters for consultation activities relating to the Project in terms of:
 - Time provided - minimum of 28 days, not including school holidays or public holidays
 - Quality of information - sufficient information must be provided in a format that is clear and readily downloadable (in the case of electronic information)
- Access to information - consultation material must be provided in locations that are easily accessible by members of the community

Matter 7.2

- Further community consultation must be undertaken as the design is developed after the contract has been awarded.

8. Traffic and Transport

8.1. Key Findings

Key Findings

- There is a substantial discrepancy in the vehicle kilometres travelled in the base case modelling used in the M4-M5 Link EIS and the base case modelling used in the M4 East EIS.
 - The M4 East EIS states vehicles in the study area travelled 14.5 million kilometres each day in 2014 (p9.45). The M4-M5 Link EIS states that vehicles in the study area travelled 11.5 million kilometres travelled each day (some 26 per cent more vehicles) (Appendix I p94).
 - The fact that the M4-M5 Link EIS uses a substantially lower value calls into question the technical robustness, clarity and transparency of the EIS. This discrepancy must be explained.
-
- The traffic projected to travel along the M4-M5 Link alone would only fill it to around one third of its available capacity during peak periods. This significantly undermines the justification for building the mainline tunnel with four lanes in each direction.
 - The proposed Western Harbour Tunnel and Beaches Link would see traffic volumes increase, bringing volumes closer to the capacity of the mainline tunnel. This would lead to significant impacts across the surface road network. The resulting congestion would negatively impact surrounding communities, much of the inner city and road network at the southern end of the GEC.
-
- The EIS provides no details of the 'program of network integration works to upgrade roads affected by the Project' despite the fact that these works could affect numerous road corridors and could include intersection and road widening, banning parking in local centres, removal of trees, footpaths and cycling facilities.
 - Where the Project risks leading to additional traffic demand on the surface street network, the priority will be to protect the amenity of the local areas and avoid these impacts by constraining traffic flows and the associated noise, emissions and safety risks
 - In adopting the 'wait and see' approach to identify road 'improvements' required as a result of the Project, the EIS does not provide sufficient detail of the likely impacts for communities affected by the Project, nor does it provide the people of NSW with a true reflection of the level of taxpayer funds required to deliver the identified works.
-
- The Project will reduce the speed and reliability of buses travelling between the busy Victoria Road Corridor and the city centre via the Anzac Bridge.
 - The EIS provides no mitigation measures to even maintain the current (poor) levels of travel time and reliability of Victoria Road bus services.

<ul style="list-style-type: none"> • Further, the EIS provides no assessment of other bus routes affected by the additional traffic congestion caused by the Project. Notably, no comment is made on impacts of bus services in the Sydney city centre.
<ul style="list-style-type: none"> • The approach to traffic modelling is fundamentally flawed and inaccurate. • The EIS offers no indication of the level of accuracy and reliability of the traffic modelling process. This is critical as traffic projections have direct and significant influence on a range of key aspects of the EIS including: air quality modelling, noise and vibration modelling, safety benefits estimates. It also has a major bearing on toll and revenue projections, critical to assess the financial viability of the Project.
<ul style="list-style-type: none"> • The 2023 'cumulative' modelling scenario adopted in the EIS includes the Sydney Gateway and the Western Harbour Tunnel despite the fact that neither of these projects are currently committed and it is highly unlikely they will be completed by this date. • This raises the question, why did the Proponent adopt such a misleading scenario and how does it affect the impacts stated?
<ul style="list-style-type: none"> • The EIS does not assess the impacts of the Project on Sydney's city centre streets and intersections, Anzac Bridge and Western Distributor. • Given the highly constrained and congested nature of the city centre and in light of the NSW Government's transport policy which focuses on reducing the number of cars in the city centre in favour of public transport and walking and cycling, any additional vehicles travelling into the Sydney city centre threatens the potential to meet the access requirements of the growing CBD. Additional traffic within the Sydney city centre also threatens the productivity and liveability of Australia's Global City Centre. • The only information pertaining to likely increases in traffic over the Anzac Bridge that can be gleaned from the EIS is the Average Weekday Traffic (AWT). These figures indicate that the Project would lead to traffic some 30 per cent higher than the capacity of the road link.
<ul style="list-style-type: none"> • When the projected levels of service of major intersections are filtered from minor intersections, the following outcomes are identified: <ul style="list-style-type: none"> – The Project will cause almost all major intersections around the Rozelle Interchange to have a worse Level of Service in comparison to existing conditions. These will further worsen if additional proposed motorways links (Western Harbour Tunnel, Beaches Link, F6) are added to the network. – The Project will cause most major intersections around the St Peters Interchange and Wattle Street Interchange to have a worse Level of Service in comparison to existing conditions. These will further worsen if additional proposed motorways links (Western Harbour Tunnel, Beaches Link, F6) are added to the network.
<ul style="list-style-type: none"> • All future scenarios modelled by the EIS result in traffic volumes in the Sydney Harbour Tunnel that are greater than the capacity of the road link in the AM and PM peak hours. Given the Western Harbour Tunnel is proposed to relieve congestion on harbour crossings, this finding is counterintuitive.

- The EIS does not provide 'without project' traffic estimates for 2033 which means that they cannot be compared to the 2033 'with project' and 'cumulative' scenarios. This omission casts the validity of the EIS into doubt as it could be assumed that this is because the modelling outputs showed little benefits (or actual worsening) accruing to the Project relative to the base case.
- The EIS has made it extremely difficult to compare traffic forecasts. This is contrary to the SEARs which require that 'the process for assessment of the proposal is transparent'.
- The Active Transport Strategy referred to in the EIS demonstrates a poor understanding of existing walking and cycling needs and infrastructure particularly near the Rozelle interchange.
- The proposed active transport infrastructure discussed in the EIS lacks sufficient detail and is inconsistent. It is not included in the Project Description and no commitment has been given to delivery of the active transport links.
- The impacts imposed on pedestrian and bicycle riders during construction would be significant and unacceptable.

8.2. EIS traffic modelling is fundamentally flawed and inaccurate

- There is no statement on the level of accuracy and reliability of the traffic modelling process. This is a major shortcoming and is contrary to the SEARs.
- The traffic model used for the EIS is an 'unconstrained' model. It assumes that all vehicles will travel on the route with the lowest generalised cost (time and money), but does not consider whether those routes have the capacity to handle all those vehicles. In the real world people change their time of travel, method of travel and consider whether to make a trip at all to avoid congested routes. As a result travel patterns in the real world are very different to the patterns identified in the model.
- The traffic modelling process that has been used in the EIS is not fit for purpose and places significant risks on the people of NSW in terms of:
 - The traffic impacts that will be significantly different to those presented in the EIS.
 - Toll earnings that will be significantly lower than projections – resulting in government subsidising the owner for lost earnings.
- The accuracy of the model outputs are only be as good as the accuracy of the inputs. Projections of key inputs relating to population and employment become very vague beyond 10 or 15 years. Additionally the transport sector is potentially facing significant disruption from connected, automated vehicles that may have a significant impact on traffic growth. This has not been considered or modelled.
- The modelling process incorporates a highly unusual definition of induced traffic (p.45 of Appendix H). Induced traffic should not include the increase in trips due to population growth and land use changes as these are modelled elsewhere
- The M4 East EIS states vehicles in the study area travelled 14.5 million kilometres each day in 2014 (p9.45). The M4-M5 Link EIS states that vehicles in

the study area travelled 11.5 million kilometres travelled each day (some 26 per cent more vehicles) (Appendix I p94).

Planning conditions required to avoid or mitigate impacts

Condition 8.1 Quality assurance

The Proponent must submit a statement of accuracy and reliability of the modelling methodology that informed the EIS in the submissions report.

Condition 8.2 Quality assurance

The Traffic Assessment and modelling must be independently peer reviewed by a suitable and experienced specialist, approved by relevant Councils and the Secretary prior to any approval.

8.2.1. Unreliable traffic projections

- Unreliable traffic projections lead to significant and compounding errors in the design, EIS and business case processes, including:
 - Dimensioning of motorway tunnels and interchanges (on-and off-ramps) and expansion of roads feeding traffic to, and discharging traffic from, the toll road.
 - Assessment of the Project's traffic impacts on other parts of the street network.
 - Assessment of overall traffic generation and induced traffic associated with the Project.
 - Emissions based on traffic volume and driving style (e.g. stop-start driving in congested traffic leads to higher emissions impacts).
 - Toll earnings.
 - Other key inputs to the business case that are derived from strategic traffic modelling, including: purported reductions in crashes, purported improvements in productivity etc.

Matters to be addressed

Matter 8.1

- Numerous parts of the EIS relied on traffic projections to estimate and assess impacts, including: air quality modelling, noise and vibration modelling, safety benefits estimates.
- Key chapters within the EIS shall be revisited to ensure that they are consistent with the accuracy and reliability of the traffic projections that informed them. I.e. no outputs shall be presented at a level of detail or reliability that is more specific than the level of accuracy and reliability of the modelling process that informed them.

Matter 8.2

- The Proponent must address the apparent discrepancy in the study area vehicle kilometres travelled value used in the M4 East EIS (14.5 million kilometres per day in 2014) and the M4-M5 Link EIS (11.5 million kilometres per day).
- The outcomes of this investigation shall be reported transparently and publically as if a discrepancy is found, the fact that the M4-M5 link EIS uses a substantially lower value calls into question the technical robustness, clarity and transparency of the EIS.

8.2.2. Modelling scenarios are unfeasible and modelling outputs are incomplete

- The 2023 'cumulative' modelling scenario includes the Sydney Gateway and the Western Harbour Tunnel. Neither of these projects are currently committed and it is highly unlikely they will be completed by this date. This raises the question of *why did the Proponent adopt such a misleading scenario and how does it affect the impacts stated?*
- The construction impact of the future Harbour Tunnel and Beaches Link entry and exit ramps connecting to City West Link/The Crescent has been assessed but the operational traffic impact of these ramps has not. This should be completed and publicly released before determination.

Matters to be addressed

Matter 8.3

- The operational impact of the future Harbour Tunnel and Beaches Link entry and exit ramps connecting to City West Link/The Crescent must be assessed and publicly released before determination.
- The EIS (including Appendix H) fails to model impacts of the Project on city centre streets and intersections. Given the highly constrained and congested nature of the city centre and the NSW Government's transport policy which focusses on reducing the number of cars in the city centre in favour of public transport and walking and cycling, this is unacceptable.
- Information about the impact of traffic generated by the Project on the Anzac Bridge is scant. What little information is available suggests more traffic will attempt to travel on the bridge than can fit on it. Whilst chapters 10 and 12 of Appendix H show mid-block level of service at interfaces with interchanges and points within the tunnels, there is no information about other mid-block points such as the Anzac Bridge. The EIS refers to increases in daily traffic on the Anzac Bridge/Western Distributor, particularly in the AM peak, as traffic accesses the M4-M5 Link and the need for traffic or network management in the future (Part 8.3.3). However, the only solid data provided is the Average Weekday

Traffic (AWT). This indicates that the Project would lead to traffic demand some 30 per cent higher than the capacity of the road link.

Planning conditions required to avoid or mitigate impacts

Condition 8.3 Further analysis of traffic impacts

- a. The Proponent must undertake further analysis, including modelling of traffic impacts to the adjoining road network, as a consequence of the SSI. This must include a review of new information available about potential land use changes, and any traffic changes as a result of other major road projects within the potential area;
- b. Further detailed investigations at the following intersections or sections of the road network:
 - i. Potential 'pinch points' where the merging of tunnel exist traffic and surface traffic would occur at the Anzac Bridge off ramp (Allen Street/Botany Road) and the Western Distributor off ramp (King Street/Sussex Street);
 - ii. Western Distributor off ramp to Druiitt Street;
 - iii. Western Distributor off ramp to Bathurst Street; and
 - iv. Gardeners Road/Botany Road.
- c. This analysis must be approved by the Secretary in consultation with Council prior to commencement of work.

Matters to be addressed

Matter 8.4

- Before any determination is made, the Proponent shall remodel and reassess the 2023 'cumulative' modelling scenario without the Sydney Gateway and the Western Harbour Tunnel. Neither of these projects are currently committed and it is highly unlikely they will be completed by this date.

Matter 8.5

- Before any determination is made, the Proponent shall assess the operational impact of the future Harbour Tunnel and Beaches Link entry and exit ramps connecting to City West Link/The Crescent and make public the traffic modelling informing this assessment.

Matter 8.6

- Before any determination is made, the Proponent shall assess potential impacts of the Project on city centre streets and intersections and will make public the traffic modelling informing this assessment.

- If traffic modelling identifies any appreciable additional traffic entering the Sydney city centre, the Project shall not be approved in its current form.

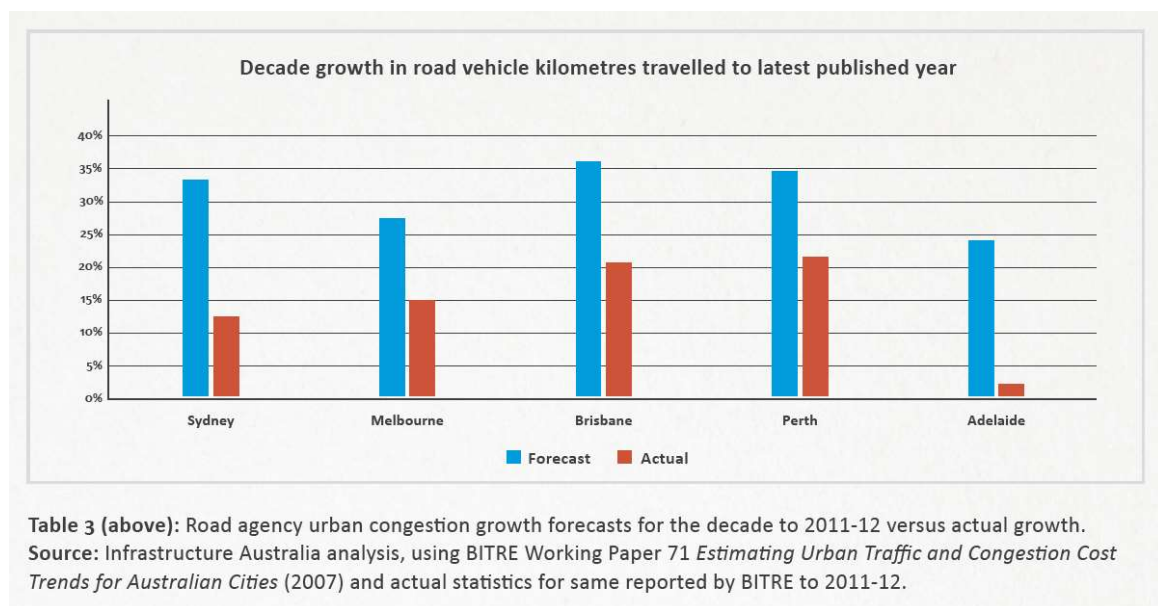
Matter 8.7

- Before any determination is made, the Proponent shall assess potential impacts of the Project on the Anzac Bridge/Western Distributor and will make public the traffic modelling informing this assessment.
- If traffic modelling identifies any appreciable additional traffic on the Anzac Bridge/Western Distributor, the Project shall not be approved in its current form.

8.2.3. Evidence that the approach to traffic modelling in NSW is flawed

- The traffic modelling approach applied in the EIS is similar to the approach commonly used in NSW, an approach which has proven to be flawed.
- Analysis conducted by Infrastructure Australia¹⁹ demonstrates that the steady growth in traffic projected by the modelling approach has not occurred (see Figure 1). In Sydney, the data indicates that urban congestion levels were growing at around one third of the forecast rate.
- In simple terms, the traffic modelling process overestimates the future overall traffic demand and the NSW Government (and private tollroad companies) spend tax payers' money building or widening roads to 'solve' the projected congestion that would occur. This results in localised impacts on communities associated with construction impacts and increases traffic around the expanded arterial road capacity.

Figure 1. Growth in Road Vehicle Kilometres Travelled 2001 - 2011



¹⁹ Infrastructure Australia, 2014, *Spend more, waste more. Australia's roads in 2014: moving beyond gambling*. Industry consultation draft. <http://www.ycat.org.au/wp-content/uploads/2014/07/Draft-IA-Roads-Report.pdf>

- A review of RMS traffic counts on numerous arterial roads within the sphere of influence of the Project have shown no growth in traffic since 2006, despite Sydney's population²⁰ growing by 1.5 per cent per annum on average. Roads reviewed were:
 - Parramatta Rd at Ashfield (station 25002), Leichhardt (station 20012), Five Dock (station 30005) and Annandale
 - Anzac Bridge (station 20001)
 - Anzac Parade, Moore Park (station 03022 b/w 2008 and 2017)
 - Cleveland Street (station 03022)
 - Sydney Harbour Tunnel (station 01003)
 - O'Riordan Street (station 02309)
 - Sunnyholt Road, Blacktown (station 69198)
 - General Holmes Drive, Brighton-Le-Sands (station 23055)
 - King Georges Road, Roselands (station 24026)

8.3. Induced traffic growth

8.3.1. Shortcomings in the EIS in relation to projecting induced traffic

- The EIS shows that several agencies have requested induced traffic growth be included in the traffic modelling for the M4-M5 Link (for example, p. 7). However, there is no description of how this has been done or the method used to produce a final figure that is included in the WRTM scenario models.
- An assessment of the Project by Infrastructure Australia²¹ suggests that inclusion of induced traffic growth reduces the benefits that can attributed to the Project by 25 per cent.
- The EIS includes reference to induced traffic growth in terms of:
 - The New Zealand standard for induced traffic growth having been consulted to estimate the induced traffic growth component
 - An increase of 0.3 per cent in Sydney traffic volumes included in the WRTM 'with project' and 'cumulative scenarios' to account for induced traffic growth.
- Concerns with the treatment of induced traffic in the EIS relate to:
 - The lack of clarity about what estimate or method of inclusion of induced traffic has been used
 - No indication provided of the elasticity of demand that has been used to account for induced traffic growth or whether a range has been used to compare high and low scenarios in order to gauge the potential impacts.
- Incorporation of induced traffic growth is critical as it tells us what is likely to happen to congestion levels across the network. This has significant impacts on the economic assessment of projects, especially in the years immediately after opening.

²⁰ The Greater Capital City Statistical Area

²¹ http://infrastructureaustralia.gov.au/projects/files/Final_WestConnex_Project_Evaluation_Summary.pdf

8.3.2. Unorthodox definition of induced traffic in the EIS

- In defining induced traffic the EIS includes:
 - Regional increase in number of trips due to population growth and increased economic activity.
 - Trips attracted from competing routes or modes as a result of improved travel times on the new or upgraded road.
 - Induced demand as a result of improved travel times between homes and destinations which cause changes to region-wide trip patterns. (Appendix H)
- The definition used in the EIS is not the broadly agreed definition of induced traffic which considers any increase in total vehicle mileage due to roadway improvements that increase vehicle trip frequency and distance, but excludes travel shifted from other times and routes (as these journeys already existed), or population growth and land use changes.
- By incorporating increases due to population growth and mode shift into the induced traffic, it confuses the analysis and makes it extremely difficult to assess the validity of the modelling process.

8.3.3. Concerns in relation to the rates used for induced traffic in the EIS

- Induced traffic growth does not occur in response to the increase in road capacity but in response to the travel time savings that the road capacity enables.
- When including induced traffic growth in project appraisals an elasticity of demand in response to travel times is usually used to calculate the additional volumes. The EIS makes no mention of what elasticity of demand was used in the appraisal of the M4-M5 Link.
- In studies undertaken by Ian Wallis & Associates²² for the Victorian Department of Transport, typical average elasticities of around -0.3 in the short run and -0.6 in the long run are recommended with the short run being two to three years and the long run being more than five. Such values mean that a 10 per cent saving in travel time between a trip's origin and destination would induce an additional 3 per cent car travel in the short run and 6 per cent in the long run. These elasticities cover all behavioural changes classified as induced traffic growth such as traffic redistribution, mode-shifting and new trips on an all-day basis (Ian Wallis Associates. 2009a, pp.23–24).

8.4. Examination of traffic model results

8.4.1. Overall finding: WestConnex constitutes a no-win scenario for Sydney's road network

- A critical review of the traffic modelling shows that the Project will deliver poor transport outcomes creating significant economic and financial risks.
- If the M4-M5 Link alone was built, without the Western Harbour Tunnel, Beaches Link and F6, traffic travelling along the link would only use one third of its capacity during peak periods. This significantly undermines the justification for building the mainline tunnel with four lanes in each direction.

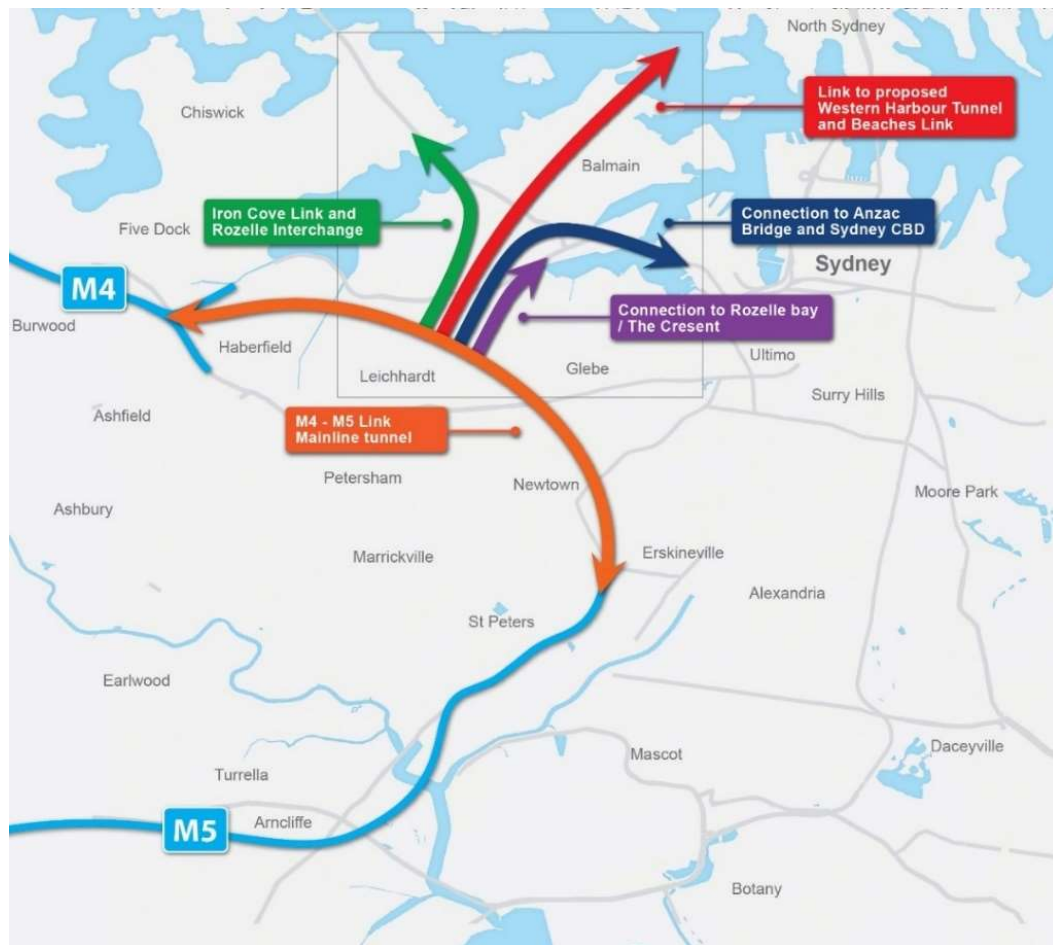
²² Ian Wallis Associates, 2009, *Induced Travel Demand Issues Paper*. Report prepared for the Department of Transport, Victoria.

- The Proponent has recommended the high capacity of the mainline tunnel for the M4-M5 Link in order to cater for traffic travelling on the Western Harbour Tunnel and Beaches Link, even though these proposals are not funded or approved. The City notes that both proposals are being met with significant community resistance.
- Without additional traffic, it is likely that the SMC would face an outcome similar to the Cross City Tunnel where there are insufficient traffic volumes to meet financial obligations and the Government (having a 49 per cent share of the Project) would be subject to ongoing payouts. This will have negative implications for both the economic and financial justification for the construction of the Project.
- The proposed Western Harbour Tunnel and Beaches Link would see traffic volumes increase, bringing volumes closer to the capacity of the mainline tunnel. This would lead to significant impacts across the surface road network. The resulting congestion would negatively impact much of the inner city and road network at the southern end of the GEC.
- Both problems – not enough traffic to justify WestConnex (Stage 3) on its own and the high traffic volumes and congestion that would occur if the additional motorway links are added – will render the road network dysfunctional for business, the community and the region as a whole.

8.4.2. Traffic volumes on existing, proposed and potential future motorway links

- The Project is made up of a complex set of motorway connections.
- The clearest way to identify the intention, and test the veracity, of the modelling used to justify each connection is to examine them by their destination group as shown in Figure 2.
 - M4-M5 Link mainline tunnel (shown in orange)
 - Iron Cove Link to Victoria Road (shown in green)
 - Link to proposed Western Harbour Tunnel and Northern Beaches motorway (shown in red)
 - Connection to Anzac Bridge and Sydney city centre (shown in blue)
 - Connection to Rozelle Bay/The Crescent (shown in purple)

Figure 2. M4-M5 Link schematic



- The degree to which traffic travelling along planned roads (and potential future roads) of WestConnex will take up or exceed the capacity of road links is explained in more detail below (see Figure 3 next page):
- The mainline tunnel of the Project (shown in orange) is currently proposed to have four lanes in each direction. If this is the only motorway section built, the four lanes in each direction would go largely unused as the feeder road network has a lower capacity than the tunnel itself.
- With a connection to the Anzac Bridge (shown in blue), volumes in the mainline tunnel would still be well below the tunnel's proposed capacity. The Iron Cove Bridge links (shown in green) and further motorway expansions to the North, would see traffic volumes entering the mainline tunnel increase while being well below its capacity.
- If a link to the Northern Beaches via a Western Harbour Tunnel is added (shown in red), volumes in the mainline tunnel could increase significantly as the capacity of the feeder network becomes greater than the tunnel capacity. When this happens, the model shows mainline tunnel volumes would increase to around 80 per cent of capacity and Level Of Service on the surrounding feeder road network drops significantly, creating heavily congested conditions across a wide stretch of the inner city and southern end of the road network that serves the GEC which includes the Airport and Port Botany.

Figure 3. M4-M5 Link tunnels and roads



8.5. Assessment of modelled traffic volumes on existing, proposed and potential future tollway links

8.5.1. Traffic volumes on existing, proposed and potential future motorway links

- The EIS provides a few isolated indications of the relationship between projected traffic and capacity on key links affected by the Project.
- Hourly AM peak traffic volume estimates for the mainline tunnel (four lanes in each direction) indicate it would receive traffic volumes that are less than one third of the total capacity available. The hourly capacity for the proposed mainline tunnel of the M4-M5 Link is 16,000 vehicles/hour for both directions at Level of Service E, or 8,000 vehicles/hour in one direction. This is highlighted in Figure 4.

Figure 4. Lower north-south screenline volumes for M4-M5 Link roads

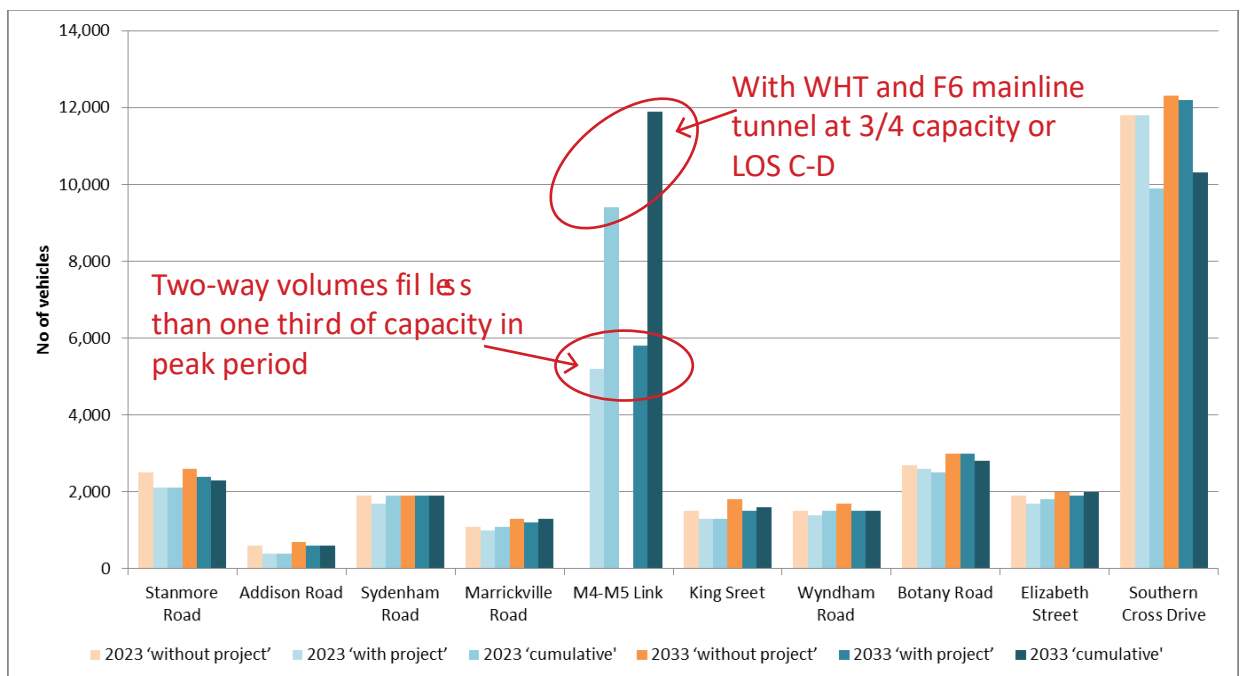


Figure 9-6 Lower north-south screenline: comparison of two-way AM peak one hour volumes

Source: WRTM v2.3, 2017

- Figure 5 appears to show that the Western Harbour Tunnel will need to be 4 lanes in each direction and would induce an additional 8,000 vehicles an hour across the harbour, as no other crossing loses that amount of traffic.
- The Sydney Harbour Tunnel has an hourly capacity of some 6,740 vehicles/hour for both directions (see Appendix B). However traffic projections in the EIS show around 9,000 vehicles/hour for both directions in both the 'without project' and 'with project' scenarios. Hourly traffic volumes for the Sydney Harbour Tunnel (two lanes in each direction) would be up to 25 per cent higher than the capacity of the link (highlighted in Figure 5.). This is not physically possible.

Figure 5. Hourly volumes for roads on Cross-harbour screenline

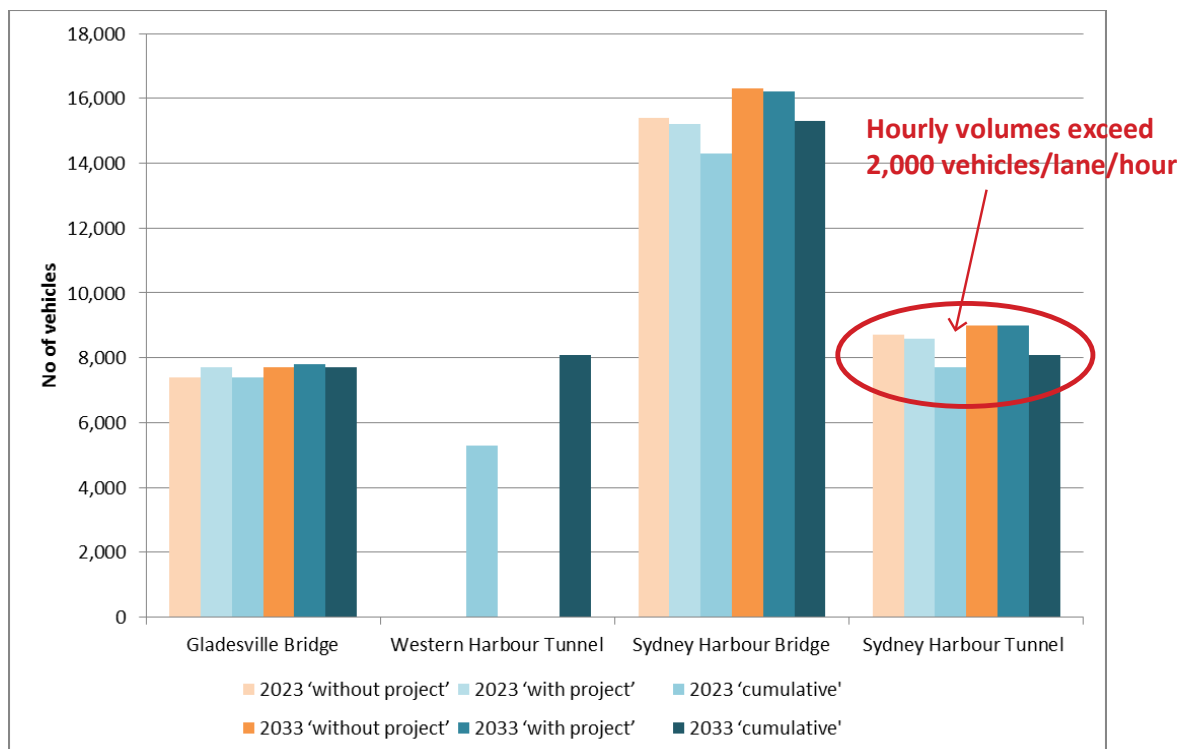


Figure 9-8 Cross-harbour screenline: comparison of two-way AM peak one hour volumes

Source: WRTM v2.3, 2017

- Projected traffic volumes for the Sydney Harbour Tunnel are above the capacity for the road for the 'with', 'without' and 'cumulative' project scenarios for the AWT estimates shown in Figure 6. This is not physically possible.

Figure 6. Traffic volume estimates from the WRTM for the Sydney Harbour Bridge and Tunnel

Table 9-7 Cross-harbour screenline: WRTM comparison for with and without project scenarios – AWT volumes

Direction	Location	2023 'without project'		2023 'with project'		Change	2033 'without project'		2033 'with project'		Change
		Volume	Share	Volume	Share		Volume	Share	Volume	Share	
Northbound	Gladesville Bridge	41,700	21%	43,800	21%	5%	44,800	21%	46,500	22%	4%
	Western Harbour Tunnel	—	—	—	—	—	—	—	—	—	—
	Syd Harbour Bridge	106,400	52%	108,300	53%	2%	111,800	52%	114,300	53%	2%
	Syd Harbour Tunnel	54,800	27%	52,400	26%	-4%	56,500	27%	55,100	26%	-2%
	Total	202,900		204,500		1%	213,100		215,900		1%
Southbound	Gladesville Bridge	48,200	24%	51,600	26%	7%	49,000	23%	52,000	25%	6%
	Western Harbour Tunnel	—	—	—	—	—	—	—	—	—	—
	Syd Harbour Bridge	87,800	44%	87,100	43%	-1%	94,600	45%	93,800	44%	-1%
	Syd Harbour Tunnel	64,000	32%	63,100	31%	-1%	66,100	32%	65,300	31%	-1%
	Total	200,000		201,800		1%	209,700		211,100		1%
Two-way	Gladesville Bridge	89,900	22%	95,400	23%	6%	93,800	22%	98,500	23%	5%
	Western Harbour Tunnel	—	—	—	—	—	—	—	—	—	—
	Syd Harbour Bridge	194,200	48%	195,400	48%	1%	206,400	49%	208,100	49%	1%
	Syd Harbour Tunnel	118,800	29%	115,500	28%	-3%	122,600	29%	120,400	28%	-2%
	Total	402,900		406,300		1%	422,800		427,000		1%

Source: WRTM v2.3, 2017

Table 9-8 Cross-harbour screenline: WRTM comparison for without project and cumulative scenarios – AWT volumes

Direction	Location	2023 'without project'		2023 'cumulative'		Change	2033 'without project'		2033 'cumulative'		Change
		Volume	Share	Volume	Share		Volume	Share	Volume	Share	
Northbound	Gladesville Bridge	41,700	21%	49,900	24%	20%	44,800	21%	50,400	22%	13%
	Western Harbour Tunnel	—	—	16,900	8%	—	—	—	25,600	11%	—
	Syd Harbour Bridge	106,400	52%	95,800	46%	-10%	111,800	52%	106,100	47%	-5%
	Syd Harbour Tunnel	54,800	27%	45,400	22%	-17%	56,500	27%	45,000	20%	-20%
	Total	202,900		208,000		3%	213,100		227,100		7%
Southbound	Gladesville Bridge	48,200	24%	51,900	25%	8%	49,000	23%	52,800	23%	8%
	Western Harbour Tunnel	—	—	22,400	11%	—	—	—	29,500	13%	—
	Syd Harbour Bridge	87,800	44%	86,600	42%	-1%	94,600	45%	92,200	41%	-3%
	Syd Harbour Tunnel	64,000	32%	46,400	22%	-28%	66,100	32%	50,500	22%	-24%
	Total	200,000		207,300		4%	209,700		225,000		7%
Two-way	Gladesville Bridge	89,900	22%	101,800	25%	13%	93,800	22%	103,200	23%	10%
	Western Harbour Tunnel	—	—	39,300	9%	—	—	—	55,100	12%	—
	Syd Harbour Bridge	194,200	48%	182,400	44%	-6%	206,400	49%	198,300	44%	-4%
	Syd Harbour Tunnel	118,800	29%	91,800	22%	-23%	122,600	29%	95,500	21%	-22%
	Total	402,900		415,300		3%	422,800		452,100		7%

Source: WRTM v2.3, 2017

- Appendix A provides an explanation of how the capacity for roads is calculated and what they look like when viewing time series data of real traffic volumes as distinct from modelled results. Capacities for AWT and the more frequently used AADT volume estimates are dependent on the hourly capacities, and hourly capacities are known and can be estimated with greater accuracy than AWT and AADT.

Aside from the isolated outputs presented above, the EIS does not provide a readily accessible assessment of the impacts of traffic changes on key links. To facilitate this comparison, we have developed Table 2 and

- Table 3, below, which compare the hourly volumes for several key roads on the screenlines.

Table 2. Comparison of two-way AM peak hour traffic volume estimates from WRTM with capacities

Link	Capacity (veh/hr)	2023 With project		2023 Cumulative		2033 With project		2033 cumulative	
			VC ratio*		VC ratio		VC ratio		VC ratio
M4-M5 Link	16,0000	~ 5,000	0.31	~ 9,300	0.58	~ 5,800	0.36	~ 11,900	0.74
Sydney Harbour Tunnel	6,740**	~ 8,500	1.26	~ 7,800	1.16	~ 9,000	1.34	~ 8,000	1.19
Western Harbour Tunnel	8,000***	-		~ 5,100	0.64	-		~ 8,000	1.0
Sydney Harbour Bridge	16,000	~ 15,000	0.93	~ 14,000	0.88	~16,000	1.0	~ 15,100	0.94

Notes:

* Volume of traffic/capacity of road ratio

~ Approximate volumes are visual measurements taken from graphs in the EIS as no tables are provided.

** Calculations used to determine the practical capacity for the Sydney Harbour Tunnel are provided in Appendix B.

*** capacity for the Western Harbour Tunnel is difficult to calculate as there is no design. Configuration is likely to be similar to the Sydney Harbour Tunnel so the capacity would be lower and some volume/capacity ratios would exceed 1.

Table 3 Comparison of two-way PM peak hour traffic volume estimates from WestConnex Road Traffic Model with capacities

Link	Capacity (veh/hr)	2023 With project		2023 Cumulative		2033 With project		2033 Cumulative	
			VC ratio*		VC ratio		VC ratio		VC ratio
M4-M5 Link	16,0000	~ 5,000	0.31	~ 9,300	0.58	~ 5,800	0.36	~ 11,900	0.74
Sydney Harbour Tunnel	6,740*	~ 8,500	1.26	~ 7,800	1.16	~ 8,200	1.22	~ 7,000	1.04
Western Harbour Tunnel	8,000	-		~ 3,900	0.49	-		~ 5,100	0.64
Sydney Harbour Bridge	16,000	~ 13,800	0.86	~ 13,700	0.86	~14,000	0.88	~ 14,200	0.89

Notes:

~ Approximate volumes are visual measurements taken from graphs in the EIS as no tables are provided.

* Volume of traffic/capacity of road ratio

** Calculations used to determine the practical capacity for the Sydney Harbour Tunnel are provided in Appendix B

8.5.2. Conclusions: model raises fundamental questions about project accuracy

- Outputs from the WRTM raise several questions:
 - Why are there so many instances of traffic volume estimates that exceed the maximum hourly capacity, and by extension capacity, of the major arterials affected by the Project?
 - Why build the mainline tunnel at such a high capacity - and high cost - if much of the capacity would be unused?
 - Are the Western Harbour Tunnel and Beaches Link - estimated to cost the community \$14 to \$20 billion to construct — the best way to provide access between heavily congested centres and people living in the Northern Beaches where public transport is currently poor?
 - Would a simpler and lower cost set of connections enable network continuity between the existing M4 and Inner West motorway segments without creating the highly congested conditions brought on by building the Project?
- It appears that the proposed tollway links have been developed without any robust strategic assessment of transport needs throughout the region.
- Given that the scope of the Project now encompasses motorway proposals reaching from the far South of the Sydney Metropolitan Region to the Northern Beaches, strategic assessment is critical.

8.6. Impacts on the surface road network – assessment of operational modelling

- The Project would lead to significant impacts on numerous key intersections and surface roads near portals.
- To better understand the impacts of the Project the modelled Level Of Service for key intersections has been extracted, then tabulated and showed graphically on the operational boundary areas for the critical Rozelle, St Peters and Wattle Street areas (see Figure 7, Figure 8, Figure 9).
- The EIS does not provide 'without project' volume estimates for 2033 so they cannot be compared to the 2033 'with project' and 'cumulative' scenarios. This casts the validity of the EIS into doubt as it could be assumed this omission was made because the modelling outputs showed little benefits (or actual worsening) due to the Project relative to the base case.

Matters to be addressed
Matter 8.8 <ul style="list-style-type: none">• The Proponent shall provide a comparison of key traffic indicators of the future 2023 and 2033 scenarios compared to the future 'without project' case.

8.6.1. Rozelle Interchange operational model area

- In the Rozelle Interchange operational model area the EIS indicates that in the AM peak:

- Almost all intersections will have a worse Level Of Service compared with existing conditions
- Almost all intersections will have a worse Level Of Service if additional proposed motorways links are added to the network
- The Crescent and Johnston Street operate well until the construction of the Western Harbour Tunnel. When the Western Harbour Tunnel is constructed, significant volumes of traffic are expected to exit onto the Crescent and the City West Link.
- The EIS has a number of major shortcomings:
 - The Proponent has advised that they expect ‘improvements’ will need to be made to the Western Distributor, The Crescent, Johnston Street and Flood Street due to increased traffic levels. However, they have not provided information on what those improvements might be. Without that information it is difficult to assess the full impact of the Project on local traffic.
 - There is a significant risk that higher levels of traffic on the Anzac Bridge would result in traffic queues on and around the Rozelle Interchange. That would cause further degradation in the performance of the local road network beyond that modelled.
 - The modelling did not consider the traffic impacts on the strategic centres of the Sydney Central Business District, Ultimo, or Camperdown.
 - The EIS outlines the projected traffic changes at several major intersections in Rozelle and Annandale, however there are no results published for key intersections on the Western Distributor at Pyrmont, Darling Harbour or Sydney.
 - The intersection modelling outputs for the Project do not discuss projected queue lengths. This is different to the modelling for WestConnex Stage 1A (M4 Widening), which did outline projected queue lengths for key access roads. Queue length is a significant concern for the proposed motorway especially on the City West Link and the Anzac Bridge. Traffic queues risk blocking key motorway exits if not properly managed.
- Notwithstanding the omission of key modelling outputs, we can infer that the increased traffic flow will lead to reductions in network performance for other intersections in the affected area based on the increased volumes and worsening network performance outlined for the published intersections.
- There is a significant risk that the modelled intersection performance would not be achieved if levels of toll avoidance are higher than expected. The Proponent has advised that the Iron Cove Link will be un-tolled. As such we can expect traffic will switch to that route if it is faster and easier than Victoria Road.

Matters to be addressed

Matter 8.9

- The Proponent must provide projections of likely queue lengths caused by the Project, especially for the City West Link, Anzac Bridge, Western Distributor and intersections along the western edge of the Sydney city centre.

Figure 7. Rozelle Interchange operational model boundary + Level Of Service change overlay (AM Peak Hour)

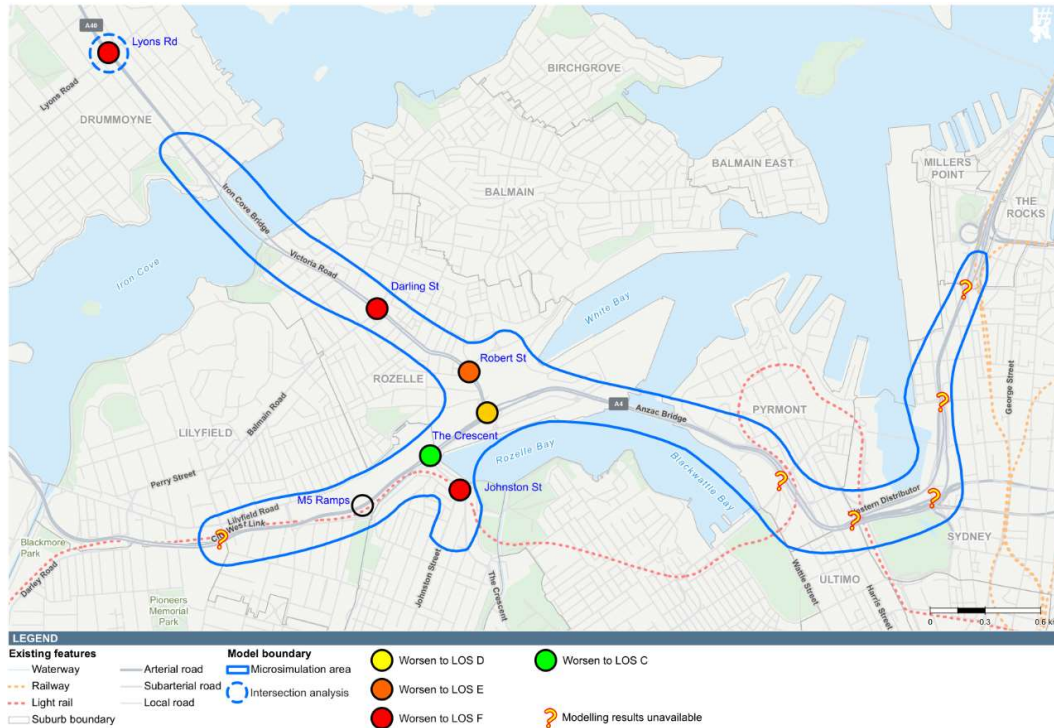


Table 4 Rozelle Interchange modelled impact on road network (AM Peak Hour)

Key Intersections		2015 Base Case	2033 Westconnex Stage 1,2	2033 Westconnex Stage 1, 2, 3	2033 Westconnex 1,2,3 + F6, WHT, NBL*
Victoria Rd	Lyons Rd	D	F	F	F
Victoria Rd	Darling St	F	F	F	F
Victoria Rd	Robert St	D	D	F	E
Victoria Rd	City West Link (The Crescent)	B	C	D	D
City West Link	The Crescent	B	B	D	C
The Crescent	Johnston St	C	D	C	F
The Crescent	M5 Ramps	-	-	B	B

* Western Harbour Tunnel, Northern Beaches Link

8.7. St Peters Interchange operational model area

- In the St Peters Interchange operational model area the EIS indicates that in the AM peak:
 - Almost all intersections will have a worse level of service than the current situation
 - Almost all intersections will have a worse level of service as additional proposed links are added to the network
- A key shortcoming of the operational modelling is that it offers no traffic outputs for key intersections between WestConnex and Sydney Airport/Sydney Port. This is highly unusual given the stated aims of the Project to connect Western Sydney to Sydney Airport/Sydney Port.

Matters to be addressed

Matter 8.10

- The Proponent must provide projections of likely changes in traffic volumes on the surface road network in the area around Sydney Airport and Sydney Port

Figure 8 St Peters Interchange operational model boundary + Level Of Service change overlay (AM Peak Hour)

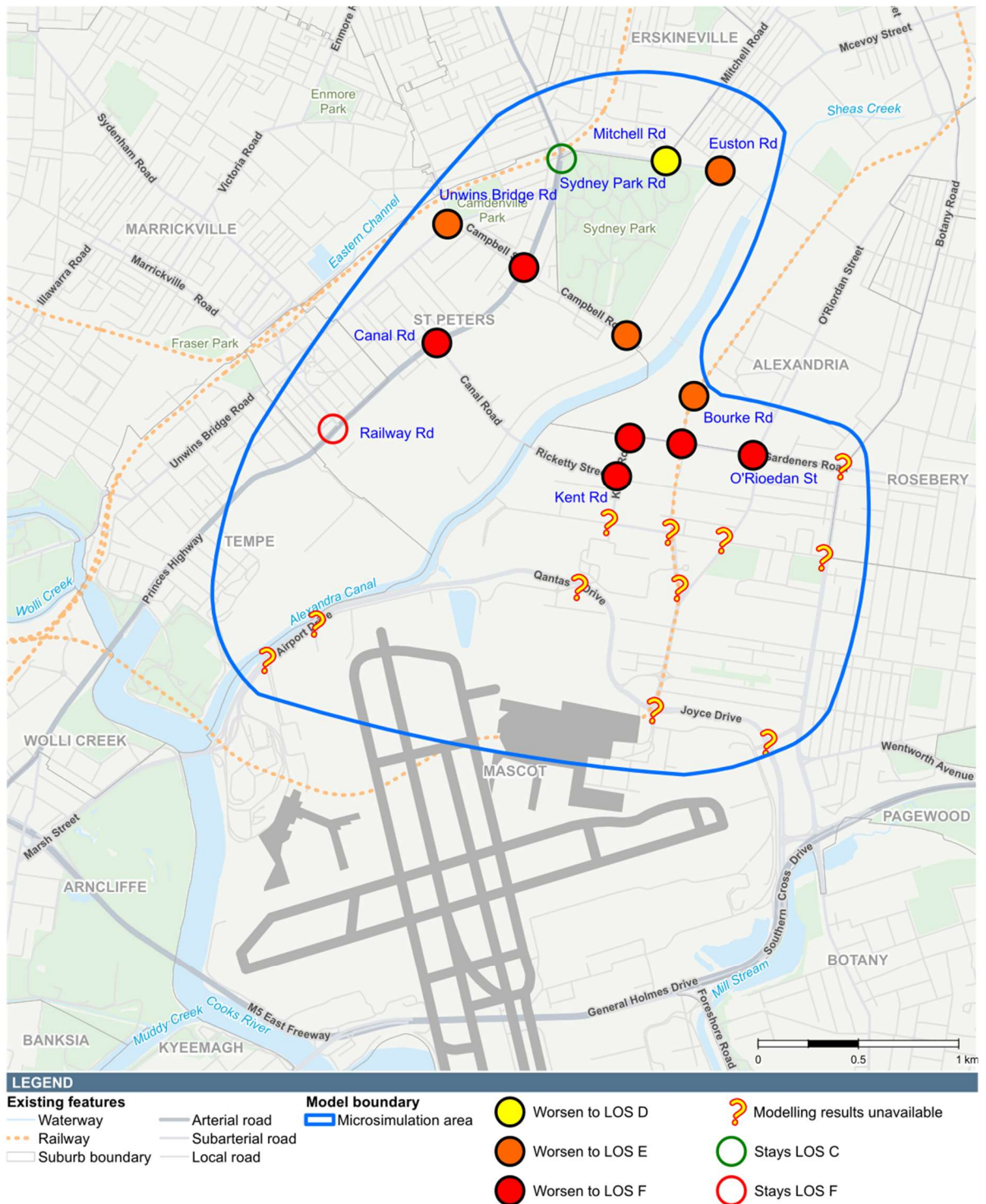


Table 5. St Peters Interchange modelled impact on road network (AM Peak Hour)

Key Intersections		2015 Base Case	2033 Do minimum Westconnex Stage 1, 2	2033 With project	2033 Cumulative Westconnex 1,2,3 + F6, WHT, NBL
Princes Hwy	Sydney Park Rd	C	F	C	C
Princes Hwy	Canal Rd	D	F	F	F
Princes Hwy	Railway Rd	F	F	F	F
Sydney Park Rd	Mitchell Rd	C	F	C	D
Euston Rd	Sydney Park Rd	A	F	D	E
Campbell St/Rd	Unwins Br Rd	C	F	F	E
Campbell St/Rd	Euston Rd	A	F	D	E
Campbell St/Rd	Bourke Rd	-	B	F	E
Campbell St/Rd	Princes Hwy	C	F	F	F
Ricketty St	Kent Rd	C	F	F	F
Gardeners Rd	Kent Rd	A	F	F	F
Gardeners Rd	Bourke Rd	C	F	F	F
Gardeners Rd	O'Riordan St	D	F	F	F

8.8. Wattle Street Interchange operational model area

- In the Wattle Street operational model area the EIS indicates that in the AM peak:
 - Most intersections will have a worse Level of Service than the current situation
 - Most intersections will have a worse Level of Service as additional proposed links are added to the network
- The Wattle Street Interchange has exits to:
 - Ashfield, and Georges River Road via Frederick Street
 - Croydon, and Burwood via Parramatta Road
 - Ashfield, Leichardt and Petersham via Parramatta Road

Figure 9 Wattle St Interchange operational model boundary + Level Of Service change overlay (AM Peak Hour)

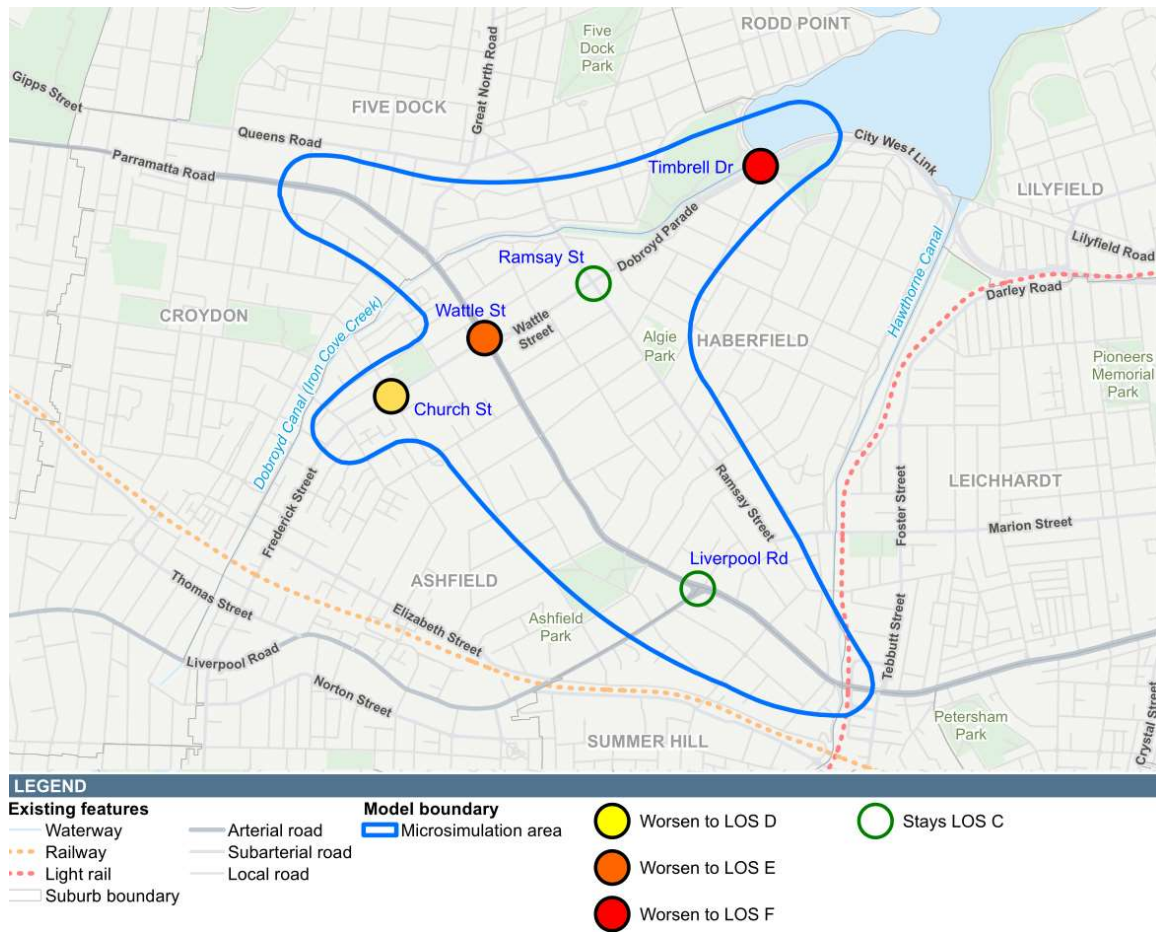


Table 6. Wattle Street Interchange modelled impact on road network (AM Peak Hour)

Key Intersections		2015 Base Case	2033 Westconnex Stage 1, 2	2033 Westconnex Stage 1, 2, 3	2033 Westconnex 1,2,3 + F6, WHT, NBL
AM Peak Hour					
Parramatta Rd	Liverpool Rd	C	C	C	C
Parramatta Rd	City West Link (Wattle St)	E	C	E	E
Frederick St	Church St	B	B	C	D
City West Link (Wattle St)	Ramsay St	C	C	C	C
City West Link	Timbrell Dr	C	F	D	C

8.9. Impacts on the surface road network – other issues

8.9.1. Incomplete traffic forecasts and lack of transparency

- The EIS has made it extremely difficult and complicated to compare traffic forecasts. This fails to meet the SEARs which require that 'the process for assessment of the proposal is transparent'. Easy comparisons tables and interactive maps should be provided showing traffic forecasts for all scenarios (from base to cumulative). This information is currently spread across nearly 100 pages in EIS.

Matters to be addressed

Matter 8.11

The Proponent shall provide comparison tables and descriptive graphics to enable readers to understand traffic forecasts for all scenarios (from base to cumulative). Traffic projections are currently provided in a confusing and opaque format (and sometimes not provided at all). This is contrary to the requirements of the SEARs.

8.9.2. Forecast issues on road network

- The analysis shows Anzac Bridge/Western Distributor is currently at or close to capacity, particularly in the AM peak where existing operational and geometric features of the road network limit the capacity (App H). As a result, the predicted increase in future scenarios cannot be accommodated without some form of traffic or network management. This future work must be assessed as part of this EIS.
- The EIS notes that Gardeners Road and Bourke Road may also be widened in future because of the Project. Any anticipated widening that requires land acquisition or will impact on surrounding communities must be assessed as part of this EIS.
- The EIS includes a comment that there will be more congestion in Mascot, Frederick Street, Ashfield and Johnston Street, Annandale. This raises the possibility that local streets will be widened, parking will be removed and more homes will be demolished. Any such impacts and works required by the Project must be outlined and assessed as part of this EIS. (p.8-103)

Matters to be addressed

Matter 8.12

- The Proponent shall identify any future traffic or network management changes or work required to accommodate projected traffic increases on the Anzac Bridge/Western Distributor as a result of the Project as part of this EIS.

Matter 8.13

- The Proponent shall identify any future traffic or network management changes or work required to accommodate projected traffic increases on Gardeners Road and Bourke Road as a result of the Project, as part of this EIS.

Matter 8.14

- The Proponent shall identify any future traffic or network management changes or work required to accommodate projected traffic increases on Mascot, Frederick Street, Ashfield and Johnston Street, Annandale as a result of the Project, as part of this EIS.

- The 2033 'cumulative' scenario analysis indicates traffic flows on the motorway will be denser compared to the 2033 'with project' scenario, with reduced Level Of Service in the peak hours. This is due to the additional motorway links in the 'cumulative' scenario (Western Harbour Tunnel, Beaches Link, Sydney Gateway, F6) drawing more traffic along the M4-M5 Link. Sections of the motorway including the tunnels, which are supposed to be the best performing parts of this type of project, are forecast to operate at Level of Service E in the peak hours (p278 App H). Level of Service E is the second longest delay possible and represents 'at capacity' where incidents would cause 'excessive delays'.
- The two-way volumes forecast for Ross Street, Forest Lodge, by 2033 under both the 'With Project' and 'Cumulative scenarios' (15,400 and 17,100 vehicles per day respectively) would struggle to be accommodated under the current geometrical constraints of the carriageway, particularly where Ross Street, and The Crescent further north, are limited to one lane in each direction (Pages 210, 211, Appendix H – Tables 9-3, 9-4). The City would like to know what assumptions have been included in the modelling scenarios for The Crescent/Minogue Crescent/Ross Street corridor in regards to vehicular capacity and lane configuration. Does the Proponent acknowledge that this corridor will need to be widened in the future to a four lane road between Parramatta Road and the City West Link to accommodate the additional traffic generated by the M4-M5 Link?

8.9.3. Inadequate consideration of traffic impacts of toll avoidance

- Table 8-1 outlines the SEARs for the EIS. Part 2a requires the Applicant to consider the operational transport impact of toll avoidance. Despite this requirement, the information provided on toll avoidance in Chapter 9.8 (Page 222) of Appendix H is limited to four short paragraphs and is inadequate.

Matters to be addressed

Matter 8.15

- The Proponent shall provide data showing how toll avoidance was considered for both the 2023 and 2033 scenarios – in particular, the difference between the patronage forecasts expected for the M4-M5 Link with no toll avoidance and the patronage forecasts expected for the M4-M5 Link with toll avoidance considered in the matrices.

Matter 8.16

- The Proponent shall document the assumptions in the modelling for The Crescent/Minogue Crescent/Ross Street corridor in regards to vehicular capacity and lane configuration?

- Page 8-9 – Table 8-2 outlines the modelling scenarios tested for the EIS. A further scenario must be tested that models the 2023 and 2033 'With Project' options and includes rates of toll avoidance that mirror previously-delivered toll road projects like the Cross City Tunnel, Lane Cove Tunnel, M4 Widening. This would provide a snapshot of what the surface road network could look like if the future traffic volumes using the M4-M5 Link fall short of the patronage forecasts provided in the EIS and enable the identification of associated mitigation measures required on the surface road network to achieve the patronage forecasts.

Matters to be addressed

Matter 8.17

The Proponent shall test a scenario that models the 2023 and 2033 'With Project' options and includes rates of toll avoidance that mirror previously-delivered toll road projects like the Cross City Tunnel, Lane Cove Tunnel, M4 Widening.

- Page 8-9 – given the Western Sydney Airport will be operational by 2033, the Proponent must advise on whether the 2033 scenarios listed in Table 8-2 factor in that some traffic travelling from Western Sydney to Sydney Kingsford Smith Airport in 2023 will divert to the Western Sydney Airport in 2033. The diverted trips should not be included in the 2033 scenarios.

Matters to be addressed

Matter 8.18

- Proponent shall advise on whether the 2033 scenarios listed in Table 8-2 factor in that some traffic travelling from Western Sydney to Sydney Kingsford Smith Airport in 2023 will divert to the Western Sydney Airport in 2033. The diverted trips should not be included in the 2033 scenarios. If the diverted trips are included in the 2033 scenario, a new scenario shall be prepared that does not include the diverted trips.

- Page 8-9 – It appears that the modelling scenarios presented in Table 8-2 do not include the King Street Gateway or Alexandria to Moore Park Connector. These should be included, particularly given other projects like Western Harbour Tunnel, Northern Beaches Link and the F6 Extension have been included and appear in the 'Cumulative' scenarios, even though these are yet to be confirmed by the NSW Government.

Matters to be addressed

Matter 8.19

- Proponent shall advise on whether the modelling scenarios listed in Table 8-2 include the King Street Gateway and the Alexandria to Moore Park Connector. If they do not, new scenarios shall be prepared that include them.

8.9.4. No consideration of weekend traffic impacts

- Given that some sections of the road network in the study area experience traffic levels in the Weekday Lunch Peak that are close to, or exceed, the Weekday AM and Weekday PM peak periods, the Proponent should assess the impact of the Project on weekend traffic volumes in order to understand the likely impacts on the surface road network and surrounding community.

Matters to be addressed

Matter 8.20

- The Proponent shall analyse the impact of the M4-M5 Link on weekend traffic volumes.

8.9.5. Model areas are insufficient

- Page 8-14 – the model boundary shown in Figure 8-5 needs to be extended South along both Johnston Street and The Crescent/Minogue Crescent/Ross Street corridor to Parramatta Road to provide clarity on how these feeder routes are envisaged to operate in 2023 and 2033 and how the modelling assumptions are applied (e.g. are the two corridors modelled using existing geometry or are they modelled with increased capacity?)
- Page 8-14 –the model boundary shown in Figure 8-6 needs to be extended North along Mitchell Road to Henderson Road; North and East along Euston Road/McEvoy Street corridor to Botany Road; and North along Bourke Road to Botany Road to provide clarity on how these feeder routes are envisaged to operate in 2023 and 2033 and how the modelling assumptions are applied (e.g. are the corridors modelled using existing geometry or are they modelled with increased capacity?).

Matters to be addressed

Matter 8.21

- The Proponent shall extend the operational modelling boundaries (shown in Figure 8-5 and 8-6 of the EIS) and redo operational modelling in order to provide a more realistic assessment of likely impacts on the surface street network. Suggested minimum extensions of boundaries are outlined below:
 - Boundary shown in Figure 8-5 needs to be extended South along both Johnston Street and The Crescent/Minogue Crescent/Ross Street corridor to Parramatta Road
 - Boundary shown in Figure 8-6 needs to be extended north along Mitchell Road to Henderson Road; North and East along Euston Road/McEvoy Street corridor to Botany Road; and North along Bourke Road to Botany Road

8.9.6. Questionable improvements in safety

- Crash analysis presented on Page 8-149 compares road crashes forecast under the 2023 'With Project' and 'Cumulative' scenarios. The analysis concludes that 'with crash rates on motorways much lower than on surface arterial roads, a general reduction in accidents would be expected'. This statement seems to be overly optimistic, particularly given the high frequency of rear end crashes on motorways during peak periods, as well as the fact that higher speeds tend to considerably increase the severity of crashes when compared with crashes at lower speeds. It also fails to consider crashes caused due to increased traffic on surface roads related to the Project.

Planning conditions required to avoid or mitigate impacts

Condition 8.4

- a. Monitoring of traffic conditions including vehicle types, quantities and travel times against the stated project objectives is to be conducted on the following corridors both 1 year and 5 years after opening of the project to traffic:
- City West Link
 - Parramatta Road
 - Victoria Road
 - King Street
 - Princes Highway
 - Southern Cross Drive
 - King Georges Road, north of the existing M5 East Motorway
 - Stanmore Road
 - Sydenham Road
 - Mascot
- b. The results are to be publicly reported at regular intervals.

Condition 8.5

Bus travel times on Parramatta Road and Victoria Road are to be monitored on an ongoing basis and regularly, publicly reported.

Condition 8.6

Road incidents involving pedestrians, bicycles and all vehicles within 1km radius of the Rozelle and St Peters interchanges are to be monitored on an ongoing basis and regularly, publicly reported.

Condition 8.7

Consistent with the RMS Smart Motorways program the Project is to include continuous monitoring of traffic conditions including vehicle types, quantities and travel times. The results are to be publicly reported at regular intervals.

8.10. The Project will reduce bus performance and reliability.

- The EIS notes that traffic on Anzac Bridge will increase by 2023 (p.8-103). Traffic modelling shows bus times into the city in the morning peak will be slower (p.3-19).
- The Project offers no protection to travel time and reliability of Victoria Road bus services. Since the Project was announced, the NSW Government has put the Victoria Road Bus Rapid Transit project 'on-hold'.

- No assessment is made of other bus routes affected by the traffic congestion caused by the Project. Notably, no comment is made on impacts of bus services in the Sydney city centre.

Matters to be addressed
Matter 8.22 <ul style="list-style-type: none"> • The Proponent must assess the likely impacts of the Project on bus services in terms of travel time and reliability for bus routes to and within the Sydney city centre and for routes near tollway portals

Planning conditions required to avoid or mitigate impacts
Condition 8.8 The Proponent must identify and implement measures and mechanisms to maintain or improve bus speed and reliability relative to current levels

8.11. Council disputes unspecified road 'upgrades'

- The EIS notes that RMS would develop the *M4-M5 Link Road Network Performance Review Plan* based on an 'Operational Traffic Performance Review' undertaken 12 months and five years after the M4-M5 Link opens. The review will consider the need for 'post-opening mitigation measures' (Page 223, Chapter 9.8, Appendix H).
- In other parts of the EIS, reference is made to 'network integration works'. The nature of these 'mitigation measures' and 'integration works' are not specified. Their impacts could be significant and must be detailed in the EIS.
- The EIS provides no details of the 'program of network integration works to upgrade roads affected by the Project' despite the fact that these works could affect numerous road corridors.
- The City questions the definition of 'upgrades' used in the EIS as it is understood to include intersection and road widening, banning parking in local centres, removal of trees, footpaths and cycling facilities. Council is unlikely to accept any these outcomes.
- Where the Project risks leading to additional traffic demand on the surface street network, the priority will be to protect the amenity of the local areas and avoid these impacts by constraining traffic flows and the associated noise, emissions and safety risks.
- The objectives of the review are unclear – they should be to maintain or reduce surface traffic levels.
- Key questions that must be addressed regarding any performance review plan are:

- How will this review relate to similar reviews proposed for the New M5 Project in the streets surrounding the St Peters Interchange one year (2012) and five years (2026) after the project opens?
- What is the study boundary for the 'Operational Traffic Performance Review'?
- Will the focus be primarily on State Roads or also include analysis of Council-owned Regional and Local Roads?
- Will local Councils be directly involved in developing the scope of the 'Operational Traffic Performance Review'?
- Has specific budget been set aside by the NSW Government to fund mitigation measures identified by the 'Operational Traffic Performance Review'?
- Will RMS be responsible for delivering mitigation measures identified by the 'Operational Traffic Performance Review' even on Council-owned Regional and Local Roads?
- What are the nature of mitigation works? Could they include intersection and road widening, banning parking in local centres, removal of trees, footpaths and cycling facilities?

Planning conditions required to avoid or mitigate impacts

Condition 8.9

- a. In advance of determination, the Proponent shall provide details of the '*program of network integration works to upgrade roads affected by the Project*' discussed in the EIS. Details shall include:
 - i. Nomination of the road corridors that will be affected
 - ii. Details of the nature of works incorporated in the 'upgrade'. E.g. intersection and road widening, banning parking in local centres, removal of trees, footpaths and cycling facilities.
- b. Where the Project risks leading to additional traffic demand on the surface street network, the priority will be to protect the amenity of the local areas and avoid these impacts by constraining traffic flows and the associated noise, emissions and safety risks
- c. The Proponent shall provide assurances that any 'upgrades' on surface roads affected by the Project will protect the amenity of the local areas and avoid these impacts by constraining traffic flows and the associated noise, emissions and safety risks.
- d. The Proponent shall provide assurances that capacity upgrades on roads feeding the Project will not be undertaken to deliver toll paying drivers to/from the privately owned WestConnex as there is strong potential for a conflict between private profit and community impacts.

Condition 8.10

- a. Within three months of the date of this approval, unless otherwise agreed by the Secretary in consultation with the City of Sydney Council, the Proponent must

- establish a Road Integration Transport Working Group to direct and guide the development and assessment of the proposed network integration strategy
- b. The working group key functions are to include establishing the objectives and parameters of the proposed network integration strategy and guiding their design and implementation.
 - c. The working group is to be comprised of the following relevant experts or their nominees:
 - i. relevant local Councils
 - ii. Roads and Maritime Services
 - iii. Transport for NSW
 - iv. and relevant Bicycle User Groups
 - d. The working group is to:
 - i. meet at least four times a year, or as otherwise agreed by the working group;
 - ii. all members to be invited to all meetings
 - iii. keep a record of meeting minutes and a schedule of action items arising from the meeting.

Condition 8.11

The following active transport links shall be included in the Network Integration Strategy referred to in condition 8.10 above:

- a. Traffic separated cycle lane on Victoria Road between Robert Street Rozelle and Springfield Street Rozelle (C2 in Figure 7.1 of Appendix N)
- b. Traffic separated cycle lane on Johnston Street Annandale (A3 in Figure 7.1 of Appendix N)
- c. Traffic separated cycle lane on Lilyfield Road (currently under development by Inner West Council)
- d. Bicycle connections in the Inner Sydney Regional Bike Network within 1km of the Rozelle interchange
- e. Bicycle connections in the Inner Sydney Regional Bike Network within 1km of the St Peters interchange

Condition 8.12

The following public transport improvements shall be included in the Network Integration Strategy referred to in condition above:

- a. Exclusive dedicated public transport lanes on Parramatta Road between Burwood and Sydney city centre.
- b. Exclusive dedicated public transport lanes on Victoria Road between Burns Bay Road and Sydney city centre.

Matters to be addressed

Matter 8.23

- The *M4-M5 Link Road Network Performance Review* must be integrated with the Review Plan proposed for the New M5 Project in the streets surrounding the St Peters Interchange.
- Details of the study boundary for the 'Operational Traffic Performance Review' must be made public before a determination is made.
- The objectives of the review must be to maintain or reduce surface road traffic levels.
- The Proponent must advise whether the performance review will focus primarily on State Roads or also include analysis of Council-owned Regional and Local Roads?
- Local Councils must be directly involved in developing the scope of the 'Operational Traffic Performance Review'
- A specific budget must be set aside by the NSW Government to fund mitigation measures identified by the 'Operational Traffic Performance Review'
- Roles and responsibilities must be defined for the delivery of mitigation measures identified by the 'Operational Traffic Performance Review' on Council-owned Regional and Local Roads
- The nature of mitigation works must be described and analysed before the EIS is determined. This includes intersection and road widening, banning parking in local centres, removal of trees, footpaths and cycling facilities.

- The EIS (App H, p.269) refers to RMS' plans to carry out 'network integration' works surrounding the Rozelle interchange once the Project is complete but offers little detail of the nature of the works. It only mentions the intersection of the Western Distributor and Pyrmont Bridge Road at Pyrmont, Western Distributor near Darling Harbour and a review of kerbside uses near Western Distributor, The Crescent, Johnston Street and Ross Street).
- Given that these mitigation or network integration works could be undertaken to deliver toll paying drivers to the privately owned WestConnex, there is strong potential for a conflict between private profit and community impacts.

8.12. Active Transport

8.12.1. Insufficient consideration of people walking and their safety

- The *WestConnex Updated Strategic Business Case* (2015) includes direct benefits to the community including reductions in road incident costs. No details have been provided about how this would be achieved.
- The SEARs requires an assessment of the likely risks to public safety with particular attention to pedestrian safety. The EIS completely fails to address this requirement.
- In chapter 8, Traffic and Transport, pedestrian safety is not mentioned at all. Discussion about pedestrian issues almost entirely refers to diversions, longer

walking times to bus stops or light rail and safety impacts as a result of construction vehicles or faster flowing traffic.

- Discussions on crashes focuses on traffic crashes conforming with guidelines for reporting and classifying road vehicle crashes.
- Appendix H acknowledges pedestrian safety issues as a result of freer flowing traffic on Victoria Road but offers nothing to address the issue.
- During construction pedestrians would be diverted via longer walking routes including steep hills and long delays at traffic signals. Pedestrians would have to navigate heavy vehicles on Parramatta Road, Pyrmont Bridge Road, Victoria Road and Darley Road and Campbell Road.
- The EIS dismisses the construction impacts on pedestrian movements by saying changes would be confirmed following the appointment of the design and construction contractor.
- The NSW Government failed to deliver any pedestrian improvements to Victoria Road with duplication of the Iron Cove Bridge in 2011. Despite claims that the \$175 million project would provide active transport facilities, footpaths remain barren and hazardous with long waiting times to cross roads. Should this Project go ahead, it must include improvements to the walking environment on Victoria Road with improved footpaths and street trees.

Matters to be addressed

Matter 8.24

- The Project must improve the walking environment on Victoria Road, including improving footpaths and planting street trees.

8.12.2. Failure to consider and assess active transport projects

- Active transport links under development have not been assessed as part of the Cumulative Impact Assessment in chapter 26, or in Appendix C. This includes the GreenWay linking Dulwich Hill and Drummoyne and the City West bicycle link connecting Haberfield with The Bays Precinct. These projects were not included in the cumulative assessment despite overlapping with and adjacent to the Project footprint (a criterion for cumulative assessment).
- In 2011, Stage 1 of the Inner West Light Rail extension included the GreenWay active transport link before it was deferred by the State Government. The Greenway project is well developed and has strong community support. Failure to assess the Project demonstrates a major failure in the strategic coordination of NSW Government work.
- The draft District Plan for the Central District specifies actions to 'improve connections and amenity along the WestConnex corridor' including better north–south connections across Parramatta Road. The Greenway would achieve this.
- The Inner City Regional Bike Network was not considered in the Cumulative Impact assessment even though it has been identified by Infrastructure Australia as a Priority Initiative and a review of the business case is now underway.

- The Westconnex program includes a new cycleway and pedestrian bridge over the Alexandra Canal at Campbell Road. The Project has not considered the potential to connect Alexandra Canal shared path with the M5 East bike route.
- The failure to assess these projects and provide assurance of their delivery represents an oversight in considering integrated transport options.
- Connections with surrounding local streets are important to encourage local walking and riding to the Glebe Foreshore, Fish Markets, Rozelle growers market, Callan Park and Victoria Road buses. Failure to provide these links means more people will drive to local destinations creating more congestion on the network.
- The Active Transport Strategy in Appendix N does not adequately identify existing or potential bicycle routes as required by the SEARs.
- Maps in the EIS identifying existing bicycle routes include incorrect and impossible links through private property, via the disused Glebe Island Bridge and on streets barely used by riders because they are steep and busy with traffic.
- The maps and written information are unclear and inconsistent. Some proposed projects already exist and experience long delays and are extremely unpleasant to travel through, especially when walking.
- The Strategy does not provide any certainty about the construction of active transport links or other changes needed to accommodate them, such as upgrading of traffic signals or the use of RMS owned land.
- The two separated cycleways proposed on Victoria Road near Robert Street and near Springside Street are isolated. They need to be joined with a protected cycleway along Victoria Road between the Iron Cove and Anzac Bridges as shown in the Active Transport Strategy (Figure 4.5, Appendix N, p21). Assurance must be provided about the implementation of this facility in the short term.
- Certainty must be provided that the separated cycleway in Johnston Street Annandale shown in the Active Transport Strategy (Figure 5.5, Appendix N, p28) will be fully implemented in the short term.
- The pedestrian and cyclist links proposed for the Rozelle Rail Yards do not provide adequate links with surrounding streets, particularly north of the Yards and require people to make long diversions.
- The removal of the two overhead bridges on Victoria Road and City West Link is intended early in construction. These bridges are very well used. Removing them will create longer walking and riding routes with significant delays and poor amenity for walking. The removal of these bridges must be delayed and alternative routes with comparable amenity and travel time provided to enable walking and riding between Anzac Bridge, Lilyfield Road and the City West Link?
- If the Project is approved, the traffic lights at Robert Street must be upgraded as soon as these bridges are removed to provide a crossing of Victoria Road by pedestrians and bicycle riders. This would also support the proposed separated cycleway in Victoria Road linking the Rails Yards and Robert Street.
- The Project proposes permanent closure of Buruwan Park. This is a very popular walking and cycling link to the light rail station, Glebe foreshore, Leichhardt and Rozelle. Access to the park must be retained. The alternative access outlined is long, steep and circuitous. If the Project is approved, Buruwan Park must only be closed after other active transport links are completed including bridge near Whites Creek, the bridge linking The Crescent and the Rozelle Rail Yards and the underpass linking Anzac Bridge with the Rail Yards.

- Some maps (such as Figure 7.1 of Appendix N and Figure 5.6 of Appendix L) show a link to Gordon Street, Rozelle. Other maps do not show this link and it is not listed in the active transport network summary in the Active Transport Strategy. This link must be included.
- If the Project goes ahead a working group must be convened for development and implementation of the network integration strategy to be developed for the areas surrounding the Rozelle interchange by RMS. The working group must include relevant local government, Bicycle User Groups and Transport for NSW. The group should be established immediately following determination of the Rozelle and St Peters interchanges. Active transport infrastructure not identified in the EIS and/or Instrument of Approval must be specified in the network integration strategy.

Matters to be addressed
<p>Matter 8.25</p> <ul style="list-style-type: none"> • The Determination must provide certainty about the provision of active transport links. The Project Description must be amended to include the active transport links. If the Project is approved active transport links must be explicitly documented in any Instrument of Approval involving the Rozelle interchange. Any Instrument of Approval must commit to their provision prior to opening of the Project to traffic.
<p>Matter 8.26</p> <ul style="list-style-type: none"> • The Proponent shall provide assurance that the two separated cycleways proposed on Victoria Road near Robert Street and near Springside Street will be joined with a protected cycleway along Victoria Road between the Iron Cove and Anzac Bridges as shown in the Active Transport Strategy (Figure 4.5 Appendix N, p21).
<p>Matter 8.27</p> <ul style="list-style-type: none"> • The Proponent shall provide certainty that the separated cycleway in Johnston Street Annandale shown in the Active Transport Strategy (Figure 5.5, Appendix N, p28) will be fully implemented in the short term.
<p>Matter 8.28</p> <ul style="list-style-type: none"> • Active transport links not delivered by the Project must be included in the Road Network Performance Review.

8.12.3. Inadequate consideration of construction impacts on pedestrians and bicycle riders

- The EIS commits to maintaining vehicle access on the road network with staged traffic plans during construction. Only 'minimal consideration' is given to maintaining access for active transport and public transport.


- Little information is provided about access during the five years of construction. The closure of popular walking and cycling links is proposed but no measures to address the needs of the users are proposed in response
- During construction the EIS states there will be longer walking times to bus stops and delays at intersections as well as reduced amenity for bus passengers waiting at stops. The criterion for assessing the impact on walking and cycling routes is based on distance only. It does not account for the additional time, difficulty or safety of any diversions. These matters must be considered when planning for people walking and cycling during construction.
- The EIS refers to temporary closures of the Victoria Road shared paths saying that one side would remain open at all times however, crossings on Victoria Road are spread out requiring steep or long deviations as well as delays with some intersections not currently providing any pedestrian access such as Victoria Road and Robert Street.
- Existing access for pedestrians and bicycles must be maintained throughout construction until equal alternative links are provided.

Planning conditions required to avoid or mitigate impacts

Condition 8.13

- a. To ensure the delivery of an integrated transport system, the following active transport links shall be delivered as part of the Project:
 - i. Separated cycle path connecting Anzac Bridge to Lilyfield Road at the western end of the Rozelle Rail Yards (A1 Figure 7.1 of Appendix N) and linking with the Glebe Island Bridge to Pyrmont
 - ii. Underpass of Victoria Road connecting Rozelle Rail Yards and the Anzac Bridge (A2 in Figure 7.1 of Appendix N)
 - iii. Separated cycle path connecting Victoria Road and the CSELR Maintenance Depot (A3 in Figure 7.1 of Appendix N)
 - iv. Traffic separated cycle path along Victoria Road connecting eastern side of Rozelle Goods Yard and Robert Street (C1 in Figure 7.1 of Appendix N). Traffic signals at Robert Street and Victoria Road to be upgraded to provide pedestrian/bicycle crossing of Victoria Road.
 - v. Traffic separated cycle path along Victoria Road connecting Springside Street, Rozelle to Iron Cove Bridge (C3 in Figure 7.1 of Appendix N)
 - vi. Existing shared paths on and connecting The Crescent, James Craig Road and Victoria Road to be retained (C4, C5 and C6 in Figure 7.1 of Appendix N)
 - vii. Bridge linking the intersection of Brenan Street and Railway Parade Annandale over/under the City West Link connecting to Rozelle Rail Yard links (D1 in Figure 7.1 of Appendix N)
 - viii. Shared path bridge connecting Easton Park to The Crescent through the Rozelle Rail Yards (E1 in Figure 7.1 of Appendix N)

<ul style="list-style-type: none"> ix. Shared path through Rozelle Rail Yards linking with Gordon Street Rozelle (shown and unlabelled in Figure 7.1 of Appendix N and Figure 5.6 of Appendix L) x. The pedestrian and bicycle bridge over the City West Link must be replaced once construction is complete. <p>b. Detailed designs of each of the above active transport works should be submitted for the approval of the Secretary, in consultation with the relevant Council, prior to their commencement.</p> <p>c. All active transport works shall be completed prior to the commencement of operation of the Project.</p>
<p>Condition 8.14</p> <p>a. To ensure the delivery of an integrated transport system, the following active transport links are to be funded for facilitation and delivery by other parties:</p> <ul style="list-style-type: none"> i. Shared path along the eastern side of Alexandra Canal linking Huntley Street and Gardeners Road and connecting with the M5 East bike route ii. Shared path on the Glebe Island Bridge linking The Bays Precinct and Pyrmont. iii. Pedestrian and bicycle separated paths alongside the inner west light rail line and linking Blackmore Oval Leichhardt and the open space at the Rozelle Rail Yards (providing an City West bicycle link) iv. Improvements to the footpaths on both sides of Victoria Road between the Project footprints Anzac Bridge and Iron Cove Bridge including footpath re-surfacing, installation of street trees, removal of obstructions (such as the pit barriers near the corner of Loughlin Street), new kerb ramps at intersections and removal of redundant driveways. <p>b. This infrastructure is to be specified in any network integration strategy to be developed by RMS.</p>
<p>Condition 8.15</p> <p>Existing access for pedestrians and bicycles is to be maintained throughout construction until alternative links generally equal in travel time, distance and effort required are provided.</p>
<p>Condition 8.16</p> <p>a. Functional and safe pedestrian and cyclist access through and around worksites must be maintained during construction. This includes the consideration of 'safer by design' principles including the provision of appropriate sight lines and lighting. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a satisfactory alternate route must be provided and signposted, including provision of footpaths where pedestrian access is reliant on grassed verges.</p>

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- b. Prior to the commencement of works, consultation is to be held with relevant local government and relevant bicycle user groups on the draft Construction Traffic and Access Management Plan (CTAMP). The Construction Traffic and Access Management Plan is not to be finalised until this consultation has occurred.

9. Air Quality

9.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The City of Sydney objects to the road being approved as it will lead to declines in air quality.
<ul style="list-style-type: none">• The M4-M5 Link EIS traffic figures used to estimate air pollution generated by WestConnex roads are alarmingly flawed and call into question the accuracy of the whole EIS.• The M4 East EIS states vehicles in the study area travelled 14.5 million kilometres each day in 2014 (p9.45). The M4-M5 Link EIS (p94) states 11.5 million kilometres are travelled each day. This substantial discrepancy is of grave concern and calls into question the EIS modelling.
<ul style="list-style-type: none">• Concentrations of PM2.5 (annual mean and 24 hour mean) and PM10 (max 24 hour mean) are near the current standard and in excess of proposed standards (p9-81, p9-93). Given the modelling omits to consider 3 million kilometres per day being travelled in the study area, the impact on exceedances must be greater than currently stated.

Matters to be addressed
<p>Matter 9.1</p> <ul style="list-style-type: none">• Given that the air quality modelling is based on significantly compromised traffic modelling, and with poor air quality having a significant health impact, the EIS should not be approved until an independent, appropriately qualified reviewer has analysed the stated air quality outcomes and identified any deficits.

9.2. Vehicles

- Vehicles are becoming increasingly efficient, but more rigorous emissions standards incorporating Particulate Matter (PM) have only been in place in Australia since 2013 and only apply to emissions; there are no measures in place to reduce the significant non-emission vehicle contribution to particulates. In NSW

around 78% of the vehicle fleet was manufactured before these regulations were put in place²³.

- The significant declines in pollutant reported in the EIS are largely due to improvements to in-vehicle technology and fuel. However, plans to improve standards for heavy vehicles, which disproportionately contribute to nitrogen oxide emissions and thus ozone, appear to have stalled.
- The EIS needs to provide a model of the air quality impacts due to delays in adopting improved emission standards.

Matters to be addressed

Matter 9.2

- Before a determination is made the proponent must model the air quality impacts due to delays in adopting improved emission standards.

9.3. Ventilation stacks

- The St Peters and Rozelle interchanges are of particular concern. St Peters will have large volumes of vehicles accelerating and decelerating as they enter and exit tunnels and access roads, next to proposed playing fields. This is complicated by emissions stacks located in the Interchange – pollution from the interchange would be intensified by the emissions from the stacks.
- The Rozelle interchange has an unprecedented concentration of stacks, in a valley, adjacent to densely populated suburbs. The interchange has long, steep climbs, which will increase emission concentrations, which will then be pumped into the surrounding area. The modelling does not account for stop-start conditions, yet the EIS shows significant traffic volumes heading onto the Anzac Bridge. There will be significant queues heading into the tunnels, greatly increasing the level of emissions. The bridge currently operates at the lowest Level of Service (F) in peak times.
- The existing M5 in peak conditions may provide a more realistic base line.

Planning conditions required to avoid or mitigate impacts

Condition 9.1

All stacks must have proper scrubbing facilities so that the air emitted is better than the receiving air.

²³ http://www.rms.nsw.gov.au/about/corporate-publications/statistics/registrationandlicensing/tables/table113_2017q2.html (accessed 20 September 2017)

9.4. Portals

- The EIS (9.2.5) states that the tunnel portals are required to operate with no emissions of air pollutants from the portals. Given the increase in traffic volumes, and anticipated congestion at portals there will most likely be concentrated zones of vehicular exhaust emissions.

9.5. Particulates

- Should the Project proceed, local surface roads will be widened and traffic volumes will increase. The dual effects of induced traffic and toll avoidance will see traffic volumes increase and congestion worsen, increasing exposure to particulate matter across metropolitan Sydney
- Research has shown that any exposure to particulate matter generated by traffic is detrimental to health: there is no safe exposure level. It is a classified carcinogen. Further, children, the elderly, people with chronic disease and people otherwise generally susceptible are particularly at risk of the health effects of traffic related particulate matter²⁴. These particulates are a classified carcinogen and are known to have critical, and at times fatal, consequences if elevated.
- The EIS shows that concentrations of PM_{2.5} and PM₁₀ in Sydney are already near the current Australian standard and in excess of proposed standards (p9-81, p9-93).
- The City objects to the omission of a figure for the annual mean PM2.5 concentration at community receptors (with-project (DS) and cumulative (DSC) scenarios, relative to corresponding Do Minimum scenarios) which would show exceedances at all receptors.

Matters to be addressed

Matter 9.3

- Before the EIS is determined the Proponent must publish a figure setting out the "annual mean PM2.5 concentration at community receptors (with-project (DS) and cumulative (DSC) scenarios, relative to corresponding Do Minimum scenarios)" in the same way it has been set out in Volume 1B, Figures 9-27, 9-33, 9-39, 9-45.

9.6. Ozone

- The EIS states that the impact on regional air quality is minimal and that the Project's impact on ozone is negligible. Ozone is a major pollutant and Western Sydney, and Campbelltown in particular, suffers the worst ozone pollution. Major components of ozone are generated in eastern Sydney and drift West. Previous

²⁴ Hime, D., Cowie, C. and Marks, G. (2015) Review of the health impacts of emissions sources, types and levels of particulate matter air pollution in ambient air in NSW (for NSW Environmental Protection Agency and NSW Ministry of Health, Environmental Health Branch). Woodcock Institute of Medical Research, Centre for Air Quality and Health Research and Evaluation, University of Sydney.

State environment agencies have previously discussed the need for an eight-hour standard for ozone (DECCEW, 2010, State of Knowledge: Ozone).

Matters to be addressed

Matter 9.4

- Before the project is determined the EIS should model the cumulative impact of proposed new motorways on an eight hour ozone standard of 0.08ppm.

9.7. Health impacts

- The adverse health impacts of living close to busy roads is well documented and studies looking specifically at Sydney have shown consistent results²⁵. These health impacts include increased mortality, respiratory and cardio-vascular disease, and adverse birth outcomes. Many other health impacts have also been associated with living near busy roads including cancers.
- While larger particulates are concentrated in road corridors, smaller particulates are more evenly spread across the urban area as the smaller particles remain airborne. People living within 500 metres of heavily affected areas have demonstrably shorter lives, much higher incidences of chronic lung conditions and higher levels of cardiovascular diseases.
- As two-thirds of the NSW population²⁶ lives in metropolitan Sydney in relatively close proximity to major roads, vehicles are one of the most important sources of PM exposure in NSW and therefore a significant contributor to negative health outcomes.

Planning conditions required to avoid or mitigate impacts

Condition 9.2

Future development of land (including re-zonings) in the vicinity of the Campbell Road ventilation facility requires planning controls to be developed to ensure future developments at heights 10 metres or higher are not adversely impacted by the ventilation outlets.

Condition 9.3

Construction Air Quality Management Plan be prepared to cover all construction phases of the project and be submitted to the Certifying Authority as proposed under the EIS Appendix I – Technical working paper: Air Quality.

²⁵ Hime, D., Cowie, C. and Marks, G. (2015) (as above)

²⁶ <http://www.planning.nsw.gov.au/projections> (accessed 20 September 2017) and <http://www.abs.gov.au> (accessed 20 September 2016). Calculation based on Greater Sydney ERP at 30 June 2016 and 2016 NSW Population Projections data.

Condition 9.4

A condition be imposed requiring compliance with the approved technical working paper: Air Quality (M4-M5 Link EIS, Prepared by Pacific Environment, dated August 2017).

Condition 9.5

A condition be imposed requiring monitoring at all sensitive receivers prior to construction and for at least the first 10 years of operation

Condition 9.6

A Construction Air Quality Management Plan (CAQMP) to detail how construction impacts on local air quality will be minimised and managed. The CAQMP must include, but not be limited to:

- a. identification of sources (including stockpiles and open work areas) and quantification of airborne pollutants including odour,
- b. key performance indicators for local air quality during construction,
- c. details of air quality monitoring methods, including location, frequency and duration of monitoring,
- d. methods for assessing meteorological conditions and measures that would be implemented during adverse meteorological conditions,
- e. best practice management mitigation measures to minimise impacts on local air quality including, but not limited to, the relevant revised environmental mitigation measures set out in the documents referred to in relevant DPE condition(s)
- f. measures for minimising the release of construction emissions from the site, including plant and equipment,
- g. procedures for record keeping and reporting against key performance indicators;
- h. provisions for implementation of additional mitigation measures in response to issues identified during monitoring and reporting, and
- i. mechanisms for the monitoring, review and amendment of the CAQMP.

Condition 9.7

The Proponent must carry out the SSI in accordance with the conditions of approval and generally in accordance with the M4-M5 Link Environmental Impact Statement, Air Quality Working Paper prepared by Pacific Environment, dated August 2017.

Condition 9.8

The Proponent must commence monitoring for at least twelve continuous months prior to operation and continue monitoring for at least ten years following the commencement of operation. At the conclusion of the ten years operational

monitoring period, the Proponent must review the need for the commencement of the continuation of the ambient monitoring stations in consultation with the AQCCC. Any recommendation to close any or all of the stations will require the approval of the Secretary in consultation with the EPA.

Condition 9.9

Monitoring results must be made publicly available and must be subject to an independent audit at six-monthly intervals (or at a longer interval, if approved by the Secretary). The auditor must be approved by the Secretary in consultation with the EPA, the AQCCC and relevant Council, and the auditor's report must be directly provided to the Proponent, the AQCCC and relevant Council.

Condition 9.10

- a. In addition to the general reporting requirements specified in relevant DPE condition(s), the Proponent must notify the Secretary, EPA, NSW Health and relevant Council of any recordings above the limits specified in relevant DPE condition(s) within 24 hours of the recorded event. The notification must detail the nature of the event, the concentration or visibility levels that occurred, the duration of the event, and the measures employed to minimise the concentration levels and/or improve the visibility levels.
- b. This notification must provide details of the circumstances of the event, including:
 - i. the nature and location of the event, including any details relating to the cause; (b) the duration of the event;
 - ii. the extent and severity of the event;
 - iii. the measures employed to minimise the concentration levels, and measures to improve visibility levels in the event that visibility levels were above the specified limit; and
 - iv. the frequency of the event, including whether an event with the same or similar circumstances has occurred previously.
- c. Based on consideration of the circumstances of the event, the Secretary shall request the Proponent to prepare a Tunnel Air Quality Management Systems Effectiveness Report, in accordance with relevant DPE condition(s).

Condition 9.11

The Proponent must monitor (by sampling and obtaining results by analysis) the pollutants, within the tunnel using the methodologies and frequency specified throughout the operation of the SSI. Monitoring must commence on the first day of operation of the SSI.

Condition 9.12

- a. In addition to general reporting requirements specified in relevant DPE condition(s), the Proponent must notify the Secretary, EPA, NSW Health and relevant Council of any reading above the limits specified in relevant DPE condition(s) within 24 hours of the recorded event. The notification must detail the nature of the event, the concentration or visibility levels that occurred, the duration of the event, and the measures employed to minimise the concentration levels and/or improve the visibility levels. This notification must provide details of the circumstances of the event, including:
 - i. the nature and location of the event, including any details relating to the cause
 - ii. the duration of the event
 - iii. the extent and severity of the event
 - iv. the measures employed to minimise the concentration levels, and measures to improve visibility levels in the event that visibility levels were above the specified limit
 - v. the frequency of the event, including whether an event with the same or similar circumstances has occurred previously.
- b. Based on consideration of the circumstances of the event, the Secretary shall request the Proponent to prepare a Tunnel Air Quality Management Systems Effectiveness Report, in accordance with relevant DPE condition(s).

Condition 9.13

- c. Within 20 working days of any request by the Secretary under condition relevant DPE condition(s), the Proponent must prepare and submit to the Secretary and relevant Council a Tunnel Air Quality Management Systems Effectiveness Report on the overall system performance and cause and major contributor of any exceedances, including:
 - i. the overall performance and concentration levels in the tunnel for the preceding six month period (or since commencement of operation, where the SSI has operated for under six months), including average and maximum levels and time periods;
 - ii. details of any instances throughout the operation of the SSI where pollutant concentration levels in the tunnel have exceeded the limits specified in conditions E4, E5 and E6; and
 - iii. consideration of improvements to the tunnel air quality management system. The Tunnel Air Quality Management Systems Effectiveness Report is to be prepared by the Proponent and reviewed by a suitably qualified and experienced independent specialist(s) whose appointment has been approved by the Secretary in consultation with relevant Council.
- d. The Proponent must comply with any requirements arising from the Secretary's review of the Tunnel Air Quality Management Systems Effectiveness Report.

Matters to be addressed
Matter 9.5 <ul style="list-style-type: none">• Future development of land (including re-zonings) in the vicinity of the Campbell Road ventilation facility requires planning controls to be developed to ensure future developments at heights 10 metres or higher are not adversely impacted by the ventilation outlets.

10. Noise and Vibration

10.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The operational noise impacts are based on questionable traffic modelling inputs and outputs and cannot be judged as reliable.
<ul style="list-style-type: none">• Residents adjoining the roadway will be subject to sleep disturbance noise 20dB in excess of sleep disturbance criteria along with significant ground borne noise, vibration impact and high levels of airborne noise.
<ul style="list-style-type: none">• Construction noise and vibration will have a considerable impact on the City and this is likely to continue for a number of years.
<ul style="list-style-type: none">• There is the potential for vibration to physically damage private property and heritage and culturally significant items.
<ul style="list-style-type: none">• Drafting fans associated with ventilation operations could pose noise impacts.

10.2. Questionable analysis of operational noise impacts

- The EIS states that not all noise impacts are assessed. The approval process has deferred assessment of impacts that may not be completely known until detailed assessments, not necessarily finalised at the EIS stage, are complete. This makes it difficult to comment on the EIS.

10.3. Noise impacts on community

- Sensitive receivers will be subject to sleep disturbance, ground borne noise, vibration impact and high levels of airborne noise.
- St Peters
 - The access point at St Peters has the potential to increase noise impact due to the intensified road traffic on the existing above ground road network.
- Rozelle
 - Operations to the north of Bicentennial Park and Glebe will breach noise criteria, including sleep disturbance criteria. Reported exceedances are up to 20 db. Properties in the City may not suffer the intense level of disturbance experienced by residents of the Inner West Council, due to distance separation.
- Camperdown
 - Properties adjoining Mallett Street will be subject to noise in 20dB in excess of sleep disturbance criteria

Planning conditions required to avoid or mitigate impacts

Condition 10.1

The Proponent must commence noise monitoring for at least twelve continuous months prior to operation on all surrounding roads which will experience significant increases to traffic volumes as a result of the project.

Condition 10.2

- a. A detailed Operational Noise Management Plan (ONMP) must be prepared as part of the ONMP required by condition E31 and submitted to the Secretary for approval. The ONMP must provide details of noise and vibration control measures to be undertaken during the operation stages, and generally in accordance with the NSW Road Noise Policy (DECCW, 2011) and the NSW Industrial Noise Policy (EPA, 2000).
- b. The ONMP must include, but not be limited to:
 - i. tests for ascertaining acoustic parameters;
 - ii. predicted noise levels;
 - iii. noise criteria for operation of the project based on the objectives of the NSW Road Noise Policy (DECCW, 2011) and the NSW Industrial Noise Policy (EPA, 2000);
 - iv. location, type and timing of erection of permanent noise barriers and/or other noise mitigation measures;;
 - v. specific physical and managerial measures for controlling noise;
 - vi. noise monitoring, reporting and response procedures including the monitoring on surrounding roads which experience significantly increased traffic volumes as a result of the project, and including operational facilities;
 - vii. procedures for operational noise and vibration complaints management, including investigation and monitoring (subject to complainant agreement).

Condition 10.3

- a. In addition to general reporting requirements specified in relevant DPE condition(s), the Proponent must notify the Secretary and relevant Council of any recordings above the limits specified in relevant DPE condition(s) within 24 hours of the recorded event.
- b. This notification must provide details of the circumstances of the event, including:
 - i. the nature and location of the event, including any details relating to the cause; (b) the duration of the event;
 - ii. the extent and severity of the event;
 - iii. the measures employed to mitigate operational noise levels above the specified limit; and

<p>iv. the frequency of the event, including whether an event with the same or similar circumstances has occurred previously.</p> <p>c. Based on consideration of the circumstances of the event, the Proponent must comply with any requirements arising from the Secretary's review of the report.</p>
<p>Condition 10.4</p> <p>Where noise monitoring confirms that noise impact exceeds the set criteria by more than 3dB, noise mitigation options must be implemented to reduce the noise impact to the lowest reasonable and feasible level or to be in accordance with set noise criteria for the project.</p>

10.4. Vibration may physically damage property, including heritage items

- Vibration is likely to have a significant impact on the City LGA, with potential for vibration to damage private property and heritage and culturally significant items.

11. Human Health Risk

11.1. Key Findings

Key Findings
<ul style="list-style-type: none">• A number of properties located within the project footprint were identified as having a high risk of contamination and these must be further investigated.
<ul style="list-style-type: none">• Project works could adversely impact soil, groundwater and surface water if not managed appropriately. The City has concerns that no further contamination assessments have been proposed prior to construction works.
<ul style="list-style-type: none">• There is significant potential for structural damage to be caused to property and heritage (including Aboriginal heritage) and the environment generally from vibrations.
<ul style="list-style-type: none">• The health assessment is inadequate. It does not consider, or assess, the increased health burden of disease resulting from more people driving.
<ul style="list-style-type: none">• Increased rates of driving will also lead to higher levels of crash related injuries and fatalities, with associated increases in health costs.
<ul style="list-style-type: none">• Motorists, and cyclists in particular, will be potential exposed to elevated levels of nitrogen dioxide (particularly during traffic congestion)

Matters to be addressed
<p>Matter 11.1</p> <ul style="list-style-type: none">• To ensure population health matters are considered with independence and authority the City strongly recommends that DPE appoint an independent population health expert to review the EIS and any submissions, commentary and the like made in relation to health issues, and publish an independent report. The briefing and direction set for the independent expert to be conducted by the Director of the Environmental Health Branch at NSW Health.

Planning conditions required to avoid or mitigate impacts

Condition 11.1

A Construction Environmental Management Plan (CEMP) shall be prepared for the Project in consultation with Councils and be submitted to the Secretary prior to commencement of works.

Condition 11.2

Conduct a comprehensive study into the vibration impacts of works which require demolition and surface rock breaking, vibro-compaction, piling, road-header mining, blasting, and similar high energy activities, to assess impacts to adjacent to vibration sensitive structures, in order to prevent cosmetic building damage and harm to building occupants. The study is to be conducted by a suitability qualified professional and submitted to the Secretary for approval prior to commencement of works. This report is to be prepared in consultation with the Council.

Condition 11.3

Subsequent to the above, a NSW EPA Accredited Site Auditor shall peer review the EIS and CEMP. The NSW EPA Accredited Site Auditor shall submit a Letter of Interim advice which certifies that the proposed CEMP will be suitable for the management of contamination at the site without conducting remediation.

Condition 11.4

Within three months from the date of construction, written certification from a suitably qualified person(s) shall be submitted to the appropriate regulatory authority, stating that all works/methods/procedures/control measures/recommendations approved in technical working paper: Air Quality (M4-M5 Link EIS, Prepared by Pacific Environment, dated August 2017) have been completed.

Condition 11.5

- a. All works removing asbestos containing materials must be carried out by a suitably licensed asbestos removalist duly licensed with WorkCover NSW, holding either a Friable (Class A) or a Non- Friable (Class B) Asbestos Removal Licence which ever applies.
- b. Five days prior to the commencement of licensed asbestos removal, WorkCover must be formally notified of the works. All adjoining properties and those opposite the development must be notified in writing of the dates and times when asbestos removal is to be conducted. The notification is to identify the licensed asbestos removal contractor and include a contact person for the site together with telephone number and email address.
- c. All works must be carried out in accordance with the Work Health and Safety

Regulation 2011 and the NSW Government and WorkCover document entitled How to manage and control asbestos in the work place: Code of Practice (NSW WorkCover) and the City of Sydney Managing Asbestos Policy.

- d. The asbestos removalist must use signs and barricades to clearly indicate the area where the asbestos removal work is being performed. Signs must be placed in positions so that people are aware of where the asbestos removal work area is and should remain in place until removal is completed and clearance to reoccupy has been granted. Responsibilities for the security and safety of the asbestos removal site and removal work area should be specified in the asbestos removal control plan (where required). This includes inaccessible areas that are likely to contain asbestos.
- e. Warning signs must be placed so they inform all people nearby that asbestos removal work is taking place in the area. Signs should be placed at all of the main entry points to the asbestos removal work area where asbestos is present. These signs should be weatherproof, constructed of light-weight material and adequately secured so they remain in prominent locations. The signs should be in accordance with AS 1319-1994 Safety signs for the occupational environment for size, illumination, location and maintenance.
- f. Asbestos to be disposed of must only be transported to waste facilities licensed to accept asbestos. The names and location of these facilities are listed in Appendix F of the City of Sydney's Managing Asbestos Guidelines.
- g. No asbestos products are to be reused on the site (i.e. packing pieces, spacers, formwork or fill etc.).
- h. No asbestos laden skips or bins are to be left in any public place without the approval of Council.
- i. A site notice board must be located at the main entrance to the site in a prominent position and must have minimum dimensions of 841mm x 594mm (A1) with any text on the notice to be a minimum of 30 point type size.
- j. The site notice board must include the following:
 - i. contact person for the site;
 - ii. telephone and facsimile numbers and email address; and
 - iii. site activities and time frames.

Condition 11.6

- a. Prior to the commencement of demolition and/or excavation work the following details must be submitted to and be approved by the Secretary demonstrating evidence of consultation with Council:
 - i. Plans and elevations showing distances of the subject building from the location of adjoining and common/party walls, and (where applicable) the proposed method of facade retention.
 - ii. A Demolition Work Method Statement prepared by a licensed demolisher who is registered with the Work Cover Authority. (The demolition by induced collapse, the use of explosives or on-site burning is not permitted.)

- iii. An Excavation Work Method Statement prepared by an appropriately qualified person.
- iv. A Waste Management Plan for the demolition and or excavation of the proposed development.
- b. Such statements must, where applicable, be in compliance with AS2601-2001 Demolition of Structures, the *Work, Health and Safety Act 2011* and Regulation; Council's *Policy for Waste Minimisation in New Developments 2005*, the *Waste Avoidance and Resource Recovery Act 2001*, and all other relevant acts and regulations and must include provisions for:
 - i. A Materials Handling Statement for the removal of refuse from the site in accordance with the Waste Avoidance and Resource Recovery Act 2001.
 - ii. The name and address of the company/contractor undertaking demolition/excavation works.
 - iii. The name and address of the company/contractor undertaking off site remediation/disposal of excavated materials.
 - iv. The name and address of the transport contractor.
 - v. The type and quantity of material to be removed from site.
 - vi. Location and method of waste disposal and recycling.
 - vii. Proposed truck routes, in accordance with this development consent.
 - viii. Procedures to be adopted for the prevention of loose or contaminated material, spoil, dust and litter from being deposited onto the public way from trucks and associated equipment and the proposed method of cleaning surrounding roadways from such deposits. (Note: With regard to demolition of buildings, dust emission must be minimised for the full height of the building. A minimum requirement is that perimeter scaffolding, combined with chain wire and shade cloth must be used, together with continuous water spray during the demolition process. Compressed air must not be used to blow dust from the building site).
 - ix. Measures to control noise emissions from the site.
 - x. Measures to suppress odours.
 - xi. Enclosing and making the site safe.
 - xii. Induction training for on-site personnel.
 - xiii. Written confirmation that an appropriately qualified Occupational Hygiene Consultant has inspected the building/site for asbestos, contamination and other hazardous materials, in accordance with the procedures acceptable to Work Cover Authority.
 - xiv. An Asbestos and Hazardous Materials Clearance Certificate by a person approved by the Work Cover Authority.
 - xv. Disconnection of utilities.
 - xvi. Fire Fighting. (Firefighting services on site are to be maintained at all times during demolition work. Access to fire services in the street must not be

<p>obstructed).</p> <p>xvii. Access and egress. (Demolition and excavation activity must not cause damage to or adversely affect the safe access and egress of the subject building or any adjacent buildings).</p> <p>xviii. Waterproofing of any exposed surfaces of adjoining buildings.</p> <p>xix. Control of water pollution and leachate and cleaning of vehicles tyres (proposals must be in accordance with the <i>Protection of the Environmental Operations Act 1997</i>).</p> <p>xx. Working hours, in accordance with this development consent.</p> <p>xxi. Any Work Cover Authority requirements.</p> <p>c. The approved work method statements and a waste management plan as required by this condition must be implemented in full during the period of construction.</p>
<p>Condition 11.7</p> <p>Prior to the commencement of work, suitable measures are to be implemented to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site. It is an offence to allow, permit or cause materials to pollute or be placed in a position from which they may pollute waters.</p>
<p>Condition 11.8</p> <p>All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter must have their loads fully covered before entering the public roadway.</p>
<p>Condition 11.9</p> <p>a. All fill imported onto the site shall be validated to ensure the imported fill is suitable for the proposed land use from a contamination perspective. Fill imported on to the site shall also be compatible with the existing soil characteristic for site drainage purposes.</p> <p>b. Council may require details of appropriate validation of imported fill material to be submitted with any application for future development of the site. Hence all fill imported onto the site should be validated by either one or both of the following methods during remediation works:</p> <ul style="list-style-type: none"> a. Imported fill should be accompanied by documentation from the supplier which certifies that the material is not contaminated based upon analyses of the material for the known past history of the site where the material is obtained; and/or b. Sampling and analysis of the fill material shall be conducted in accordance with NSW EPA (1995) Sampling Design Guidelines.
<p>Condition 11.10</p> <p>Any new information which comes to light during remediation, demolition or construction works which has the potential to alter previous conclusions about site</p>

contamination shall be notified to the Council's Area Planning Manager and the Certifying Authority immediately.

Condition 11.11

- a. No stockpiles of soil or other materials shall be placed on footpaths or nature strips unless prior approval has been obtained from the City's Construction Regulation Unit.
- b. All stockpiles of soil or other materials shall be placed away from drainage lines, gutters or stormwater pits or inlets.
- c. All stockpiles of soil or other materials likely to generate dust or odours shall be covered.
- d. All stockpiles of contaminated soil shall be stored in a secure area and be covered if remaining more than 24 hours

Condition 11.12

Prior to the exportation of waste (including fill or soil) from the site, the waste materials must be classified in accordance with the provisions of the Protection of the *Environment Operations Act 1997* and the *NSW DECC Waste Classification Guidelines, Part1: Classifying Waste (July 2009)*. The classification of the material is essential to determine where the waste may be legally taken. The *Protection of the Environment Operations Act 1997* provides for the commission of an offence for both the waste owner and the transporters if the waste is taken to a place that cannot lawfully be used as a waste facility for the particular class of waste. For the transport and disposal of industrial, hazardous or Group A liquid waste advice should be sought from the EPA.

Condition 11.13

The Proponent shall prepare a Targeted Public Health Program (TPHP) in relation to the Project to be submitted to the Secretary for approval, demonstrating evidence of consultation with Council and relevant state agencies (i.e. NSW Health, EPA) for approval prior to commencement of works. The TPHP must be maintained and funded via the tolls targeting regular users of the road and providing them with fitness services equivalent to the active component of an alternative public transport trip.

Condition 11.14

The Proponent shall submit an Annual Report to the Secretary following commencement of operation demonstrating increased spending on driver related safety programs which must be funded from the toll revenue seeking to achieve commensurate reduction in crash related Disability Adjusted Life Years to the increase attributable induced driving rates (above a realistic base).

12. Land Use and Property

12.1. Key Findings

Key Findings

- The Project would override the Government's intentions around housing, including affordable housing, and employment specified in *The Bays Precinct Transformation Plan*.
- There is too much uncertainty about how land acquired for the Project will be used in future.

Matters to be addressed

Matter 12.1

- As required by the SEARs the design and siting of project elements is to be located so functional, contiguous areas of residual land are maximised. Prior to finalisation of the final design, local government must be consulted to ensure this requirement is met.

Matter 12.2

- Any residual land on The Crescent is to be incorporated into the parkland and handed over to the City.

Matter 12.3

- To derive the claimed benefits of the Project on Parramatta Road, any future rezoning or redevelopment of this land must occur only after the delivery of improved public transport in exclusive dedicated lanes on Parramatta Road, between Burwood and Central Sydney, in accordance with the *Parramatta Road Corridor Urban Transformation - Implementation Plan 2016–2023*.

- This chapter outlines the acquisition of approximately 50 sites for construction, tunnelling and permanent operations centres. Sites occupied by peoples' homes and thriving businesses and close to aged-care facilities, childcare centres and schools which will be affected by five years of construction.
- Work in St Peters is located near high density development at Mascot and Green Square. The Bays Precinct will also soon commence major redevelopment and more traffic in these locations would reduce residential amenity, lessen land values and decrease the development potential for new housing as developers have to bear the additional costs of designing for noisy polluted environments.
- The Project would take land intended for housing, including affordable housing, and employment specified in *The Bays Precinct Transformation Plan* and

increased traffic around and within the Bay's Precinct on Bridge Road, Wattle Street and the Western Distributor will reduce the amenity and value of the investment in the renewal of the Bays Market District which is now underway.

- The Project is inconsistent with *The Bays Precinct Transformation Plan* by overriding intentions for housing and employment on the Rozelle Rail Yards. This would be irrational in a city wishing to provide housing near jobs and transport. The Rozelle interchange must not be given approval. Construction of the West Metro and retaining the current proposal for the Bays Precinct would provide transit-orientated development which is the growing trend in cities around the world.
- Increased traffic on Gardeners Road would require land use planning changes which is likely to decrease the value of land. Any intention to acquire future land for widening of Gardeners Road as part of the Road Network Performance Review by RMS must be clearly outlined before determination of the project.
- There is too much uncertainty about how land acquired for the project will be used in future, for e.g. the statement that parts of the Project's footprint not required for operations 'may be contemplated' for future redevelopment and may be retained by RMS for future road projects. Too often RMS-owned land no longer required is retained for many years and becomes derelict. The SEARs specify that the design and siting of project elements should be located in such a way that functional, contiguous areas of residual land are maximised. Prior to finalisation of the WestConnex Stage 3 design, the relevant local government authority must be consulted to ensure this requirement is met.
- Land adjacent to The Crescent is cited as land to be retained for future road infrastructure. This land must include walking and cycling connections as shown in the Active Transport Strategy, and any surplus land should be incorporated into the parkland.
- The Pyrmont Bridge Road tunnel site (C9) involves the removal of successful mixed businesses. To derive the claimed benefits of the project on Parramatta Road and achieve consistency with the *Parramatta Road Corridor Urban Transformation - Implementation Plan 2016–2023*, any future rezoning or redevelopment of this land must occur only after the delivery of improved public transport in exclusive dedicated lanes on Parramatta Road between Burwood and Central Sydney.

Planning conditions required to avoid or mitigate impacts

Condition 12.1

- a. The Proponent must prepare a Residual Land Management Plan (RLMP) in consultation with the relevant councils. The RLMP must be submitted to the Secretary for approval at least 12 months prior to the commencement of operation of the SSI.
- b. The RLMP must identify (and consider), but not be limited to:
 - i. identification and illustration of all residual land following construction of the SSI, including the physical location, land use characteristics, size and adjacent land uses;

<ul style="list-style-type: none"> ii. identification of feasible uses for each piece of residual land with consideration given to the provision of additional community uses and/or public recreation uses and justification for the uses chosen; and iii. timeframes for implementing the various components of the RLMP. <p>c. Residual land that does not have feasible development potential must be subject to landscape revegetation and regeneration, unless otherwise agreed to by the Secretary.</p>
<ul style="list-style-type: none"> • The proponent must ensure that all residual land set aside for open space uses in accordance with relevant DPE condition(s) be available to the relevant council within 12 months of completion of construction, unless otherwise agreed by the Secretary. The residual land is to be in a condition that does not incur additional cost to council to reasonably rehabilitate or remediate the land for future open space development.

13. Urban design and visual amenity

13.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The Project will concentrate vehicle emissions around portals and emission stacks, meaning that recreational spaces proposed at St Peters and Rozelle cannot be safely used by the community.• If air pollution levels at the site renders it unsuitable for active recreation the concept must be abandoned. A guarantee of air quality is required before any consideration is made of using these areas as recreation spaces.
<ul style="list-style-type: none">• Both the St Peters Active Recreation Area and the Rozelle Interchange Open Space are false promises. Without a commitment and agreement to construct and manage them, they are presented as unimproved grassed wastelands with compromised amenity, adjoined by ventilation facilities.• The current design also falls well short of the City's standards for open space facilities and environmental improvements. In addition to the potential health impacts associated with active recreation near portals and emission stacks, in Rozelle, recreation areas are divided by above ground portals and are difficult to access as they are surrounded by busy roads.
<ul style="list-style-type: none">• Increased traffic on local roads decreases existing residential amenity, reduces land value and decreases the potential for new higher density housing.• Where the Project risks leading to additional traffic demand on the surface street network, the priority will be to protect the amenity of the local areas and avoid these impacts by constraining traffic flows and the associated noise, emissions and safety risks.• At minimum, this effects The Crescent, Minogue Crescent, Ross, Mount Vernon, Catherine, Ross and Arundel streets in Glebe; and Euston Road, McEvoy, Botany, Wyndham, Bourke and Lachlan streets in the Green Square area.• In the redevelopment areas, land adjoining these streets are likely to suffer a loss of development potential, a loss in value and will incur additional costs as a consequence of designing for noisy environments.• Ross Street is constrained in width and its capacity cannot be increased without widening. Any anticipated widening that requires land acquisition must be included as part of this project and not deferred to any future project.• Gardeners Road and Bourke Road in the south may also require future widening because of the Project. Any anticipated widening that requires land acquisition must be included as part of this Project.• Increased traffic on Gardeners Road will require land use planning changes that may decrease the value of land.
<ul style="list-style-type: none">• The WestConnex business case states, at https://www.westconnex.com.au/sites/default/files/westconnex-executive-summary-

september-2013.pdf, that “Improving connectivity with public transport, including trains, light rail and bus services in the inner west... will make the Parramatta Road corridor an even more attractive place to live, work and socialise”.

- Despite this promise Parramatta Road remains a barrier to urban revitalisation. The City is concerned that there is NO discussion of this commitment in the EIS. Light Rail on Parramatta Road between Burwood and Central Sydney should be part of the proposal.
- Increased traffic cannot be accommodated within Central Sydney. More traffic will further impede pedestrian movement and comfort, undermining easy access to public transport. This reduces effective job density, or the relative access to jobs, over large areas of the metropolis. It also undermines the attractiveness of Central Sydney to internationally competitive and high productivity firms and their potential employees, adversely affecting overall productivity.
- Increased traffic on Bridge Road, Wattle Street and the Western Distributor will reduce the amenity and value of the investment in the renewal of the Fish Markets and the Bays Market District.
- The St Peters Intersection ventilation facility’s planning configurations restricts the potential maximum use of the St Peters Intersection Recreation Area.

Matters to be addressed

Matter 13.1

- Any rezoning of the Camperdown work site must be contingent on, and only occur after, the completion of a light rail service on Parramatta Road linking Burwood to Central Sydney.

Matter 13.2

- Change the land use zoning, height and floor space ratio of properties along local roads that will be adversely affected by noise and pollution to ensure future residents health and well-being are not adversely affected by noise and pollution.

Matter 13.3

- No approval should be granted for any permanent and/or temporary works at any location on The Crescent that could lead to an increase the vehicular capacity of that road.

Planning conditions required to avoid or mitigate impacts

Condition 13.1

- a. Prior to commencement of temporary or permanent built surface works and/or landscaping, or as otherwise agreed by the Secretary, a revised Urban Design

and Landscape Plan (UDLP) must be prepared specifically in relation to the entire St Peters Active Recreation Area. The UDLP must be prepared by a suitably qualified and experienced person), in consultation with the relevant council(s) and community, Heritage Council of NSW (or delegate), and the Urban Design Directorate (UDD) condition(s).

b. The Proponent must include the following works:

- i. Fully fund the design and implementation of the St Peters Recreation Area
- ii. Provision of foundation material suitable for its continuing use as sports fields, courts and any structures i.e. not subject to subsidence
- iii. Maximise the number of fields and courts – this would require reconfiguring and consolidating the ventilation and associated facilities area
- iv. Relocation of the area required for water detention and retention to the land east of Euston Road
- v. The reuse of the Rudders Bond Store structure as an all-weather use of sports courts and erect such a facility
- vi. Include facilities for change rooms, toilets, sports and maintenance equipment storage, a food kiosk with covered outdoor seating and eating areas.
- vii. Include the fittings and equipment, including any maintenance equipment, required for the conduct of the sports activity
- viii. The design must include a competitive design excellence process conducted to the satisfaction of the City of Sydney's Design Excellence Manager
- ix. The design brief, consultant selection and consultant review must be conducted with the full cooperation of the relevant Councils
- x. Ensure the landscape design and environmental performance of the area is to a standard at least equivalent to or exceeding that of Sydney Park
- xi. With the relevant Council(s) establish an Environmental Management Plan. Refer to The Sydney park Environmental Management Plan to establish the brief and heads of consideration of the EMP and adapt as appropriate for the site
- xii. Consult with and obtain the agreement of the City and Inner West Council on the design of the facility, as the potential long term owners and managers of the facility
- xiii. Retain ownership of the area for a sufficient period of time (at least 10 years) to ensure that subsidence has not and/or will not occur; and address and repair any subsidence that does occur. Retain responsibility for the repair of any subsidence following the transfer of the land; and take responsibility for the establishment of all landscaping elements including grass, trees and paved areas

<ul style="list-style-type: none"> xiv. Provision of real time pollution monitoring to the satisfaction of the long term owners and managers of the facility to ensure that the facility is safe to use, given the adjoining ventilation facility xv. Construct completed recreational facilities at the St Peters Active Recreation Area to the design documented as above. Transfer management of the facilities to the City. (Transfer land and facilities maintenance responsibility to the City after the recreational facility has been operating for 10 years.) c. Demonstrate evidence of consultation with the UDD, City of Sydney Council and the community on the proposed urban design and landscape measures, prior to finalisation of the Plan. c. The St Peters Recreation Area must be implemented within one year of operation unless otherwise required by these conditions. d. The Proponent shall maintain the area, and include an ongoing remediation action plan for site contamination, for a minimum of 10 years to allow for the elimination of subsidence in the foundation material, which is primarily fill. At the conclusion of the 10 years, and after obtaining agreement with the City and IWC, transfer the land in fee simple to the City and IWC. The Proponent shall make all reasonable efforts to obtain agreement for the design and land transfer.
<p>Condition 13.2</p> <p>The Proponent (in consultation with Inner West and the City of Sydney Councils and UDD) must reconfigure and relocate the ancillary uses that are to the east of the main St Peters intersection, and ventilation uses to the north and south of the ventilation facility to maximise the size and use of the St Peters Recreation Area. Any new or upgraded footpath works must maximise the amount of soft landscaping (turf or landscape planting). Advanced street trees to be planted to achieve maximum urban canopy.</p>
<p>Condition 13.3</p> <p>Amended plans are to be submitted to the Secretary for approval prior to commencement of any works in this location.</p>
<p>Condition 13.4</p> <p>Prior to the commencement of relevant works, the proponent shall liaise with relevant councils on the undertaking of planning and urban design study/s along the following local roads (council to confirm specific roads) that will be potentially impacted by noise and/or air quality. The purpose of these studies is to identify appropriate land use changes to account for these potential impacts. The studies must:</p> <ul style="list-style-type: none"> a. identify potential impacts on existing land uses and proposed mitigation measures b. review the land use zoning, height and floor space ratio of properties and urban design guidelines of the affected properties

- c. include recommendations for design and other measures to be integrated into the existing planning instruments and other controls of the relevant Council
- d. be undertaken in conjunction with the relevant council

13.2. St Peters Interchange and Rozelle Recreation Areas

- There is no commitment to provide the St Peters or Rozelle lands in a form that is suitable for public use.
- The EIS does not commit to provision of geotechnical suitable foundations that have suitable soil profile (e.g. compaction) and/or long term subsidence suitability for active public use.
- The EIS does not commit to the provision of any facilities on the land. The cost of embellishment may be substantial and is not budgeted for by Council(s).
- Both proposed recreation areas abut the ventilation facilities. In some conditions the air quality may be hazardous for recreation use – no live monitoring or reporting/warnings are proposed to deal with this health hazard.
- The Rozelle interchange is divided by above ground portals and dive structures.
- Both proposed recreation areas are adjacent to busy roads and are exposed to significant noise and air pollution.
- The New M5 consent condition B62b St Peters interchange Recreational Area Sub-plan has not fulfilled DPE's acknowledged '*need for additional active recreational facilities in the region*' as set out in the following report:

[https://majorprojects.accelo.com/public/46c601fd33b639d97e89672b5fab2728/001.%20WestConnex%20New%20M5 Environmental%20Assessment%20Report.pdf](https://majorprojects.accelo.com/public/46c601fd33b639d97e89672b5fab2728/001.%20WestConnex%20New%20M5%20Environmental%20Assessment%20Report.pdf)
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- The New M5 proponent has developed a concept design for the land with the City and Inner West councils. However, there is no implementation plan, no management plan and no agreement of land ownership for these lands.
- This has resulted in a promise of additional recreational areas with no path for delivery.
- In response to New M5 consent condition B40a one proposal under consideration that is favoured by the Urban Design Review Panel is the reuse of the salvaged material from the Rudders Bond Store as an enclosure for the sports courts in the St Peters Intersection Recreation Area. It would be sensible to include this in the Project.
- The Project uses this land for its works area, and will occupy part of this land for a ventilation facility and associated uses. It is, therefore, the most suitable project to fulfil DPE's requirement that the recreation area be implemented, and this is best ensured by including this work as part of the Project.
- If air pollution levels at the site renders it unsuitable for active recreation the concept must be abandoned.
- For the completion of the St Peters Recreational Area the following actions are required:

- Provision of real time pollution monitoring to the satisfaction of the long term owners and managers of the facility to ensure that the facility is safe to use, given the adjoining ventilation facility
- Provision of foundation material that will be suitable for long term use as sports fields i.e. not subject to undue subsidence
- Maximisation of the number of fields and courts – this would require consolidation of the ventilation and associated facilities area and minimising the area required for water detention and retention, including its relocation
- The City also require full landscaping and construction of the parklands (both hard and soft works) around the recreation facilities
- Consideration of the reuse of the Rudders Bond Store structure to enable all weather use of sports courts and the erection of such a facility
- Consultation with and agreement obtained with the City of Sydney and Inner West Council to be the long term owners and managers of the facility
- Retention of the ownership of the area for a sufficient period of time (at least 10 years) to ensure that subsidence has not and/or will not occur; including solving any subsidence that does occur and remaining responsible for the repair of any subsidence following the transfer of the land;
- Provision of the facilities including the sports fields and courts, building to house sports and maintenance equipment, management facility, toilets and change rooms.

13.3. Increased traffic on local roads and through existing residential areas

- Increased traffic on local roads decreases existing residential amenity, lessens land value and decreases the potential for new higher density housing.
- Increased traffic affects areas in Glebe and Forest Lodge adjoining The Crescent, Minogue Crescent, Ross Street, Mount Vernon Street, Catherine Street, and Arundel Street.
- Additional traffic on the Crescent and Minogue Crescent in Forest Lodge will reduce the amenity and property values of the more than 1200 dwellings in the recently completed Harold Park redevelopment precinct.
- Increased traffic affects the Green Square area adjoining Euston Road, McEvoy Street, Botany Road, Wyndham Street, Bourke Road and Lachlan Street.
- In the Green Square urban renewal area, land adjoining these streets may suffer a loss of development potential, a loss of value and will bear the additional costs of designing for noisy environments.
- Along the Euston Road / McEvoy Street corridor more than 4000 existing or approved dwellings (more than 8000 residents) will be impacted by additional noise and emissions. These dwellings will require improvements to protect residents from adverse health effects of increased noise and pollution.
- Ross Street in Forest Lodge is constrained in width and cannot have its capacity improved without widening particularly in the area between Wigram Road and Bridge Road. Any anticipated widening that requires land acquisition must be part of this project.

- Gardeners Road and Bourke Road in the Green Square area may also require future widening because of the project. Any anticipated widening that requires land acquisition must be part of this project.
- Increased traffic on Gardeners Road will impact on adjacent residential development around Botany Road and south Rosebery and high density residential development south of Gardeners Road in the Bayside Council area.
- Land use zoning, height and floor space ratios as well as more detailed planning controls and advice may need to change along affected local roads to ensure future residents health and well-being are not adversely affected by noise and pollution from increased traffic.
- The commitments in the EIS do not accomplish the Parramatta Road business case objectives for WestConnex. Parramatta Road will not be revitalised. There will be no improvement of amenity relative to the current state of environmental degradation. The Parramatta Road corridor will not be made suitably healthy for human habitation. It will not be a good (or better) place to live or work.

13.4. Central Sydney

- In Central Sydney increased traffic cannot be accommodated. It will further impede pedestrian movement, comfort and safety undermining easy access to public transport.
- Reduced access reduces effective job density (the relative access to jobs) over large areas of metropolitan Sydney. It undermines the attractiveness of Central Sydney to internationally competitive high productivity firms and their potential employees.
- Overall metropolitan productivity and competitiveness is adversely affected.
- Projects that encourage additional private vehicles to access Central Sydney are inconsistent with TfNSW's Sydney City Centre Access Strategy.

13.5. Bays Precinct

- Increased traffic on the Western Distributor will reduce the amenity of any future adjacent tall residential buildings and undermine the business case for the renewal of the Fish Markets.
- Increased traffic on Bridge Road, Wattle Street and the Western Distributor will reduce the amenity and value of the investment in the renewal of the Fish Markets and renewal of the Bays Market District
- The Rozelle Interchange Open Space is a false promise.
- As per 13.2, without commitment and agreement for construction and management this is presented as unimproved grassed wastelands with compromised amenity, in Rozelle, divided by above ground portals and are difficult to access as it is surrounded by busy roads.

13.6. St Peters Ventilation Facility

- The ventilation facility consists of two functional distinct areas: the ventilation outlets, exhaust and supply facilities to the West; and the car parking, substation and other ancillary uses to the East. Although the ventilation parts are more or less fixed in relation to the tunnels, the other parts are not. The location of these facilities reduces the potential area of the St Peters Interchange Recreational

Area. The South end, North and North-west of the ventilation facility, is a relatively unused landscaped areas.

- Reconfiguring and relocating the ancillary uses that are to the east of the main ventilation uses to the North and South of the ventilation facilities makes better use of leftover space and enables more space for use as part of the St Peters Recreational Area.

14. Social and economic

14.1. Key Findings

Key Findings

- Appendix P states this project is consistent with the City of Sydney's *Sustainable Sydney 2030 – Community Strategic Plan*. This is incorrect.
- Relying on the RMS practice note to assess the social and economic impacts is not suitable or adequate for a project of this scale
- The economic impacts of the additional congestion forecast on Anzac Bridge have not been assessed and the economic impacts of any additional congestion in the city centre has not been considered

Matters to be addressed

Matter 14.1

- DPE has established socio-economic impact assessment guidelines for resource projects (mining, petroleum production and extractive industries) and these guidelines must be extended to other significant infrastructure projects.

- Appendix P identifies a wide range of impacts which illustrate the broad nature of the negative impacts resulting from WestConnex Stage 3 including:
 - Delayed bus services
 - Construction noise including 24-hour tunnelling leading to disturbed sleep and diminished business operations
 - Displaced residents and business owners experiencing emotional and financial stress as they search for new homes
 - The use of large rock-breakers resulting in vibrations affecting buildings and people with heightened stress and anxiety levels
 - Increased dust, air emissions and odours, heavy metals or fungal spoils from affecting business and residential amenity
 - Reduced safety and amenity for pedestrians as a result of concealed locations
 - Changes to local access in mainly residential streets
 - Loss of parking for residents, business customers and light rail passengers
 - Drivers taking different routes to avoid construction-impacted areas

14.2. Assessment Methodology for State Significant Infrastructure

- The social and economic impacts of this project will be significant in the short to medium term, with further impacts to come as other projects are rolled out following the M4-M5 link. The EIS fails to adequately assess these impacts, particularly for those with potentially greater needs such as older people who live alone or households with low incomes, for whom the impacts of WestConnex Stage 3 are likely to be more serious.
- Many of the benefits claimed are unproven. In addition, those components of the project to which a number of benefits are attributed, such as reduced traffic on local streets, better walking and cycling connections, new useable open space and improved urban renewal and economic development, are yet to be confirmed. Given the primary aim of the Project is to enable more major roadways in the future, steps must be taken to monitor and report on the claimed benefits.

14.3. Social and economic impact of more tolled roads

- Chapter 14 and Appendix P fails to address the economic impact following the imposition of tolls which is a significant omission.
- The WRTM relies on a project-specific piece of work from 2013 about road users approach to tolls to determine willingness to pay. However, more recent independent work has been completed and is now available. In 2016 research by the Institute of Transport and Logistical Studies, at the University of Sydney, on linked toll roads in Sydney suggested people are only prepared to pay up to a certain level in tolls to save time. The researchers concluded that previous errors in forecasting of toll road use may be explained by people viewing the time saved as less valuable as a result of 'toll saturation'.

14.4. Economic impacts on the city centre

- The economic and traffic modelling relied on in the EIS has not addressed the traffic impacts on the city centre. The costs of further congestion will result in increased levels of time lost. The analysis in the report shows Anzac Bridge and the Western Distributor are currently at, or close to, capacity particularly in the AM peak, but the traffic analysis has not provide projections of changes in traffic volumes approaching the city centre via the Anzac Bridge and Western Distributor.

14.5. No discussion of longer term impacts on local communities

- There is no discussion of impacts beyond the first 15 years of operation of the project. The absence of longer term modelling means that any longer term traffic or socioeconomic impacts are not being identified, mitigated or monitored.
- Appendix P states the Rozelle Rail Yards are likely to be affected by consecutive construction activities including the future West Harbour Tunnel, with this site experiencing 517 heavy truck movements each day, in one direction only. This would impose an enormous impact on the Rozelle community over many years.
- Table 9-5 only refers to 2020 and yet construction of this project would extend to 2023 with further disruptions as a result of the West Harbour Tunnel and

development of The Bays Precinct. This will impose significant pressures on this community over many years.

- The City notes that much has been made of Google deciding against locating in the Bays area because of concerns about construction impacts and poor accessibility. In sharp contrast, the impact on the existing community is dismissed as negligible or easily overcome with unenforceable compliance plans and strategies.

14.6. Plans and strategies must be required as a condition of approval

- The EIS states construction effects would extend to the medium to long term and Appendix P includes the following recommendations for a series of mitigation plans which are in addition to those recommended by the SEARs or other appendices:
 - Business Management Plan to support businesses in Camperdown and Rozelle throughout construction.
 - A car parking strategy as part of a construction traffic management and access plan (with forecast construction parking demand, review of existing parking supply and use, impact on existing parking, consultation activities and proposed mitigation measures
 - Social Infrastructure Plan including measures to be delivered as part of the Project such as pedestrian and bicycle access, community and social facilities including open space.
- These strategies must be specified in any instrument of approval and must be binding.
- Small business in particular need reliable day-to-day turnover to survive and the interruption of construction projects even for short periods has significant negative impacts. Support for businesses throughout the planning process and during construction must be put in place, with direct engagement with affected businesses.
- To minimise the burden on local streets, the car parking strategy must focus on onsite parking provision along with minimising the demand for construction workforce parking.
- Any Social Infrastructure Plan must be developed in consultation with local government and community groups and must be consistent with active transport provisions as identified by plans or other conditions of approval.

Planning conditions required to avoid or mitigate impacts

Condition 14.1

Before work commences, the proponent must prepare a Construction Traffic and Access Management Plan. The Plan establishes controls to manage the impacts of the works on small businesses

Condition 14.2

Before work commences the proponent must prepare a Construction Parking and Access Strategy

Condition 14.3

- a. No later than 12 months from the date of this approval, unless otherwise agreed to by the Secretary, the Proponent must prepare a Community and Social Management Plan (CSMP) for precincts directly impacted by the SSI. The CSMP must be prepared by a suitably qualified and experienced person(s) and in consultation with relevant council(s) and the community and submitted to the Secretary for approval.
- b. The CSMP must include but is not limited to:
 - i. identification of the social impacts of the SSI, including cumulative impacts resulting from the various stages of the SSI (including construction and operation) in directly affected precincts including –
 - a. at what stage the identified impact is likely to occur,
 - b. identification of stakeholders and communities directly affected by each impact,
 - c. assessment of the identified social impacts inducing type, probability and consequence,
 - d. details of management and mitigation measures, including responsibilities for the implementation of each measure, and an assessment of the likely effectiveness of the measures,
 - e. identification of access and connectivity enhancements or new provisions to assist in mitigating impacts directly resulting from the SSI including, but not necessarily limited to, community cohesion, public transport and social facility accessibility, connectivity and accessibility to goods and services,
 - f. mechanisms for monitoring social impacts and reviewing the effectiveness of mitigation measures,
 - g. mechanisms for the reporting of social impacts during construction and operation of the SSI, and
 - h. mechanisms for ongoing consultation with communities and key stakeholders; and

- ii. a Community Cohesion Program to enhance community cohesion in precincts directly affected by the SSI through initiatives including, but not limited to –
 - i. enhancement of open space and recreation areas,
 - ii. active community involvement and engagement,
 - iii. support of community initiatives and programs, and
 - iv. provision of grants to local community groups.
- c. The Proponent must maintain and implement the Community and Social Management Plan throughout construction and for the first three years of operation of the SSI.

15. Soil and Water Quality

15.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The Proponent shall, both during construction and operational stages of the project large quantities of waste water will be generated and it is proposed to discharge this waste water into the surrounding waterways. Although the EIS states that this water will be monitored and treated for gross pollutants, sediment and nutrients no treatment method is proposed to address the elevated levels of salinity, heavy metals including copper, chromium, lead, nickel and zinc.
<ul style="list-style-type: none">• The EIS states that there is potential for wastewater to impact on the receiving waterways by introducing increased nutrient loading which will result in algal growth with increased risk to human health. The EIS only intends to minimise impacts on receiving waterways and does not adequately address the risks to human health and aquatic species due to heavy metals or other toxicants
<ul style="list-style-type: none">• The EIS claims it will meet the reduction requirements for gross pollutants, sediments and nutrients but the modelling results given in table 15.2 clearly show they fail to meet these targets.
<ul style="list-style-type: none">• The EIS states that the project has the potential to interact with at least eight sensitive receiving environments but gives no indication as to how they intend to identify the issues, what prevention measures will be used or how it will mitigate any impacts

15.2. Water - Hydrology

- For the hydrological regime the City's response to section 17 should be noted.
- It has not been demonstrated that the works will be undertaken in accordance with the requirements of the City's draft interim floodplain management policy May 2014. (Ref Section 15 table 15-1 SEAR item10.)
- If any dewatering of the site is to be undertaken, a bore licence may be required from the NSW Office of Water under the provisions of Part V of the Water Act 1912. The NSW Office of Water licences dewatering to allow excavation for construction for a temporary period, usually 12 months. (Ref Section 15 table 15-1 SEAR item10.)
- It has not been demonstrated that the works will be undertaken in accordance with the requirements to assess the aquatic connectivity and access to habitat for spawning and refuge. (Ref Section 15 table 15-1 SEAR item10.3a.)
- No detailed proposals have been given in the EIS for groundwater monitoring during the construction and operational stages of the project. (Ref Section 15 table 15-1 SEAR item10.5; 15.3.1 and 15.4.1.)

15.3. Water - Quality

- The list of ambient NSW Water Quality Objectives (NSWWQO) are not given in section 15.1.4 as stated in the EIS (Ref Section 15 table 15-1 SEAR item11.1a and Section 15.1.4)
- The EIS has not identified the quality of all pollutants that may be introduced into the water cycle by source and discharge point as required (Ref Section 15 table 15-1 SEAR item11.1b, Sections 15.3.2 and 15.4.2)
- The EIS has not identified the rainfall event that the water quality protection measures will be designed to cope with as required. (Ref Section 15 table 15-1 SEAR item11.1c, Sections 15.3.2 and 15.4.2)
- Both during construction and operational stages of the project large quantities of waste water will be generated and it is proposed to discharge this waste water into the surrounding waterways. Although the EIS states that this water will be monitored and treated for gross pollutants, sediment and nutrients no treatment method is proposed to address the elevated levels of salinity, heavy metals including copper, chromium, lead, nickel and zinc. (Ref Section 15.3.2). The disposal for this water should not be to waterways but to suitable waste landfill sites.
- The EIS states that there is potential for wastewater to impact on the receiving waterways by introducing increased nutrient loading which will result in algal growth with increased risk to human health. The EIS only intends to minimise impacts on receiving waterways and does not adequately address the risks to human health and aquatic species due to heavy metals or other toxicants. (Ref Section 15.3.2)
- The EIS has failed to justify why the Water Quality Objectives cannot be maintained or achieved over time (Ref Section 15 table 15-1 SEAR item11.1f, Sections 15.3.2 and 15.4.2) wanting to maximise space for the infrastructure is not sufficient reason. There are numerous treatment devices that can be provided within the infrastructure boundaries whilst still allowing full function of the infrastructure.
- The EIS has failed to demonstrate that all practical measures to avoid or minimise water pollution and protect human health and the environment from harm have been investigated and implemented (Ref Section 15 table 15-1 SEAR item11.1g and Sections 15.5)
- The EIS states that the project has the potential to interact with at least eight sensitive receiving environments but gives no indication as to how they intend to identify the issues, what prevention measures will be used or how it will mitigate any impacts (Ref Section 15 table 15-1 SEAR item11.1h, Section 15.2.2 and 15.5). This will result in the following areas being in jeopardy:
 - Protected wetlands at Iron Cove
 - Iron Cove (water recreation zone)
 - Johnstons Creek wetland
 - Whites Creek wetland
 - Key fish habitats at Rozelle Bay, Iron Cove, White Bay, Alexandra Canal, Dobroyd Canal and Hawthorn Canal
 - Parramatta river estuary, Cooks River and Botany Bay
 - Cooks River
 - Seagrasses at Botany Bay

- The EIS only used a very limited number of water quality studies. Many more are available and should be used (Ref Section 15 table 15-1 SEAR item11.2 and Section 15.1.6)

15.4. Water – Flooding

- For flooding the City's response to section 17 should be noted.
- It has not been demonstrated that the works will be undertaken in accordance with the requirements of the City's draft interim floodplain management policy May 2014. (Ref Section 15 table 15-1 SEAR item12.)
- The consequences of erosion potential are not adequately dealt with in the EIS. The mobilisation of sediments or pollutants during the project will have an effect on water quality. The potential contaminants include asbestos, hydrocarbons, heavy metals and other toxicants. These contaminants will have an adverse effect on human health and will cause harm to the environment. (Ref Section 15 table 15-1 SEAR item12. Section 15.3.2 and 15.4.2)

Planning conditions required to avoid or mitigate impacts
<p>Condition 15.1</p> <p>The Proponent shall undertake works in accordance with the requirements of the City's draft interim floodplain management policy May 2014. (Ref Section 15 table 15-1 SEAR item10.)</p>
<p>Condition 15.2</p> <p>The Proponent shall undertake groundwater monitoring during the construction and operational stages of the project. (Ref Section 15 table 15-1 SEAR item10.5; 15.3.1 and 15.4.1.)</p>
<p>Condition 15.3</p> <p>a. The Proponent shall identify the treatment method it will use to address the elevated levels of salinity, heavy metals including copper, chromium, lead, nickel and zinc. (Ref Section 15.3.2).</p> <p>b. The proponent will not dispose of this water into waterways but to suitable waste landfill sites.</p>
<p>Condition 15.4</p> <p>The Proponent shall adequately address the risks to human health and aquatic species due to heavy metals or other toxicants. (Ref Section 15.3.2)</p>

Condition 15.5

The Proponent shall identify the expected risks issues and what prevention measures will be used to mitigate any impacts on the following eight sensitive receiving environments (Ref Section 15 table 15-1 SEAR item11.1h, Section 15.2.2 and 15.5):

- a. Protected wetlands at Iron Cove
- b. Iron Cove (water recreation zone)
- c. Johnstons Creek wetland
- d. Whites Creek wetland
- e. Key fish habitats at Rozelle Bay, Iron Cove, White Bay, Alexandra Canal, Dobroyd Canal and Hawthorn Canal
- f. Parramatta river estuary, Cooks River and Botany Bay
- g. Cooks River
- h. Seagrasses at Botany Bay

Condition 15.6

The Proponent shall address the consequences of erosion potential as the mobilisation of sediments or pollutants during the project will have an effect on water quality. The potential contaminants include asbestos, hydrocarbons, heavy metals and other toxicants. These contaminants will have an adverse effect on human health and will cause harm to the environment. (Ref Section 15 table 15-1 SEAR item12. Section 15.3.2 and 15.4.2)

16. Contamination

See relevant chapters for specific comments.

17. Flooding and Drainage

17.1. Key Findings

Key Findings

Assessment of flood risk, and strategies to manage that risk, is inadequate.

17.2. Flooding

Matters to be addressed

Matter 17.1

- The Proponent must ensure that the flood impacts are negated and associated flood risk mitigation measures implemented, as part of the New M5 project, for the M4-M5 project works at St Peters Interchanges (Section 17.2.3)

Matter 17.2

- During construction phase, groundwater or stormwater from the construction site must not discharge into the stormwater network.

Matter 17.3

- Quantitative Assessment should not be limited to only 10, 100 year average recurrence interval floods and probably maximum flood. In order to identify flood impacts on neighbouring properties and or amenities due to the project works, including flood proofing of the portals, tunnel entries and associated amenities, five year and 20 year ARI storm events must be included in the assessment.

Matter 17.4

- Pyrmont Bridge Road – at the Western end of Bignell Lane near Pyrmont Bridge Road existing flood depth is identified up to one metre in the 100 year ARI event. As per the NSW Government Floodplain Development Manual – 2005 the location is to be considered as high flood hazard area. Site specific mitigation measures are required to address flood hazard to an acceptable level without adversely affecting upstream or downstream of the area, as well as immediate adjacent properties.

Matter 17.5

Table 17- 5 Environmental management measures – Flooding and drainage

- (FD01) 'A maximum increase of 50mm in inundation at properties that the floor level is not flood affected' is not acceptable. There must be no increase in flood level in all cases with the flood level estimation tolerance of $\pm 10\text{mm}$.
- (FD01) There must not be any change in flood hazard categories e.g. low to high
- (FD03) 'Measure developed to manage potential flood.....' Must not shift flooding elsewhere.
- (FD13) 'runoff generated from the project construction and operational facilities.....' Must not cause surcharge downstream to receiving drainage network.

17.3. Stormwater Drainage

Matters to be addressed

Matter 17.6

- The Proponent must set out the flood impacts and associated flood risk mitigation measures were implemented as part of the New M5 project for the M4-M5 LINK project works at St Peters Interchanges (Section 17.2.3)

Matter 17.7

- During construction phase, groundwater or stormwater from the construction site must not discharge into the stormwater network.

Matter 17.8

- Stormwater networks must not be used for relieving/ shifting flooding elsewhere without proper assessment of the existing stormwater network capacity, potential downstream surcharge risk.

Planning conditions required to avoid or mitigate impacts

Condition 17.1

- A Flood Mitigation Strategy must be prepared and implemented in respect of the flood prone land and overland flow paths for the waterways and catchments in the vicinity of the SSI. The Flood Mitigation Strategy must be designed to ensure that the SSI, where feasible and reasonable, does not worsen existing flooding characteristics in the vicinity of the SSI during construction and operation. The Flood Mitigation Strategy must include but not be limited to:
- the identification of flood risks to the SSI and adjoining areas, including further modelling and the consideration of local drainage catchment

- assessments, and climate change implications on rainfall and drainage characteristics. This must consider blockages of waterway structures from floating debris in its flood level modelling;
- iii. a floor level survey to verify whether inundation would be above the floor levels of residential, commercial and/or industrial buildings;
 - iv. the identification of design and mitigation measures that would be implemented to protect proposed operations;
 - v. not worsen existing flooding characteristics within and in the vicinity of the SSI boundary during construction and operation, including soil erosion and scouring;
 - vi. consideration of limiting flooding characteristics to the following levels -
 - a. a maximum increase in inundation time of one hour in a 1 in 100 year ARI rainfall event,
 - b. a maximum increase of 10 mm in inundation at properties where floor levels are currently exceeded in a 1 in 100 year ARI rainfall event,
 - c. a maximum increase of 50 mm in inundation at properties where floor levels would not be exceeded in a 1 in 100 year ARI rainfall event, and
 - d. no inundation of floor levels which are currently not inundated in a 1 in 100 year ARI rainfall event,
 - e. or else provide alternative flood mitigation solutions consistent with the intent of these limits;
 - vii. the processes and actions committed to in the mitigation measures referred to in conditions A2(b) and A2(c);
 - viii. the identification of measures to be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase as a result of the SSI and cause localised soil erosion or scour;
 - ix. further information is required to confirm what flood impacts and associated flood risk mitigation measures were implemented as part of the New M5 project for the M4-M5 LINK project works at St Peters Interchanges.
 - x. identification of drainage system upgrades including those upgrades considered as mitigation measures and identified during the processes outlined in condition 005; and
 - xi. identification of the timing and maintenance responsibility of any necessary works.
 - i. The Flood Mitigation Strategy must be prepared by a suitably qualified and experienced person in consultation with directly affected landowners, Sydney Water, OEH, and relevant councils.
 - j. The Flood Mitigation Strategy must be independently peer reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer.
 - k. The Flood Mitigation Strategy and details of the peer review must be submitted to the Secretary and the relevant council(s) prior to the commencement of

works which have been identified in the documents listed in condition A2(b) and A2(c) as potentially increasing flood levels, or as otherwise agreed by the Secretary.

Condition 17.2

All relevant flooding information must be provided to the relevant council(s) and/or NSW State Emergency Service, to assist in the preparation of any new or necessary update(s) to the relevant plans and documents in relation to flooding, to reflect changes in flooding levels, flows and characteristics as a result of the SSI

Condition 17.3

- a. Unless otherwise agreed by the Secretary, a Flood Review Report(s) must be prepared within three months after the first defined flood event for any of the following flood magnitudes - the 5 year ARI event, 20 year ARI event, 100 year ARI event and probable maximum flood - to assess the actual flood impact against those predicted in Appendix P of the document referred to in condition A2(b). The Flood Review Report(s) must be prepared by an appropriately qualified person(s) and include:
 - i. identification of the properties and infrastructure affected by flooding during the reportable event;
 - ii. a comparison of the actual extent, level, velocity and duration of the flooding event against the impacts predicted in Appendix P of the document referred to in condition A2(b), or as otherwise altered by the Flood Mitigation Strategy; and
 - iii. where the actual extent and level of flooding exceeds the predicted level with the consequent effect of adversely impacting of property(ies), structures and infrastructure, identification of the measures to be implemented to reduce future impacts of flooding related to the SSI works including the timing and responsibilities for implementation.
- b. Flood mitigation measures must be developed in consultation with the affected property/structure/infrastructure owners, OEH and the relevant councils.
- c. A copy of the Flood Review Report(s) must be submitted to the Secretary and relevant council(s) within one month of finalising the report(s).

Condition 17.4

- a. A Water Quality Plan and Monitoring Program must be prepared and implemented to monitor and avoid or mitigate impacts on surface and groundwater quality and resources, during construction and operation. The Water Quality Plan and Monitoring Program must be developed in consultation with DPI (Water), Sydney Water and relevant councils, and must include, but not be limited to:
 - i. identification of works and activities during construction and operation of the SSI, including tunnel discharge, runoff, emergencies and spill events, that have the potential to impact on groundwater quality, levels or potentiometric pressure (in confined aquifers), and surface water quality of potentially

- affected watercourses and riparian land;
- ii. a risk management framework for evaluation of the risks to groundwater and surface water resources and dependent ecosystems as a result of groundwater inflows to the tunnels or discharges to surface water receiving environments, including definition of trigger values for contingency and ameliorative measures;
 - iii. the identification of environmental management measures that would be implemented to manage impacts to surface waters and groundwater during construction and operation, including water treatment, erosion and sediment control and stormwater management measures consistent with Water Sensitive Urban Design measures, where relevant, and consistent with the measures detailed in the documents listed in conditions A2(b) and A2(c);
 - iv. details of construction water treatment plants and the operational water treatment plants, including treatment processes, discharge water quality criteria (taking into consideration any water uses and proposed rehabilitation measures downstream of the discharge locations), discharge locations and rates (and justification for their location), treatment capacity, and any proposed on-site storage of flows;
 - v. commitment to designing discharge points into watercourses affected by the SSI to emulate a natural stream system, where feasible and reasonable, or where emulation cannot be achieved, adequate scour protection measures are to be implemented;
 - vi. consideration of any naturalisation or rehabilitation programs occurring upstream or downstream of waterways or drainage lines intersected by the SSI, including the Wolli Creek Riparian Corridor Management Plan;
 - vii. the presentation of water quality objectives, standards, environmental values and parameters against which any changes to water quality will be assessed, based on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Agriculture and Resource Management Council of Australia and New Zealand and the Australian and New Zealand Environment and Conservation Council, 2000). Where alternate guidelines are used to establish water quality objectives (including the levels for protection of aquatic ecosystems in receiving waters), justification for this must be provided. In particular, justification must be provided for the classification of waterways as 'highly disturbed' versus 'slightly to moderately disturbed' receiving environments;
 - viii. details on the current water quality, including at least 12 months of representative background monitoring data (including but not limited to representative data collected by the relevant councils, agencies and organisations where readily available) for surface and groundwater quality, levels and potentiometric pressures (in confined aquifers), to establish baseline water conditions prior to the commencement of construction;
 - ix. monitoring of the quality of discharges from construction and operational water treatment plants;
 - x. identification of construction and operational phase surface water and

- groundwater monitoring locations including watercourses and waterbodies which are representative of the potential extent of impacts from the SSI, including the relevant analyses and frequency of monitoring;
- xi. groundwater monitoring must be able to demonstrate that groundwater discharge quality is consistent with supporting the water quality objectives defined in accordance with B28(g) and include, but not be limited to -
 - a. sites in the vicinity of Bardwell Park (to confirm groundwater quality),
 - b. inside and outside the cut-off wall at the Alexandria Landfill,
 - c. monitoring of groundwater levels at Stotts Reserve, southern bank of Wolli Creek behind the Wolli Creek station and forested areas along Bardwell Creek to ascertain potential impacts on groundwater dependent ecosystems, and
 - d. monitoring of drawdown along the alignment of the tunnels;
 - xii. details on the condition and status of licensed bores likely to be impacted by the SSI;
 - xiii. commitment to a minimum monitoring period of three years following the completion of construction or until the affected waterways and/or groundwater resources are certified by a suitably qualified and experienced independent expert as being rehabilitated to an acceptable condition, unless otherwise approved or directed by the Secretary. The monitoring must also confirm the establishment of operational water control measures (such as sedimentation basins and vegetation swales);
 - xiv. details of how the potential impact of discharges on receiving waters would be avoided or minimised, including design and operational measures incorporated into the SSI to protect water quality and, where feasible and reasonable, enhance water quality over time;
 - xv. contingency and ameliorative measures in the event that adverse impacts to water quality or groundwater flows, levels or potentiometric pressures (in confined aquifers) are identified, with reference to the impact triggers defined in accordance with B28(b);
 - xvi. identification of and commitment to 'make good' provisions for groundwater users to be implemented in the event of a decline in water supply levels, quality and quantity from existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the SSI;
 - xvii. procedures for monitoring of streambed fracturing;
 - xviii. procedures for monitoring and annual reporting of extracted groundwater volumes to DPI (Water) for a minimum monitoring period of three years following completion of construction, unless otherwise approved or directed by the Secretary; and
 - xix. procedures for annual reporting of the monitoring results to the Secretary, DPI (Water), and the relevant councils.
- b. The Water Quality Plan and Monitoring Program must be submitted to the

Secretary for approval prior to the commencement of construction of the SSI, in consultation with the City of Sydney Council, unless otherwise agreed by the Secretary. A copy of the Water Quality Plan and Monitoring Program must be submitted to the DPI (Water), Sydney Water and relevant councils prior to its implementation.

- c. Nothing in this condition prevents the Proponent from preparing separate Water Quality and Monitoring Programs for the construction and operational stages of the SSI. Where a separate Water Quality and Monitoring Program is prepared for the operation of the SSI, this must be submitted to the Secretary for approval at least six months prior to the commencement of operation of the SSI.

Condition 17.5

- a. The Proponent must undertake further hydrological and hydraulic modelling based on the detailed design of the SSI to determine the ability of the receiving drainage systems to effectively convey pavement drainage from the SSI once operational. The modelling must be undertaken in consultation with the relevant council(s) and the outcomes documented in a Stormwater Drainage Report. The Stormwater Drainage Report must:
 - i. confirm the location, size and capacity of all drainage basin structures associated with the operation of the SSI;
 - ii. assess the potential impacts of pavement drainage discharges from the SSI drainage systems on the receiving environment including the hydrology (water quality and quantity) of receiving waterways, riparian vegetation, aquatic ecology and property;
 - iii. identify all feasible and reasonable mitigation measures to be implemented where pavement drainage from the SSI drainage systems is predicted to adversely impact on the receiving environment;
 - iv. where pavement drainage from the SSI flows to a council stormwater drainage system, confirm the location of the cross drainage point and, where available, use drainage information obtained from the relevant council, to -
 - a. confirm the capacity of the council's drainage system and its ability to receive and convey the flows,
 - b. identify any consequent upstream and downstream impacts on cross drainage infrastructure capacity,
 - c. assess the impacts on the receiving environment at the final outflow point resulting from any additional flow volume (including, but not limited to, scour, flooding, water quality impacts, and impacts on riparian vegetation, aquatic ecology and property), and
 - d. identify all feasible and reasonable mitigation measures to be implemented where increased flows through cross drainage systems adversely impact on council drainage infrastructure and the receiving environment; and
 - v. set out a clear time frame for the implementation of mitigation measures.

- b. The Stormwater Drainage Report must be submitted to the Secretary prior to the commencement of any new operational drainage works, modifications to existing stormwater drainage works, or construction of hard surfaces associated with the operation of the SSI that would result in runoff to existing or new stormwater drainage systems, unless otherwise agreed by the Secretary.

Condition 17.6 Flooding Condition

- c. The Proponent must prepare a Water Reuse Strategy which sets out feasible and reasonable options for the reuse of collected stormwater and groundwater during construction and operation of the SSI. The Water Reuse Strategy must include, but not be limited to:
 - i. evaluation of all feasible and reasonable reuse options;
 - ii. details on the preferred reuse option(s), including volumes of water to be reuse, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; and
 - iii. a time frame for the implementation of the preferred reuse option(s).
- d. Justification must be provided in the event that it is concluded that no feasible or reasonable reuse options prevail.
- e. A copy of the Water Reuse Strategy must be submitted to the Secretary for approval prior to commencement of tunnelling works.
- f. Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational phases of the SSI. Where a separate Strategy is prepared for the operation of the SSI, this must be submitted to the Secretary for approval at least six months prior to the commencement of operation of the SSI.

18. Biodiversity

18.1. Key Findings

Key findings

- The proposed mitigations for the loss of foraging habitat for the Grey Headed Flying-fox and microbats is unsatisfactory

18.2. Biodiversity protection is required

- Microbat roosting beneath Iron Cove bridges is highly probable.
- The loss of foraging habitat for the Grey headed Flying-fox and microbats is assessed as 'low', with a proposed mitigation response of providing compensatory planting (OB9). The replacement of this habitat to maturity would take many years and would not provide an immediate replacement of habitat.
- A higher risk is more likely and detail of a how disturbance will be realistically managed is required.

Planning conditions required to avoid or mitigate impacts

Condition 18.1

- The proponent shall prepare a biodiversity mitigation plan that manages habitat disturbance

19. Groundwater

19.1. Key Findings

Key Findings

- Section 19.2.5 Hydrological Setting - Groundwater inflow in existing Sydney Tunnels - Groundwater and infiltration into tunnels must not be discharged into the stormwater drainage system.

Planning conditions required to avoid or mitigate impacts

Condition 19.1

- a. The Proponent must prepare a Water Reuse Strategy which sets out feasible and reasonable options for the reuse of collected stormwater and groundwater during construction and operation of the SSI. The Water Reuse Strategy must include, but not be limited to:
 - i. evaluation of all feasible and reasonable reuse options;
 - ii. details on the preferred reuse option(s), including volumes of water to be reuse, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; and
 - iii. a time frame for the implementation of the preferred reuse option(s).
- b. Justification must be provided in the event that it is concluded that no feasible or reasonable reuse options prevail.
- c. A copy of the Water Reuse Strategy must be submitted to the Secretary for approval, in consultation with relevant Council prior to commencement of tunnelling works.
- d. Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational phases of the SSI. Where a separate Strategy is prepared for the operation of the SSI, this must be submitted to the Secretary for approval, in consultation with the relevant Council at least six months prior to the commencement of operation of the SSI.

20. Non-Aboriginal heritage

20.1. Key Findings

Key Findings

- A significant number of buildings and other structures that are heritage listed or identified as potential heritage items will be demolished or affected by the project. Two heritage items are identified as being affected by the works in Chapter 20.3.2. Heritage item number I2242 of Sydney LEP 2012, known as the former Grace Bros Repository including interiors at 6-10 Mallett Street Camperdown, and the terrace group at 2-34 Campbell Road Alexandria, heritage item number I12 of Sydney LEP 2012 potentially through settlement and vibration. Also potentially impacted upon by these works are the former corner shop and residence at 70 Church street Camperdown Sydney LEP 2012# I51, and the Warehouse at 9-11 Layton Street Camperdown Sydney LEP 2012# I58.
- The 'mainline' of the tunnel passes beneath Sydney LGA heritage items and heritage conservation areas along the southern section of King Street Newtown. The construction of this tunnel has the potential to affect heritage items and heritage building in heritage conservation areas above the tunnel corridor, through settlement and vibration impacts.
- The following heritage items within the City of Sydney may be impacted by the tunnel:
 - St George's Hall' (352 King Street) including interior 344-358 King Street, Newtown Sydney LEP 2012 #I1014,
 - Saints Constantine and Helen Greek Orthodox Church including buildings and their interiors, front fence and grounds 366-378 King Street, Newtown Sydney LEP 2012 #I1015,
 - Service station 'Rising Sun' (426 King Street) including interior and front forecourt 424-430 King Street, Newtown Sydney LEP 2012 #I1016,
 - Commercial building including interior 482-496 King Street, Newtown Sydney LEP 2012 #I1017
 - Commercial building including interior 522-524A King Street, Newtown Sydney LEP 2012 #I1018
 - Union Hotel Newtown Sydney LEP 2012 #I1019
 - Sydney LEP 2012 #I130, Victorian Georgian house and stables - including interiors
 - Sydney LEP 2012 # I141, Corner shop - including interiors
 - Sydney LEP 2012 #I142, Group of Victorian Style Terraces - including interiors
 - Sydney LEP 2012 #I152, Cragos Flour Mills site - including interiors
 - Sydney LEP 2012 #I163, Former electricity substation
 - Sydney LEP 2012 #I165, Victorian terrace - including interiors

- Sydney LEP 2012 #I309, St Joseph's Boys School - including interiors
- Sydney LEP 2012 #I1013, Newtown Primary School (344-350 King Street)
- Sydney LEP 2012 #I613, Commercial building
- Sydney LEP 2012 #I623, Cottage group 'Henry Knight Cottages'
- Glebe Railway Viaduct, NSW State Heritage register # 01034,
- Heritage buildings within the following heritage conservation areas in the City of Sydney may be impacted upon by the tunnel:
 - King Street Heritage Conservation Area Sydney LEP 2012 C47
 - Newman and Gibbes Streets Newtown heritage Conservation Area Sydney LEP C42

Matters to be addressed

Matter 20.1

- Of the six areas of disturbance and 11 Historical Archaeological Management Units (HAMUs) identified in Chapter 20 of the EIS, none are within the City's LGA. Nonetheless there is potential for unexpected finds that should be managed in accordance with best archaeological practise.

Planning conditions required to avoid or mitigate impacts

Condition 20.1

- a. Management of visual impacts upon the setting and views from the City of Sydney
- b. All aspects of the Rozelle surface road network and Rozelle ventilation facilities around the Rozelle interchange must be designed in a way that will mitigate all adverse visual impacts upon the setting and views of the Toxteth Heritage Conservation Area C34, the Glebe Point Heritage Conservation Area C28 and the Glebe foreshore parklands including Bicentennial Park and Jubilee Park. The design is to be resolved and potential adverse visual impacts mitigated to the satisfaction of the City and Inner West Council. To ensure the mitigation of impacts, the City and Inner West Council are to be continually involved in, and consulted, as to the resolution of all aspects of the design of the Rozelle interchange, to their satisfaction.

Condition 20.2

- a. Management of impact upon Non-Aboriginal heritage within the City of Sydney
- b. To ensure the protection of the environmental heritage of the City of Sydney, a Construction Heritage Management Plan, must be developed in consultation and partnership with the City of Sydney, the Inner West Council, the NSW

Heritage Council, NSW National Parks, Registered Aboriginal Groups and Metropolitan Local Aboriginal Land Council.

- c. The Construction Heritage Management Plan must include, but not be limited to impact of surface works:
- d. Where built heritage items and heritage conservation areas are directly impacted upon by the surface works, details of management measures to be implemented shall include, but not be limited to, further heritage investigation, archival recordings, salvage processes for the reuse and recycling of building and landscape components, and measures to protect unaffected sites during construction works in the vicinity.
- e. Where built heritage items, and buildings within heritage conservation areas, are potentially affected by subsurface works such as the construction of tunnels, subsurface drainage and services systems and other forms of excavation works, details of management measures to be implemented shall include, but not be limited to, further assessment and investigation of the potential impacts to inform the design resolution and the construction management plan, and the design of mitigation measures to reduce impacts, dilapidation surveys, monitoring and reporting.

Condition 20.3

- a. A Heritage Interpretation Strategy is to be developed by a suitably qualified heritage consultant in close consultation and partnership with the OEH, NSW Heritage Council, NSW National Parks, Registered Aboriginal Groups and Local Aboriginal Land Councils and the relevant local government councils.
- b. The strategy is to detail how information on the history and significance of the affected areas will be provided for the public and make recommendations regarding public accessibility, signage and lighting. Public art and the display of selected artefacts should form part of the strategy.
- c. The development and implementation of the strategy is to include the results of the Aboriginal and non-indigenous archaeological programs incorporating yielded evidence. The archaeologists are to have a central role in the further development of the interpretation strategy and its final implementation.
- d. The final implementation plan is to be to the satisfaction of the City and Inner West Council, the NSW Heritage Council a, National Parks and the Local Metropolitan Aboriginal Land Council.

Condition 20.5

Of the six areas of disturbance and 11 Historical Archaeological Management Units (HAMUs) identified in Chapter 20 of the EIS, none are within the Sydney LGA. Nonetheless, should any relics be unexpectedly discovered on the site during excavation, all excavation or disturbance to the area is to stop immediately and the NSW Government Office of Environment and Heritage notified in accordance with section 146 of the *Heritage Act 1977*.

21. Aboriginal Heritage

21.1. Key Findings

Key Findings
<ul style="list-style-type: none">Action should be taken to protect Aboriginal objects discovered during excavation or disturbance.

21.2. Protection of Aboriginal heritage is required

- The areas identified as affected by the projects are largely highly disturbed or land fill sites. Chapter 21 of the report states that it is unlikely that Aboriginal object of place would be impacted by the project.

Planning conditions required to avoid or mitigate impacts
<p>Condition 21.1</p> <p>Should any Aboriginal objects be unexpectedly discovered then all excavation or disturbance of the area is to stop immediately. The NSW Government Office of Environment and Heritage is to be informed in accordance with Section 89A of the <i>National Parks and Wildlife Act 1974</i>.</p>

22. Greenhouse gas

22.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The Project will increase greenhouse gas emissions.
<ul style="list-style-type: none">• Key figures are in the wrong section of the chapter, making it difficult to obtain a correct picture of the greenhouse gas assessment.
<ul style="list-style-type: none">• Project targets are unclear and do not align with NSW government policy

22.2. Key charts switched rendering project impact unclear

There is an error in Chapter 22. Figure 22-1 and Figure 22-2 have been transposed, and are in the wrong place. These are key charts on this section and this error makes it difficult for the reader to obtain a correct picture of the Greenhouse Gas (GHG) Assessment.

22.3. Assessment methodology

- The GHG assessment is based on the WestConnex Road Traffic Model version 2.3. This model has major flaws and the unreliable outputs of the model put into question the GHG assessment.
- Both 'with project' and 'cumulative' scenarios for 2033 show a reduction in emissions vs the 'do minimum' scenario. This is likely to rely on 'free-flow' conditions for the Project for most of the day. Should this not occur, the modelled outcomes could be significantly different.
- Emissions were not modelled beyond 2033. This is an omission, as the contractual life of the project is significantly longer, until 2060. The EIS states, on page 22-15 that 'it is expected that savings in emissions from improved road performance would reduce over time as traffic volumes increase'. Therefore, the longer-term outcome of the project is likely to be an increase in GHG emissions

22.4. Weak targets don't align with NSW Government policy

- The targets for renewable energy and carbon offsets (at Table 22-8) are not aligned with NSW government policy. Targets for renewable energy and carbon offsets are not aligned with NSW government policy. Table 22-8 states that:
 - At least 20 per cent of construction energy for the project will be sourced from an accredited GreenPower energy supplier, where possible. Six per cent of construction electricity requirements will be offset.
 - At least six per cent of operational energy will be sourced from accredited Green Power supplier and/or through renewable energy generated onsite.
- As stated in the EIS (section 22.2.1 and 22.2.2) the Australian and NSW government have made commitments to reduce emissions that require significant

action in energy efficiency and uptake of renewable energy. The NSW government has committed to net zero carbon emissions by 2050.

- The target of 6 per cent of operational energy to come from GreenPower falls well below what is required for the project to contribute equitably to State and Federal commitments, and is not in line with other major infrastructure projects in NSW. The Sydney Metro is required to fully offset the carbon emissions generated from its operation, and is procuring renewable energy for a significant proportion of its requirements.
- Targets for renewable energy and offsets are unclear:
 - GHG6: Will 20 per cent of construction energy (which include diesel, gas, petrol and electricity) or just 20 percent of construction electricity be sourced from Green Power? (Note – Green Power is only available for electricity).
 - Then, is the 6 per cent of construction electricity to be offset in addition to the 20 percent from Green Power?
 - OGHG9 - Will six per cent of operational energy will be sourced from accredited Green Power supplier and/or through renewable energy generated onsite; or is this just meaning six per cent of electricity? Also, is this six per cent of the energy used for road infrastructure operation and maintenance; or is it six per cent of energy used for the operation of vehicles using the road network?

22.5. The Project will increase greenhouse gas emissions

- The assessment states that there will be a net increase in GHG emissions in 2023 under the 'with project' scenario while the 2023 'cumulative' scenario states there will be a net decrease in emissions (page 22-15). As the 'cumulative' scenario includes the Sydney Gateway and Western Harbor Tunnel projects, which are not yet confirmed to proceed, the 'with project' scenario should be considered as a likely outcome – which would see an increase in emissions.
- Emissions were not modelled beyond 2033. This is an omission, as the contractual life of the project is significantly longer, until 2060. The EIS states, on page 22-15 that 'it is expected that savings in emissions from improved road performance would reduce over time as traffic volumes increase'. Therefore, the longer-term outcome of the project is likely to be an increase in GHG emissions.

Planning conditions required to avoid or mitigate impacts

Condition 22.1

The project should be required to purchase a higher proportion of renewable electricity during construction and operation. 100 per cent of the energy used in construction, operation and maintenance should be accredited Green Power.

Condition 22.2

The project should be required to purchase a larger proportion of carbon offsets during construction. If 100% Green Power is used for electricity, then offsets could be purchased to mitigate the emissions from other sources of energy (gas, petrol diesel etc.).

Condition 22.3

The Project must be designed and constructed to achieve an excellent 'Design' and 'As built' rating under the infrastructure Sustainability Council of Australia infrastructure rating tool.

Condition 22.4

Opportunities to reduce operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be regularly reviewed, updated and implemented throughout the design development and construction phase, and annually during the operational phases.

23. Resource and waste minimisation

23.1. Key Findings

Key Findings
<ul style="list-style-type: none">The Project will generate vast volumes of waste and waste mitigation proposals are weak.

23.2. Vast volumes of waste require strong mitigation action

- The mitigation action to manage and dispose of waste in accordance with relevant NSW legislation and government policies requires strengthening given the volume of waste expected from the site
- Assurance is required that waste would be managed as per legislative requirements.

23.3. Portland cement reduction

- The EIS states the project will 'Optimise the amount of cement replacement material used in concrete', however it does not set a target for the quantum of this reduction (Ref Section 23.3.1 Construction resource consumption). The Portland cement content within concrete mixes is the most greenhouse gas intensive component of the material. Reducing the Portland cement content will achieve a lower embodied carbon outcome.
- A target should be set for reduction in the use of Portland cement, in order to achieve a lower embodied carbon outcome.
- Table 23-2 states that the project will require 400,000 cubic metres of concrete, which it will aim to source from 'Sydney suppliers located close to the project'. An assessment must be made as to whether the suppliers have the ability to provide a cement mix with a lower than standard Portland cement content.
- The City recommends that a target be set for a minimum of 30per cent reduction in Portland cement content measured by mass, compared to a base case.
- Use of recycled materials to off-set use of virgin materials is a big opportunity to reduce the environmental impact of major construction works, The Anzac Bridge pylons used 65per cent waste industrial product to offset use of Portland cement. SMC should commit to using recycled content in steel where available and assuming that it does not compromise structural requirements.

Matters to be addressed
Matter 23.1 <ul style="list-style-type: none">A target must be set for a reduction in the use of Portland cement.

Planning conditions required to avoid or mitigate impacts

Condition 23.1 Construction materials

The Project must be designed and constructed with materials that minimise greenhouse gas emissions, including:

- a. Sourcing materials from local suppliers to minimise haulage distances
- b. Maximise the reuse and recycling of construction materials, including steel, timber, road base and sub-base
- c. Maximise the amount of cement replacement material used in concrete. In this regard, the project must target a 30% reduction in Portland cement content measured by mass (compared to a base case).

24. Climate change and risk adaptation

24.1. Key Findings

Key Findings
<ul style="list-style-type: none">• There is no attempt to coordinate adaptation planning or responses for this project with other major projects.
<ul style="list-style-type: none">• The Adapt Infrastructure tool currently in development by the Office of Environment and Heritage and Sydney Water has not been taken into account.

- This chapter assesses the risk of climate change events on the design and operation of the project.
- The Office of Environment and Heritage and Sydney Water are coordinating the development of the Adapt Infrastructure tool. This is cross-agency work involving a number of state government bodies to avoid projects being considered in isolation, as a standalone piece of infrastructure.
- WestConnex does not operate in isolation from other roads, modes of transport, power sources, water infrastructure and so and the interdependency of these infrastructure types and operating organisations needs to be factored into adaptation planning.
- Table 24-6 outlines measures to manage climate change risks however, there is no measure to coordinate these with other infrastructure operators or assets and this represents both a failure of cross-agency consultation on this EIS and poor application of relevant government work now underway.

Matters to be addressed
Matter 24.1 <ul style="list-style-type: none">• Action must be taken to apply the Adapt Infrastructure tool currently in development by the Office of Environment and Heritage and Sydney Water.

Planning conditions required to avoid or mitigate impacts
The Project must be designed and constructed to achieve an excellent 'Design' and 'As built' rating under the infrastructure Sustainability Council of Australia infrastructure rating tool.

25. Hazard and risk

No comment

26. Cumulative Impact

26.1. Key Findings

Key Findings
<ul style="list-style-type: none">Projects serving comparable or complementary transport demands were either not assessed, or dismissed without adequate assessment while barely-conceived projects such as the Western Harbour Tunnel and Beaches Link have been assessed
<ul style="list-style-type: none">The Western Sydney Airport will significantly change the demand for air services in Greater Sydney but it has not been included in the cumulative impact assessment
<ul style="list-style-type: none">Redevelopment of The Bays Precinct has been dismissed as having an “operational overlap” and being “complementary even though this Project would override intentions for employment and housing including affordable housing.

26.2. Failure to assess the cumulative impact of projects which are directly relevant to or overlap with the project

- The SEARs requires assessment of the cumulative impacts of the 'key issues' identified in the Project Application (including traffic and transport, air quality, health and safety and noise vibration) as well as the cumulative impacts of other projects either related or in the vicinity of the project. The SEARs has specified projects proposed and approved where information is available at the time of writing and yet many are not assessed.
- Strategic transport infrastructure and master plan projects - Green Square, Western Sydney Airport, Central to Eveleigh – have been excluded from the cumulative impact assessment based on their inclusion in the WRTM version 2.3 traffic modelling however no information is available about the forecast populations or movements associated with these projects.
- The cumulative assessment has included barely-conceived projects which this project will enable (such as the Western Harbour Tunnel and Beaches Link) and yet ignored or dismissed as irrelevant other projects that meet the assessment criteria specified in Appendix C.
- The Western Sydney Airport will change how Sydney functions, especially Western Sydney. Commencing operations in the mid-2020s, it is expected to service around five million passengers a year with this doubling to 10 million passengers after five years. The 2017 discussion paper on the Federal Government Inquiry into National Freight and Supply Chain Priorities states that Sydney Airport has about the same value of trade flowing through as Port Botany. Appendix C says the Western Sydney Airport was assessed in terms of traffic, air quality, noise and vibration and human health however traffic details are buried in traffic modelling established specifically for this project and not available for peer-

review and the second airport is not mentioned in Appendix J (noise and vibration), Appendix I (air quality) or Appendix K (human health risk). This project is premised on improved access to Sydney Airport and a second airport will significantly alter travel demand for air services and the failure to assess the impact of a future airport is short-sighted.

- Western Sydney Metro was not assessed even though it is directly adjacent and relevant to this project. Sydney West Metro has been called “Sydney’s next big railway infrastructure investment” delivering a direct connection between the city centres of Parramatta and Sydney and linking communities along the way, as would transport on Parramatta Road. And yet these were not assessed under cumulative impact or as strategic alternatives in Part 4.4 of the EIS even though directly comparable in terms of transport demands. This is deliberate and myopic and represents a failure of the assessment process.
- The RMS is currently planning changes to roads in Alexandria and Moore Park to accommodate the additional traffic generated by WestConnex yet it has not been assessed. However this project has been publicly exhibited including road sections and intersection designs and its exclusion from the cumulative impact assessment means traffic modelling as well as other impacts are potentially inaccurate.
- Redevelopment of The Bays Precinct has been dismissed as having an “operational overlap” and being “complementary” even though this project would override intentions for employment and housing including affordable housing.
- This Project could provide an opportunity to improve cycling links for local trips and yet well-developed projects have not been assessed including the Lilyfield separated cycleway, the Greenway and the Inner City Regional Bike Network which has been identified by Infrastructure Australia as a Priority Initiative. A safe bicycle network can absorb trips of 5-10km in distance relieving road congestion for other traffic.

27. Sustainability

27.1. Key Findings

Key Findings
<ul style="list-style-type: none">• Targets for renewable energy and carbon offsets are not aligned with NSW government policy.
<ul style="list-style-type: none">• The WestConnex Sustainability Strategy was, it claims, developed in alignment with federal and NSW government sustainability objectives and targets. The strategy states it is a “live working document” which will be progressively refined as WestConnex progresses. It must be updated to be consistent with the NSW Climate Change Policy Framework.
<ul style="list-style-type: none">• The target of 6 percent of operational energy to come from GreenPower falls well below what is required for the Project to contribute equitably to State and Federal commitments, and is not in line with other major infrastructure projects in NSW. The Sydney Metro is required to fully offset the carbon emissions generated from its operation, and is procuring renewable energy for a significant proportion of its requirements.
<ul style="list-style-type: none">• The Infrastructure Sustainability Council of Australia (ISCA) defines sustainable infrastructure as that which is ‘designed, constructed and operated to optimise environmental, social and economic outcomes over the long term’ (ISCA 2012).
<ul style="list-style-type: none">• The WestConnex Sustainability Strategy need to be updated to ensure important sustainability aspirations are not diminished as the project approval process continues. Holding the proponent and the successful tenderers to these contractual requirements or conditions of consent will be crucial to see good intent converted into delivered actions. Seeking an 'excellent' rating under the ISCA framework is also an important goal for which the proponent must be held to account.

Matters to be addressed
<ul style="list-style-type: none">• The WestConnex Sustainability Strategy must be updated to be consistent with the NSW Climate Change Policy Framework.

28. Environmental risk analysis

28.1. Key Findings

Key Findings
<ul style="list-style-type: none">• The Environmental Risk Assessment rates as 'Low Risk' several risk aspects that do not appear to adequately account for the impacts on the environment and public health. The method of arriving at a rating of 'Low' is unclear. These risk require further analysis to assess the impact and strengthen options for mitigation. Specifically the following matters require further analysis and detailed, effective responses:• Dust generated by construction activities• Effects of poor in tunnel air quality on human health• Impacts to ambient air quality
<ul style="list-style-type: none">• Biodiversity: The loss of foraging habitat for the Grey headed Flying-fox and loss of habitat for microbats, is assessed as low with a mitigation response to provide compensatory planting (OB9). This is not an appropriate mitigation response as replacement (to maturity) of removed foraging tree species will take years. This assessment should be reassessed for a higher residual risk.• Microbat roosting beneath Iron Cove bridges is highly probable. Details of how disturbance can realistically be managed (if it actually can be) is required.

Planning conditions required to avoid or mitigate impacts
<p>Condition 28.1</p> <p>While application of a rating scheme to assess effectiveness of design and construction of major infrastructure does not guarantee a net benefit environmental or social sustainability outcome it may assist in ameliorating impacts. ISCA's rating tool is a logical mechanism to apply to this infrastructure proposal. Alternatively application of all applicable parts of the NSW Transport for <i>NSW Sustainable Design Guidelines Version 4.0</i> is a reasonable expectation. While it is noted these guidelines are for public transport infrastructure, the state aim of the guidelines: <i>'The Sustainable Design Guidelines seek to deliver sustainable development practices by embedding sustainability initiatives into the planning, design, construction, operations and maintenance of transport infrastructure projects'</i> makes them strongly applicable to this proposal.</p>

29. Summary of environmental management measures

- See comments in earlier chapters.

30. Project justification and conclusion

- See comments in earlier chapters

Appendix A

How capacities for roads are calculated

All roads have a maximum capacity — the maximum number of vehicles that a road can carry. This can be seen in real data, or observations of actual vehicle movements in hourly traffic counts known as either Annual Average Daily Traffic²⁷ (AADT) or Average Weekday Traffic²⁸ (AWT) counts.

The calculation of road capacity is significant for the M4-M5 Link EIS because some of the EIS scenarios say that a road will have an amount of traffic per hour that is impossible to achieve.

There are long accepted, internationally recognised industry standards for calculating capacities.

Traffic engineering practice looks at capacities in a way that describes what is called a *theoretical capacity* and a *practical capacity*. Theoretical capacity is a generic calculation that incorporates general attributes of a road including the number of lanes, their width and configuration. Practical capacity takes into account details that are particular to a road such as gradients, the length of merging lanes and whether or not the road is in a tunnel that may affect driver behaviour.

The method used to calculate the theoretical capacity is as follows:

- a. Identify the hourly capacity or Maximum Service Flow from the Highway Capacity Manual for the design speed of the road.
- b. Identify the number of lanes and multiply it by the Maximum Service Flow.
- c. Multiply the total by an expansion factor²⁹ to get the Annual Average Daily Traffic volume. When a road has reached its hourly capacity the expansion factor used to achieve the Annual Average Daily Traffic volume is usually in the order of 10 for single peaking roads with possibly 11 or 12 for double peaking roads.

The Maximum Service Flow for freeway condition roads is 2,000 vehicles per hour, as shown in Table 7.

²⁷ Annual Average Daily Traffic is the total volume of traffic on a road in a year divided by 365 days.

²⁸ Average Weekday Traffic is similar to Annual Average Daily Traffic but excludes weekend traffic.

²⁹ Expansion factors are used to extrapolate short period traffic counts to longer periods.

Table 7. Hourly traffic volumes from the Austroads highway capacity manual

Table 4.1 Level of Service Criteria for Multi-Lane Roads

Level of Service	Density pc/km/lane	Design Speed 110 km/h			Design Speed 100 km/h			Design Speed 80 km/h		
		Speed ^a km/h	v/c ^b	MSF ^c	Speed km/h	v/c	MSF	Speed km/h	v/c	MSF
A	≤ 7.5	≥ 91	0.36	700	≥ 80	0.33	650	-	-	-
B	≤ 12.5	≥ 85	0.54	1,100	≥ 77	0.50	1,000	≥ 67	0.45	850
C	≤ 18.8	≥ 80	0.71	1,400	≥ 70	0.65	1,300	≥ 62	0.60	1,150
D	≤ 26.3	≥ 64	0.87	1,750	≥ 64	0.80	1,600	≥ 56	0.76	1,450
E	≤ 41.9	≥ 48	1.00	2,000	≥ 48	1.00	2,000	≥ 45	1.00	1,900
F	> 41.9	< 48	d	d	< 48	d	d	< 45	d	d

a. Average travel speed
 b. Volume/capacity ratio
 c. Maximum rate of service flow per lane under ideal conditions, rounded to the nearest 50 pc/h/lane.
 d. highly variable

Source : Adapted from TRB (1985) Table 7.1

Sydney Harbour Tunnel traffic volumes

Table 8 shows traffic counts for the Sydney Harbour Tunnel recorded by RMS (below). These show a rise in traffic volumes from 2006 to 2016 with an estimate for 2017 based on volumes measured to date.

Table 8 Annual Average Daily Traffic for the Sydney Harbour Tunnel

2006	80,757
2007	84,429
2008	83,296
2009	85,403
2010	87,870
2011	87,955
2012	88,128
2013	88,737
2014	88,137
2015	89,830
2016	89,878
2017	89,163

Data source: RMS, 2017³⁰

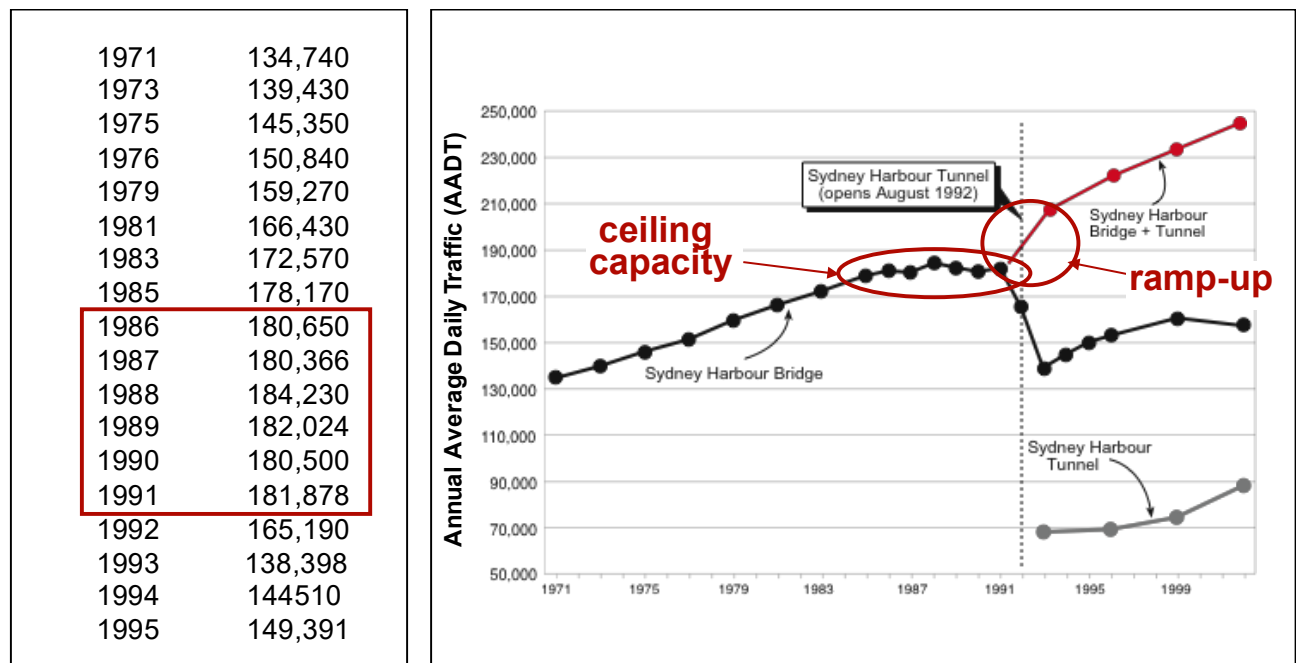
³⁰ <http://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=13&lat=-33.84767470583313&lon=151.1934403269042&id=01003>

The volumes level off at around 88,000–89,000 Annual Average Daily Traffic volume after 2012. It is likely that after 2015, optimisation of signalled intersections feeding the approach roads to the tunnel took place so the traffic levels sit on that volume and will continue to do so until a significant change to the network is made. Significantly, volumes would be unlikely to ever go beyond 90,000 Annual Average Daily Traffic.

Sydney Harbour Bridge traffic volumes

The pattern described above can also be seen in historical traffic volumes for the Sydney Harbour Bridge as shown in Figure 10.

Figure 10. Annual Average Daily Traffic volumes for the Sydney Harbour Bridge before and after opening of the Sydney Harbour Tunnel



Data source: RMS, 1971–2002.

As can be seen, from between 1986 and 1991, traffic volumes on the Sydney Harbour Bridge reached a level of around 180,000 Annual Average Daily Traffic.

The Sydney Harbour Bridge has 8 lanes that operate on a tidal flow system³¹. Tidal flow operations are significant in ceiling capacity calculations because they effectively increase the number of lanes, or roadway capacity available to traffic during the peak periods.

Between 1986 and 1991 the lanes on the deck of the Sydney Harbour Bridge were configured in such a way that they offered motorists 5 lanes in the direction of the peak flow traffic going into the city in the morning and 5 lanes in the direction of the peak flow traffic going through North Sydney in the afternoon. This is why the number of lanes is recorded as 9 rather than 8, because in an operational sense

³¹ As the flow of traffic is heavy coming into the City in the morning and light heading out, and vice versa in the afternoon, RMS varies the amount of lanes heading in different directions by time of day.

implementation of the tidal flow system is like adding an additional lane, and that is why we get the volumes that can be seen.

Between 1986 and 1991 it was a single peaking road with no bus lane. Therefore the theoretical capacity for the Bridge is:

$$2,000 \times 9 \times 10 = 180,000 \text{ AADT}$$

As can be seen the practical capacity of the Sydney Harbour Bridge hovers very closely around this number.

Annual Average Daily Traffic and Average Weekday Traffic

It is important to note that RMS and WestConnex use different traffic values

RMS	Annual Average Daily Traffic
WestConnex Road Traffic Model	Average Weekly Travel values

Average Weekday Traffic values are usually higher than Annual Average Daily Traffic values.

EIS shows physically impossible traffic volumes

As shown above, the Sydney Harbour Tunnel has a capacity of 88,000–89,000 Annual Average Daily Traffic. Yet the EIS shows the Tunnel will have anywhere between 118,000-122,600 Average Weekday Traffic volumes.

The difference between Average Annual Daily Traffic and Average Weekday Traffic volumes for the Sydney Harbour Tunnel is in the range of about 10,000 to 14,000 vehicles per day.

They cannot be higher by 28,000 and 32,000 vehicles per day. It is physically impossible for these volumes to occur, as indicated in Table 9-7 from Appendix H in the EIS where the Sydney Harbour Tunnel is attributed with having Average Weekday Traffic volumes of 122,600 'without project' and 120,400 'with project'.

Part of the explanation for these implausible figures can be found in the hourly volumes that are above the hourly capacity of the tunnel, as discussed earlier. As can be seen, hourly volumes for the four-lane tunnel exceed 8,000 vehicles, or 2,000 vehicles/lane/hour. The Highway Capacity Manual recommends a maximum hourly volume of 2,000 vehicles/lane/hour as can be seen in the table shown in or 3,370 vehicles/lane/hour as described in Appendix B.

Figure 11. Traffic volume estimates from the WRTM for the Sydney Harbour Bridge and Tunnel

Table 9-7 Cross-harbour screenline: WRTM comparison for with and without project scenarios – AWT volumes

Direction	Location	2023 'without project'		2023 'with project'		Change	2033 'without project'		2033 'with project'		Change
		Volume	Share	Volume	Share		Volume	Share	Volume	Share	
Northbound	Gladesville Bridge	41,700	21%	43,800	21%	5%	44,800	21%	46,500	22%	4%
	Western Harbour Tunnel	—	—	—	—	—	—	—	—	—	—
	Syd Harbour Bridge	106,400	52%	108,300	53%	2%	111,800	52%	114,300	53%	2%
	Syd Harbour Tunnel	54,800	27%	52,400	26%	-4%	56,500	27%	55,100	26%	-2%
	Total	202,900		204,500		1%	213,100		215,900		1%
Southbound	Gladesville Bridge	48,200	24%	51,600	26%	7%	49,000	23%	52,000	25%	6%
	Western Harbour Tunnel	—	—	—	—	—	—	—	—	—	—
	Syd Harbour Bridge	87,800	44%	87,100	43%	-1%	94,600	45%	93,800	44%	-1%
	Syd Harbour Tunnel	64,000	32%	63,100	31%	-1%	66,100	32%	65,300	31%	-1%
	Total	200,000		201,800		1%	209,700		211,100		1%
Two-way	Gladesville Bridge	89,900	22%	95,400	23%	6%	93,800	22%	98,500	23%	5%
	Western Harbour Tunnel	—	—	—	—	—	—	—	—	—	—
	Syd Harbour Bridge	194,200	48%	195,400	48%	1%	206,400	49%	208,100	49%	1%
	Syd Harbour Tunnel	118,800	29%	115,500	28%	-3%	122,600	29%	120,400	28%	-2%
	Total	402,900		406,300		1%	422,800		427,000		1%

Source: WRTM v2.3, 2017

Table 9-8 Cross-harbour screenline: WRTM comparison for without project and cumulative scenarios – AWT volumes

Direction	Location	2023 'without project'		2023 'cumulative'		Change	2033 'without project'		2033 'cumulative'		Change
		Volume	Share	Volume	Share		Volume	Share	Volume	Share	
Northbound	Gladesville Bridge	41,700	21%	49,900	24%	20%	44,800	21%	50,400	22%	13%
	Western Harbour Tunnel	—	—	16,900	8%	—	—	—	25,600	11%	—
	Syd Harbour Bridge	106,400	52%	95,800	46%	-10%	111,800	52%	106,100	47%	-5%
	Syd Harbour Tunnel	54,800	27%	45,400	22%	-17%	56,500	27%	45,000	20%	-20%
	Total	202,900		208,000		3%	213,100		227,100		7%
Southbound	Gladesville Bridge	48,200	24%	51,900	25%	8%	49,000	23%	52,800	23%	8%
	Western Harbour Tunnel	—	—	22,400	11%	—	—	—	29,500	13%	—
	Syd Harbour Bridge	87,800	44%	86,600	42%	-1%	94,600	45%	92,200	41%	-3%
	Syd Harbour Tunnel	64,000	32%	46,400	22%	-28%	66,100	32%	50,500	22%	-24%
	Total	200,000		207,300		4%	209,700		225,000		7%
Two-way	Gladesville Bridge	89,900	22%	101,800	25%	13%	93,800	22%	103,200	23%	10%
	Western Harbour Tunnel	—	—	39,300	9%	—	—	—	55,100	12%	—
	Syd Harbour Bridge	194,200	48%	182,400	44%	-6%	206,400	49%	198,300	44%	-4%
	Syd Harbour Tunnel	118,800	29%	91,800	22%	-23%	122,600	29%	95,500	21%	-22%
	Total	402,900		415,300		3%	422,800		452,100		7%

Source: WRTM v2.3, 2017

Appendix B

Capacity calculation for the Sydney Harbour Tunnel

The calculations for the capacity of the Sydney Harbour Tunnel are derived from the *Road Tunnels Manual* produced by the World Road Association based in Paris.

The theoretical capacity of a tunnel lane is calculated using the following formula:

$$\text{Theoretical capacity of lane} = (\text{Free flow speed} \times 10) + 1200$$

For a typical free flow speed in a tunnel of 80km/hr:

$$\begin{aligned}\text{Theoretical capacity of lane} &= (80 \times 10) + 1200 \\ &= 2,000 \text{ passenger cars per hour per lane}\end{aligned}$$

Once the theoretical capacity has been determined, the practical capacity is calculated by applying various adjustment factors to reflect the traffic conditions, types of vehicles and drivers.

$$\text{Practical capacity of lane} = \text{Theoretical capacity} \times \text{peak hour factor} \times \text{driver factor} \times \text{heavy vehicle factor}$$

The peak hour factor represents the relationship of the hourly intensity in capacity divided by four times the maximum number of vehicles in a period of fifteen minutes during peak hour. This factor includes the dispersion of the intensities over the peak hour period, and is used to calculate the practical capacity which is expressed in terms of the maximum sustainable intensity over periods of 15 minutes. This factor usually varies between 0.92, for cases where the flow is highly uniform, to 0.80. Its value is obtained by observation, or default values are used.

The driver factor is based on the degree of awareness and habitual use of the tunnel by drivers. The value ranges from 1.00 to 0.85. 1.00 is applied to drivers that use the tunnel on a regular basis and 0.85 is applied to recreational drivers behaviour or drivers who haven't used the tunnel or similar tunnels.

The heavy vehicle factor adjusts for the presence of heavy vehicles on grades and is determined by:

$$\text{Heavy Vehicle Factor} = \frac{1}{(1 + \text{Proportion of heavy vehicles} \times (\text{Equivalence factor} - 1))}$$

The Equivalence factor varies between 1.5 and 10 depending on the percentage of heavy vehicles in traffic and the inclination and length of the road (see Table 9).

Table 9. Determining Equivalence Factor

Inclination (%)	Length of ramp (m)	E _q Equivalence factor in ramps					
		Percentage of heavy vehicles (%)					
		4	6	8	10	15	20
< 2	All	1.5	1.5	1.5	1.5	1.5	1.5
2	0-400	1.5	1.5	1.5	1.5	1.5	1.5
	400-800	1.5	1.5	1.5	1.5	1.5	1.5
	800-1200	1.5	1.5	1.5	1.5	1.5	1.5
	1200-1600	2	2	1.5	1.5	1.5	1.5
	1600-2400	3	3	2.5	2.5	2	2
	> 2400	3.5	3	2.5	2.5	2	2
3	0-400	1.5	1.5	1.5	1.5	1.5	1.5
	400-800	2.5	2	2	2	2	1.5
	800-1200	4	3.5	3.5	3	2.5	2
	1200-1600	5.5	4.5	4	4	3.5	3
	1600-2400	6	5	4.5	4	4	3
	> 2400	6	5	4.5	4.5	4	3
4	0-400	1.5	1.5	1.5	1.5	1.5	1.5
	400-800	4	3.5	3	3	3	2.5
	800-1200	7	6	5.5	5	4.5	4
	1200-1600	8	6.5	6	5.5	4	4.5
	> 1600	8	7	6	6	5	5
5	0-400	2	1.5	1.5	1.5	1.5	1.5
	400-800	4.5	4	3.5	3	3	2.5
	800-1200	7	6	5.5	5	4.5	4
	1200-1600	9	8	7	7	6	6
	1600-2400	9.5	8	7.5	7	6.5	6
	> 2400	9.5	8	7.5	7	6.5	6

To determine the practical capacity of the tunnel the following assumptions are used:

Peak hour factor = 0.90. There is a highly uniform flow during peak hour

Driver factor = 0.96 There is only a small proportion of non-regular tunnel drivers (tourist in hire cars)

Heavy vehicle factor = E_q = 1.5 (Based on less inclination less than 2 per cent, all length of ramps and less than 5% of heavy vehicles.

$$= 1 / (1 + 5\% (1.5 - 1))$$

$$= 0.975$$

Tunnel capacity = Theoretical capacity x peak hour factor x driver factor x heavy vehicle factor

$$= 2000 \times 0.90 \times 0.96 \times 0.975$$

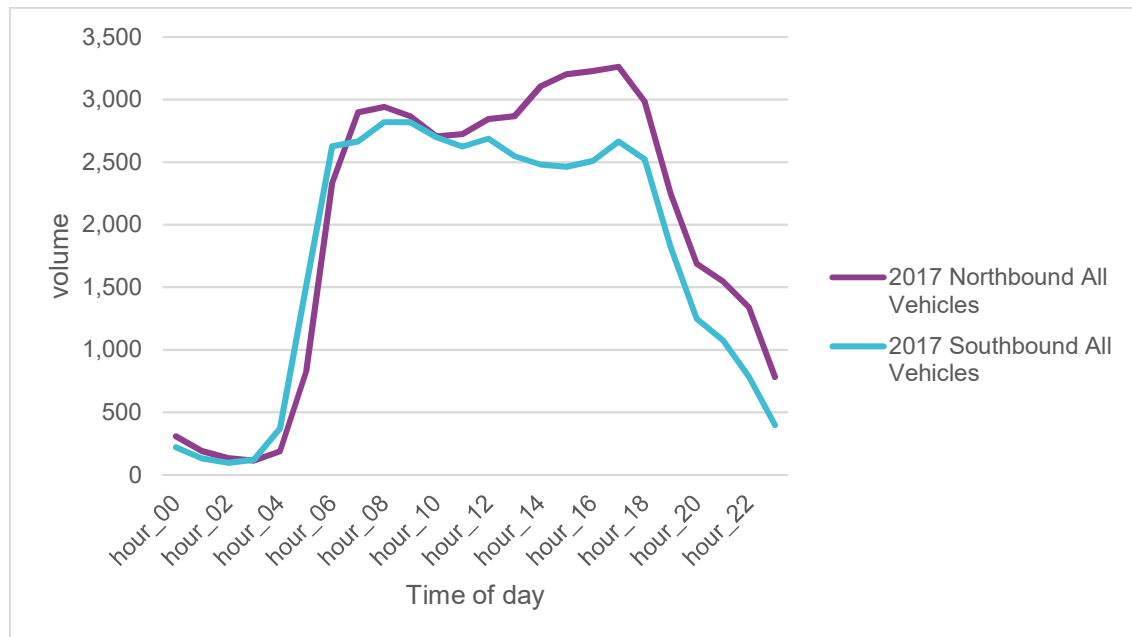
$$= 1,685 \text{ per lane}$$

$$= 1,685 \times 2 \text{ lanes}$$

$$= 3,370 \text{ vehicles per hour}$$

When tested against real data for traffic flow through the Sydney Harbour Tunnel, the practical capacity of 3,370 appears to be in alignment with the real volume counts measured by the RMS (see below)

Figure 12 Hourly traffic volume counts over a 24-hour period for the Sydney Harbour Tunnel (counting station 1.003) for 2017



Data source: RMS, 2017

<http://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=13&lat=-33.84767470583313&lon=151.1934403269042&id=01003>