

ATTACHMENT B

**WESTCONNEX NEW M5
ENVIRONMENTAL IMPACT STATEMENT –
CITY OF CITY SUBMISSION**

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WestConnex New M5 Environmental Impact Statement

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City of Sydney submission to the Department of Planning and
Environment

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Executive Summary

The City of Sydney strongly objects to the WestConnex project. The strategic justification for the New M5 is weak and inconsistent with the NSW Government's strategic planning and policy framework, despite its inclusion in the 2012 *State Infrastructure Strategy* and the *Long Term Transport Master Plan*. The project as proposed in this Environmental Impact Statement (EIS) does not deliver the broader objectives of WestConnex as stated in the *Updated Strategic Business Case* (November 2015).

It should be recognised that **the current iteration of the WestConnex project is significantly different from the proposal in the 2012 *State Infrastructure Strategy*** which could potentially deliver the type of benefits to connectivity and generate urban renewal which it was intended to do. This has also **resulted in a cost increase from the original proposal of \$6.8 billion, or 68 percent.** It should also be noted that these costs are strategic (i.e. at P50) and do not offer appropriate certainty of the Total Out-turn Cost.

WestConnex, if completed, will be Australia's largest ever motorway and toll-road project. The City has significant concerns that the cost of this project has grown to \$16.8 billion which is not wholly funded, and presents a significant opportunity cost. This level of investment could deliver other projects of significant economic and social value to the state which would benefit a greater number of people and businesses.

There has been **no compelling case made for why WestConnex should be built**, and it is the City's view that **the project should not receive approval and not proceed.** The New M5 Environmental Impact Statement (EIS) and the *Updated Strategic Business Case* are clear that the **benefits accruing from Stage 2 do not outweigh the costs.** Benefits are shown to come once the whole WestConnex project is built according to the *Updated Strategic Business Case*, and that no benefits exist until all three Stages are delivered (WestConnex Full Scheme: Economic Appraisal, KPMG, 19 November 2015). It would therefore be reasonable to assume that **both the M4 East and New M5 provide disbenefits to society as standalone projects.** This is particularly concerning given there is a significant risk that Stage 3 will not be built.

The evidence shows **that around 90% of people who live in western and south-western Sydney and work in the CBD use public transport**, and that demand is rising (SGS Economics and Planning, 2015). There is only cursory consideration of the future delivery of the second Sydney airport and no consideration of the expected – or potential – transfer of jobs from the east to the west as a result.

An independent review of the WestConnex *Updated Strategic Business Case* by SGS Economics and Planning demonstrates that the BCR of 1.74 appears to be miscalculated and is potentially over-stated, based on the evidence in the business case. **It is unclear why the NSW Government would proceed with this project given this level of uncertainty.**

In terms of project integrity, the project has only progressed to the strategic business case stage which is intended to provide justification for the project – not provide the basis to proceed with delivery. It is unclear how the other WestConnex business cases relate to the existing program, and what basis the Government has to proceed with delivery given the lack of detailed planning or rigorous assurance. **The project should at least pass through all required Infrastructure NSW and NSW Treasury Gateways before**

proceeding to delivery. This lack of program assurance and confused business case staging signals significant governance flaws that cannot be ignored.

The City is very concerned that environmental assessments are being done on individual stages in a way that does not consider the full impacts of the entire proposed project. **The outcome from the delivery of Stage 1 and Stage 2 of WestConnex is likely to be a legacy program of infrastructure that does not and cannot respond flexibly to the intended land use outcomes of Government.**

Impacts on the City of Sydney

The delivery of the New M5 and in particular the St Peters Interchange, will have a significant impact on residents and businesses located in the City of Sydney. The increased traffic resulting from this project will impact on urban amenity and will limit the ability for public transport services to operate efficiently due to increased local road congestion.

The New M5 EIS assumes that by 2031 the full WestConnex project will be complete. This includes the M4-M5 Link (Stage 3), which will have additional significant impacts on residents and businesses in the City of Sydney LGA, including the eastern end of Parramatta Road and Broadway, the University of Sydney campus and adjacent residential, health and business precincts. **Nowhere in the EIS are these impacts considered, nor information given to the public to fully consider or understand the implications of the whole WestConnex program.**

The **increase in road capacity** on Euston Road from four lanes to between six and eight, and Campbell Road from two lanes to six will have noise impacts on people living in the area and using Sydney Park.

Similarly, the EIS demonstrates that **air quality, even at existing levels, is close to the allowable limits, and will only get worse** with a major interchange, road upgrades and ventilation stacks implemented at the St Peters Interchange and surrounds. If new air quality standards as proposed by the Council of Australian Governments (COAG) in 2012 are implemented, **the New M5 would well exceed allowable air pollution levels.**

The proposed project will have **impacts on the amenity of Sydney Park, an important open space** resource for a growing number of residents and visitors. The project proposes to **take land on the eastern side of the park** to deliver the upgrade of Euston Road, and **take land on the southern boundary for a construction compound.**

The development of the project would also see the **removal of mature trees on the boundary of Sydney Park** to widen Euston Road. While these trees would be reinstated, it will take decades to achieve the level of canopy that exists.

The EIS fails to appropriately provide for active transport connectivity, with significant concerns raised by the City regarding connectivity and safety. The proposal, especially for the raised pedestrian and cycle bridge over Campbell Road, **does not provide infrastructure to cater for the needs of different user groups** such as recreational walkers and commuter cyclists. **The City has concerns about how safety will be managed on the proposed bridge**, including access by emergency services. **Infrastructure for active transport has been designed to minimum standards** as opposed to traffic lanes which are not.

Failure to assess the project

The EIS lacks rigour and sound analysis, despite the huge volume of documentation. This lack of rigour and analysis is consistent across all chapters and appendices. The **project objectives are biased towards a motorway solution**, so that any proposed alternative falls short of the proposed solution. Similarly, the work undertaken in the EIS is highly compliance driven, and fails to take into account opportunities or strategic impacts, and **the assessment of cumulative impacts is almost negligent**.

The New M5 project has only been assessed to 2031, which does not take into account the 45 year concession period for the asset as stated in the *WestConnex Updated Strategic Business Case*. The assessment does not account for future events that may radically change travel demands or behaviours.

The land use policy of Government in *A Plan for Growing Sydney* (DP&E 2014) articulates a desire to re-orient Sydney to the west; creating employment lands for jobs and growth areas for residential and supporting facilities development. **It is not clear why, given this land use planning, the Government's key major investment is in a project that supports the transport task to the east.**

The EIS does not adequately consider the potential impact or opportunities presented by the future development of the Western Sydney Airport or the Moorebank Intermodal Terminal. These two defining changes in land use will play a critical role in reallocating jobs that traditionally have been located in Eastern Sydney to Western Sydney. This reallocation will fundamentally change people's travel behaviour, particularly as the data shows that the majority of people living in Western Sydney are employed in industries that will be supported by the new airport and intermodal terminal. It does not make sense why these two major changes are not appropriately considered in the EIS.

The evidence provided by the EIS in support of the New M5 is incomplete and unbalanced, selectively including and excluding impacts from subsequent planned stages of the WestConnex project. **The analysis of strategic alternatives in the EIS is cursory and fails to demonstrate the New M5 extension is the best option to meet the needs of a growing Sydney population.** The EIS also does not take into consideration the travel patterns of residents and businesses in western or south-western Sydney that the New M5 is intended to serve, nor the wider impacts on inner-Sydney communities affected by the WestConnex program.

Traffic on the existing M5 East exceeded capacity "within months" of opening (New M5 Project Overview, November 2015), including recent road widening. This lack of capacity is, in part, the rationale for the construction of the New M5. **The City contends that managing demand on the M5 East and providing high quality public transport alternatives for those who can change mode would be a more effective long term solution that simply a 'predict and provide' approach.**

Strategic justification for the project

WestConnex is presented as a 'transformational' infrastructure project, however, the EIS is not clear on what transformation it will achieve. **There is no demonstration that WestConnex delivers transformation in terms of social or economic improvement, or better land use outcomes. To the contrary, WestConnex will deliver a piece of**

infrastructure that increases traffic on local roads, does not enable value capture or urban renewal, and is not consistent with the government's land use priorities or the proposal in the 2012 State Infrastructure Strategy.

The assessment in each area of the EIS broadly lacks rigour, and has taken a compliance approach to the SEARs rather than more strategically engaging with stakeholders to leverage knowledge, or to investigate opportunities to deliver better outcomes for communities. **The EIS fails to demonstrate the true impact of the proposal especially from an operational perspective, and does not identify and articulate any benefits.**

The EIS for the New M5 makes it clear that this project is predicated on “*other WestConnex projects*” including the Southern Gateway, Southern Extension and the Western Harbour Crossing. **The New M5, as with the M4 Widening and M4 East will lock Sydney into a multi-billion dollar road building future rather than providing much-needed public transport infrastructure** on the heavy rail system, or connecting Sydney's communities through sustainable transport services and facilities. The EIS refers to the additional stages of WestConnex in terms of the benefits they deliver in the context of the New M5 assessment, but does not consider the negative impacts.

The alternatives that have been considered by the project are poorly considered, and poorly assessed. The objectives of the New M5 in the EIS (p. iii) are clearly focused on the delivery of a motorway solution. Like all road projects that have come before it, **this project is focused on the movement of vehicles rather than the efficient movement of people and goods**, and shows disregard for place in terms of integration with land use. The functionality of existing places are not considered in the design, rather, **the project objectives to deliver a motorway solution are brutally inflicted upon existing communities** without consideration of the character of place or the most appropriate priority of movement in that place.

Legacy implications of the project

A larger question raised by the proposed New M5 project is **what happens if capacity on this motorway is reached?** The existing M5 East has proven that a new motorway can easily reach or exceed capacity within a 15 year timeframe. If that outcome is realised for the New M5, **Sydney will be left with a transport legacy that cannot support the jobs growth in the west** consistent with Government policy. Sydney needs to manage demand for existing road assets **to maximise economically productive use and deliver sustainable transport** as a real alternative to car travel. International cities such as Los Angeles are moving away from their dominant car-based culture to invest in public transport in order to build the sustainability and attractiveness of their city for residents, businesses and visitors alike.

The EIS for the **New M5 fails to take into account the whole-of-life asset impacts** of the motorway on both amenity (particularly in the city centre and urban renewal areas such as Ashmore, Green Square and Mascot) and traffic congestion. All assessments have a maximum horizon of 15 years which is not consistent with the proposed concession of 45 years that is stated in the *Updated Strategic Business Case*. **This demonstrates a failure of the project to forecast its impact or usefulness during its operation.** This creates risk and uncertainty. This risk is exacerbated for two reasons; first, is that the Government is the bearer of the financial risk for the entire WestConnex program which places taxpayers at risk. Second is that the *Updated Strategic Business Case* demonstrates negative benefits for Stage 1 (M4 East) and Stage 2 (New M5) unless Stage 3 is built.

A missed strategic opportunity

The government has **missed a significant strategic opportunity to be innovative and truly integrated in its approach** to developing a solution for the growing needs of south-western and western Sydney.

The statement that the New M5 project is an integrated transport project is false and misleading. It is a motorway that does not provide for improved public transport connections and has not fully considered the active transport component in line with government policy. The City's view is that the **government could have delivered a better outcome by focusing on ways to "improve access" that is modally agnostic and more consistent with government's land use policies.**

A better outcome may have been achieved through **a needs-based assessment to understand the transport task at hand**, and then to determine **the right mix of options to meet that task and support's the Government's strategic land use objectives**. This would likely have resulted in a multi-modal strategy rather than a motorway outcome.

Additionally, **freight connectivity may have been improved through improved pricing on the existing M5 East** (noting that people are likely to find alternative routes once a toll is introduced – and this is confirmed in the New M5 documentation). This toll effect will release capacity on the M5 East to better service the freight connections to the Port/Airport.

Conclusion

The inadequacy of the New M5 EIS is so profound that the **City of Sydney does not believe it can be used as the basis for a Ministerial determination** to approve the project.

Despite this government's excellent track record of delivery, "making it happen", this should not be at the expense of delivering the right outcome.

Chapter 1: Introduction

Project benefits

The benefits of the New M5 are summarised in the EIS in Section 1.4 (Volume 1A, p1-9). The benefits are limited to just two bullet points.

The EIS states the first key benefit as;

“The New M5 will offer quicker, more reliable trips between Western Sydney and the Sydney Airport / Port Botany precinct... by providing additional motorway capacity within the M5 corridor”.

This benefit is questionable. The New M5 does not provide direct and efficient access between south-western Sydney and the Sydney Airport / Port Botany precinct as the Sydney Gateway connection is not provided (and is still subject to design, costing and approvals). Even assuming the Sydney Gateway is delivered, the M5 East provides for much more direct access between Western Sydney and the Port and Airport. The original intention of the WestConnex project was to develop this connection from the M5 East to the Airport/Port rather than to build an entirely new motorway.

The argument that the New M5 is required to relieve the M5 East allowing for more efficient freight movement on the existing motorway falls away as tolls are applied to the M5 East. Tolling this currently free route is likely to result in toll avoidance and therefore reduced traffic on the M5 East to the extent that congestion is reduced with resultant improvements in the efficient movement of freight. The impacts of the toll on the M5 East and resultant toll avoidance is referenced in the *WestConnex Updated Strategic Business Case Technical Paper 1 Traffic Report*, p52.

Using price mechanisms to manage motorway demand in preference to the costs of new road building would appear to be an equally valid and effective mechanism to improve freight access between south-western Sydney and the Sydney Airport / Port Botany precinct.

The second key benefit of the New M5 described in the EIS relates to;

“Improvements to connections between employment and population centres along the M5 Motorway corridor... this would generally include a direct connection to employment zones within Sydney’s global economic corridor generally, and specifically near Sydney Airport and Port Botany via the St Peters Interchange”.

As discussed, the New M5 does not directly serve the Sydney Airport and Port Botany precinct. **The existing M5 East provides a more direct connection to and from employment and population centres along the M5 Motorway corridor.**

It is noted that one of the rationale for WestConnex is the need to meet dispersed trips, that is, non-centre based employment (*WestConnex Updated Strategic Business Case*, p27). This is at odds with the statement in the EIS that the New M5 will connect population and employment centres.

The City of Sydney acknowledges that trip types are diverse, and that not all trips can be serviced by public transport. However, the objective of the Government in creating a truly integrated transport network should be to release road capacity on existing roads through a mix of demand management (especially for short trips) and public transport. After all, if the trip types really were as diverse as is stated in the Environmental Impact Statement for the New M5, **then there would not be a sufficient aggregation of demand to service the corridor.** This would indicate that the proponent has not performed its Due Diligence by assessing alternative options within a truly integrated (and constrained) transport system.

Throughout the Sydney Motorway Corporation's (and previously with WestConnex Delivery Authority) engagement with the City of Sydney, assertions have been made that the intention of the New M5 is not to deliver traffic into the Sydney CBD. However, given this stated benefit of the project and the city centre being the centre of the Global Economic Corridor, it would seem false to make this claim. There are similar inconsistencies throughout the EIS.

The New M5 project appears to enable long distance trips between the south-west and the east/Sydney CBD, yet the modelling does not support this; nor does the *Updated Strategic Business Case*. **Investing billions of dollars to enable these types of trips is not consistent with the land use policy of the Government's *A Plan for Growing Sydney* (specifically, Direction 1.7 Grow strategic centres – providing more jobs closer to home).**

The limited benefit of the New M5 as described in the EIS is supported by the economic analysis presented in the *WestConnex Updated Strategic Business Case* (November 2015) which **clearly shows that there are no benefits accruing from Stages 1 and 2 of WestConnex** (*WestConnex Full Scheme: Economic Appraisal*, KPMG, 19 November 2015, p43). If considered independently, the New M5 would not have a positive cost-benefit ratio; that is, the costs would outweigh the benefits of the project. More people will suffer a negative impact as a result of the project, than would benefit from it.

Chapter 2: Assessment Process

The EIS lacks rigour and sound analysis, despite the huge volume of documentation. This lack of rigour and analysis is consistent across all chapters and appendices. **The project objectives are biased towards a motorway solution**, so that any proposed alternative falls short of the proposed solution. Similarly, the work undertaken in the EIS is highly compliance driven, and fails to take into account opportunities or strategic impacts, and **the assessment of cumulative impacts is almost negligent**.

The New M5 project has only been assessed to 2031, which does not take into account the 45 year concession period for the asset as stated in the *WestConnex Updated Strategic Business Case*. The assessment does not account for future events that may radically change travel demands or behaviours including major land use changes and opportunities such as the development of the new Western Sydney Airport at Badgerys Creek, and freight intermodal terminals.

Traffic on the existing M5 East exceeded capacity “within months” of opening (New M5 Project Overview, November 2015), including recent road widening. This lack of capacity is, in part, the rationale for the construction of the New M5. **The City contends that managing demand on the M5 East and providing high quality public transport alternatives for those who can change mode would be a more effective long term solution that simply a ‘predict and provide’ approach.**

The separate environmental approvals for each part of WestConnex makes assessment of the project, or of each individual stage difficult. **The nexus between the three core stages is strong, so it is difficult to assess each individual stage separately.** Although the proponent has attempted to show the impacts of the entire program in the traffic modelling, there are dangers in its limitations and assumptions. First, the study area and time horizons are not appropriate to understand the spatial or temporal impact of the project; second, the assumption that all stages will be built, including the extensions of the Sydney Gateway, Western Harbour Tunnel and Southern Extension is aspirational at this stage, given funding has not been secured and investigations are still underway. Thirdly, **attempting to de-couple each stage from the program means it is difficult to assess each project on its merits alone**, which is what is being asked. Fourthly, the project does not assess the cumulative operational impacts in any meaningful way to understand how each stage or the whole of WestConnex will affect the transport system, including strategic bus corridors.

Chapter 3: Strategic context and project need

The EIS claims the WestConnex is an integrated transport solution, yet this has not been demonstrated. The design of the project integrates a number of motorways, but does not integrate with multiple modes of transport to enable multi-modal trips.

The primary intention of this motorway is to carry private vehicles and this user group accounts for ~90% of the traffic. As a toll road, private cars are the desirable users of this facility. Without them, there is insufficient revenue generation to support the viability of the project.

Currently, the only real lever the government has to influence the location of jobs is to move government jobs into 'regions' such as western Sydney, but this does not send a signal to the broader private market that opportunities exist to make different choices. Despite the attractiveness of Sydney Harbour and Sydney CBD to multi-nationals, space for growth is limited and rents will always be at a premium. **It is not until government transport infrastructure investment focuses on access to strategic growth areas in western Sydney that business will consider the government has made legitimate efforts to service those markets.**

The development of the Western Sydney Airport at Badgerys Creek and the Moorebank Intermodal Terminal is also likely to shift activity and jobs currently focused on the Airport Port and surrounding areas, to the west **nullifying the alleged demand for a motorway to the east.**

The identified key user groups in the EIS do not include people travelling to work from the west to the east, despite getting people to jobs in the east being a key driver for the project. **This demonstrates an inconsistent narrative throughout the documentation which lessens the legitimacy of the proposal.**

Project objectives (Section 3.5)

The stated project objectives are not related to the broader WestConnex objectives, and as such, there is no assessment of the validity of the New M5 objectives. **There is no information or statements in the EIS explaining the rationale for the project objectives.**

The New M5 EIS fails to demonstrate how the project objectives are met by the proposal. For example, traffic modelling is not provided to support objectives such as:

- *Support Sydney's long term economic growth through improved motorway access and connections linking Sydney's international gateways and Western Sydney and places of business across the city.*
- *Cater for the diverse travel demands along these corridors that are best met by road infrastructure.*

Strategic planning and policy framework (Section 3.1)

The EIS does not align with the Government's land use objectives in *A Plan for Growing Sydney* (DP&E 2014). The intention of that plan is to increase liveability by creating centres of economy to enable people to work close to where they live. **Rather than supporting emerging land use changes such as the Western Sydney Employment Lands, the proposed delivery of WestConnex is contradictory to the Government's own policy objectives.** Coupled with the future delivery of the Western Sydney Airport, it is unclear why the Government would invest in road infrastructure to take people to the east when the intention is to support and grow the Western Sydney economy. **This is a deep contradiction in the Government's public message that WestConnex is for the west.** Certainly the investment could be better used to support and grow the Western Sydney economy.

Another consideration is that the EIS states that the WestConnex program will “*Complete the orbital motorway network*”. **This is a misnomer as the orbital network was completed when the M7 opened in 2005.**

The view that “*WestConnex would facilitate urban renewal and improve the ability of communities to utilise space more efficiently*”, is repeated in the EIS (Volume 1A, p3-10). The EIS goes on to state; “*Reducing congestion and through traffic in a number of communities would enable road space to be reallocated to public transport and has the potential to improve air quality in these areas*”.

The EIS contains no proposals to reallocate road space to public transport or to protect local communities from increased traffic and resultant deteriorations in air quality. It fails to recognise that increased traffic flows will reduce air quality and increase community severance. Maintaining car dependency will, over time, increase the space required for parking and roads reducing the ability of communities to effectively and efficiently utilise scarce space in the future.

The EIS makes multiple references throughout the documentation to the *NSW 2021: A Plan to make NSW number one*. **This plan has been superseded by the Premier's Priorities and the State Priorities** (<https://www.nsw.gov.au/making-it-happen>). There are two relevant priorities to note in relation to this project.

First, is the priority, “*Improving road travel reliability*”. This priority has the performance measure; “*90% of peak travel on key road routes is on time*”. There is a clear link between the objectives of the New M5 to meet this performance indicator. However, the focus on “key road routes” indicates roads under the control of the Roads and Maritime Services. Given the epithet ‘what matters is what is measured’, this would imply **that the intention is to keep key motorways and state roads moving, potentially to the detriment of local roads.**

The second key priority interface is, “*Ensure on-time running for public transport*” with the performance measure, “**Maintain or improve reliability of public transport services over the next four years**” being applied. Public transport relies on the local road network to provide an accessible service network to people. Given the EIS demonstrates an increase in local road traffic on streets that are already congested, it is difficult to see how the project contributes to this priority. **The need for public transport in this area is growing, and any impedance to the running of services will be detrimental to the Government's aims.** The EIS is silent on future public transport, and this is inconsistent with the growing demand for rail and bus services across Sydney.

The New M5 Environmental Impact Statement is silent on how buses will integrate and benefit from the New M5 construction except for mentioning that bus priority may be something to investigate. The EIS does not identify any dedicated public transport infrastructure or provide an assessment of needs and opportunities. This again indicates that the intention of the design is not for an integrated transport solution. There is no integration with heavy or light rail.

Sydney City Centre Access Strategy (Section 3.1.5)

The EIS suggests;

“WestConnex, including the project, would support the City Centre Access Strategy by:

- *Reducing the volume of extraneous (through) traffic using the CBD’s surface road network*
- *Reducing congestion within the CBD, through encouraging motorists to use bypass routes and avoid the city centre road network.”*

The EIS provides no evidence to support this assertion. It is difficult to comprehend how the New M5 will reduce the proportion of existing through-traffic using surface roads in the CBD. **Perhaps with a different design this may have been possible.** The Cross City Tunnel is underutilised and failed to reach its potential of reducing through-traffic choosing surface roads. Traffic on the existing M5 East would currently be expected to use the Eastern Distributor and Cross City Tunnel or Harbour Tunnel to effectively bypass the Sydney CBD. The tolls that would be applied to make this journey are likely unpalatable for many road users and would result in under-used infrastructure and further saturation of traffic on surface road networks.

It is noted that the New M5 EIS denies the New M5 is intended to be used to access the Sydney CBD. The City finds this contention questionable. Contrary to these assertions in the EIS, the New M5 and St Peters Interchange with widening of the Euston Road corridor, will increase traffic flowing into the Sydney CBD. The difference will be that traffic will use roads in the inner-south rather than the inner-west to make this journey, and **travel through suburbs that are undergoing rapid residential intensification and accommodate multiple industrial and business land uses.**

The NSW Government has articulated a view, through the *Tomorrow’s Sydney* campaign, **to reduce peak period traffic and bus numbers in the Sydney CBD recognising road capacity in the CBD is constrained and will become more so** through the implementation of the Sydney CBD South East Light Rail project.

In the M4 East Submissions Report (page 4-290), it is stated: *“The project is not intended to enable more private vehicles to enter the Sydney CBD”*. Yet, the overall WestConnex objectives include:

*“Relieve road congestion to improve the speed, reliability and safety of travel in the M4, M5 and **Central Business District (CBD)**/ airport/ port corridors, including parallel arterial corridors”.*

(WestConnex Updated Strategic Business Case, p23)

The *Updated Strategic Business Case* states that, “*Improving the speed, reliability and safety of any travel mode will increase its attractiveness, and therefore use*”. It is difficult to reconcile the view that neither the M4 East nor New M5 are intended to increase traffic accessing the CBD given the project objectives. **The design of each Stage of WestConnex delivers connections to the Sydney CBD via local roads, yet the impacts of these connections have been excluded from the impact assessments.** If neither the M4 East nor New M5 will contribute to this overall WestConnex objective with respect to traffic travelling to/from the CBD, then the objective will not be met by the WestConnex project.

There are multiple statements in the New M5 EIS which strongly imply or explicitly state the project is designed to improve access to the Sydney CBD, which will increase the attractiveness of vehicular travel to access the Sydney CBD. For example:

[In reference to demand on the M5 East] “*Congestion occurs mainly during the morning and evening peak hours when many people are commuting to and from work. This congestion is concentrated on the main arterial roads leading to employment centres*”. (Volume 1A, p 3-14)

and

“*There is still a need to provide a link between Western Sydney and other centres in Sydney, such as the Sydney CBD, Sydney airport and Port Botany. These connections are required to allow not only for the flow of workers...*” (Volume 1A, p3-15)

and

“*...the Transport Master Plan indicates about 500,000 people access Sydney’s CBD and 100,000 passengers travel through Sydney Airport each day. These statistics indicate a strong growth in demand for road travel...*” (Volume 1A, p3-15)

Road safety

National Road Safety Strategy for Australia 2011-2020 (Section 3.2.4)

The EIS suggests that;

“*By relieving road congestion (and thereby improving the speed, reliability and safety of travel along the M5 Motorway corridor), the delivery of the project is consistent with the overarching road safety directions identified in the Road Safety Strategy*”.

It is difficult to understand how increasing traffic speeds will improve safety. The Roads and Maritime Service in the factsheet, *How does speeding increase the chances and severity of a crash?* States;

“*As a vehicle’s speed increases so does the distance travelled during the driver’s reaction time (reaction distance) and the distance needed to stop (braking distance). Also the higher the speed, the greater the amount of kinetic (moving) energy that must be absorbed by the impact in the crash*”

and

“*Speed is a major contributory factor to the severity of a crash*”.

The factsheet presents evidence that lowering speed limits helps decrease the risk and severity of crashes.

When considering the injury risk based on vehicle impact, the factsheet makes it clear that:

“In addition to speed greatly increasing the risk of severe or fatal injury, a number of studies show that side impact or ‘t-bone’ crashes are only survivable by passengers at much lower speeds than frontal crashes. This means that controlling speed at intersections is critical, to reducing crashes and casualties in areas where this type of conflict may occur”.

This supports the request by the City of Sydney for design changes to proposed intersections associated with road widening in the St Peters area and the removal of slip lanes, facilitating increased speeds of turning vehicles at intersections.

Reduced vehicle speeds on local roads and at intersections will also protect pedestrians. As the factsheet makes clear; *“reductions in vehicle speed will significantly reduce the severity of outcomes for pedestrians in the event of a crash”.*

Why the project is needed (section 3.3)

The EIS is clear that the rationale for WestConnex is based on a ‘predict and provide’ approach to road building:

“Sydney’s population is expected to increase by more than 1.6 million people by 2031 and without major investment in the road network infrastructure this growth would result in worsening road congestion. This congestion would in turn affect Sydney’s economic competitiveness as a global city. To meet these challenges, the NSW Government is proposing to provide additional traffic capacity...”
(Volume 1A, p3-13)

To suggest that urban road building will resolve current and future traffic congestion is disingenuous. Sydney will continue to grow beyond 2031. The ‘predict and provide’ approach suggests that the Government is prepared to continue adding additional road infrastructure to meet current and future demand while also striving to attain a ‘congestion free’ urban road network. The natural conclusion is a city overtaken with the land consumption demands of roads, interchanges and parking to the extent that economically productive activities and residential neighbourhoods can no longer be accommodated.

WestConnex will not deliver long-term benefits to the economic growth of NSW or Australia, rather it will consume valuable public resources, locking people into long car commutes on expensive toll roads.

Freight, commercial and business services

Section 3.3.5 considers freight, commercial and business services. The EIS makes assertions regarding the proposed Western Sydney Airport and its potential implications for the movement of freight around Sydney, concluding that:

“Overall, the movement of freight around Sydney is not considered to be significantly altered by the introduction of the new airport, for the following reasons:

- *The operation of the of the proposed Western Sydney Airport would be staged, ramping up over time, with initial operations only commencing in the mid-2020s (a minimum of five years after the completion of the project)*
- *Freight arriving at the new airport would still have destinations across wider Sydney*

- *Port Botany and Sydney Airport would still be key freight entry and exit points, with the new airport to complement the existing airport". (Volume 1, page 3-16)*

The City considers these justifications to be weak. The recently released *Western Sydney Airport Environmental Impact Statement* indicates: 'Sydney Airport has limited ability to handle further passenger growth due to the physical constraints at the existing site. The limitations of existing infrastructure are becoming apparent at peak times and are expected to become more pronounced over the coming decades.' (Western Sydney Airport EIS, Executive Summary, page 7)

The existing M5 East provides a direct link between Western Sydney and the Port/Airport precinct. **With the implementation of a toll on this corridor traffic will reduce, increasing the available capacity for economically important freight.** Further the M4-M5 Link and Sydney Gateway connect the M4 East with Port Botany and Sydney Airport and will be completed much later than the M4 East and St Peters Interchange. Until these connections are in place the existing M5 East offers the most direct and viable connection between Western Sydney and Port Botany and Sydney Airport.

The reference to a minimum of five years between the completion of WestConnex and the commencement of operations at Western Sydney Airport is incorrect; the actual gap is much less and may not exist at all.

Freight arriving at the new airport will have very different movement patterns from the freight arriving at Sydney Airport, given the considerable difference in origin/destination locations. Freight travelling to and from the Western Sydney Airport will mostly be concentrated on the roads serving the new airport. The EIS states: "*heavy freight activity precincts are concentrated in Western Sydney*". (Volume 1A, p3-16).

Given the very recent release of a draft EIS for the Western Sydney Airport and recognising the airport will operate without a curfew, **the assumption that the role of the new airport will be limited appears premature.**

The proposed New M5 project states that a key function is to carry people from the growing south-west to jobs in the east, particularly the Airport and Port. **This is not consistent with government policy to develop a polycentric city that creates jobs close to where people live.** It is also not consistent with existing travel behaviour trends that show for these origin and destination pairs, the demand is for public transport (heavy rail in particular), not motorways. **Continuing with the traditional approach of connecting people in the west with jobs in the east by car will not support the timely or appropriate development of jobs in the west across multiple industries.** In this regard, WestConnex is an expensive and short-sighted program of works.

An identified key user group for the New M5 project is people travelling to the Airport. This clearly promotes further car travel to the Airport which will create greater congestion, rather than promoting more sustainable alternatives such as heavy rail.

Even though the proposed project states it will connect people to the Port or Airport, it really does neither. The project does not offer people travelling from the south-west direct access to either the Port or the Airport. Instead, **people are required to exit at the proposed St Peters interchange onto Gardeners Road then approach the Airport and Port on local roads.** The cynical view of this is that the proponent is seeking to force people to travel further and as a result, pay higher tolls given they will be charged on a per kilometre basis.

An example of this is how people in the Mascot and Waterloo/Beaconsfield areas will access the Airport and Port via Sydney Gateway. As the location of key employment lands (including freight logistics companies), it would seem logical that infrastructure at the scale and with the stated importance of WestConnex would improve access to these destinations. Instead, **the design of the St Peters Interchange does not allow traffic entering from either Euston Road or Gardeners Road to connect with the future Sydney Gateway.** This shows the intention that traffic in these areas, which already experiences significant traffic congestion at key intersections, will continue to access the Port and Airport via local roads, in particular through Mascot Town Centre. This will worsen congestion on these streets, particularly given the local traffic increases that result directly from the construction of the New M5, including through induced demand and toll avoidance on the combined M5 corridor.

Similarly, early designs indicate **vehicles travelling on the proposed Southern Extension will only be able to head eastbound on the New M5, there will be no ability to head west.** There is no rationale why this is the case or what alternate path people travelling west from the south, or south from the west, would need to take.

The EIS demonstrates that the Project does not actually service key destinations such as the Port and Airport. The project is pushing larger volumes of traffic onto already congested local roads (for example, Gardeners Road where the intersections with Botany Road and O’Riordan Street are already exceeding capacity) without comprehensive traffic modelling to understand the impact. The existing M5 East provides a more direct connection between south west Sydney and both the Port and Airport, and **it is unlikely that freight vehicles will choose a circuitous route such as the New M5 over a more direct route; especially given capacity is released on the M5 East as a result of tolls being introduced.**

The summary of this EIS chapter states that the project will “*provide access to jobs in Sydney’s east and CBD*” (p. 3-21). **This clearly demonstrates an objective of this project is to connect people to the Sydney CBD,** despite this being actively denied during consultation with the City of Sydney and being denied through the modelling approach. The City of Sydney recognises that with growing congestion, there is decreasing road space for inefficient transport modes such as the private car. Building car-based infrastructure to the city centre is not consistent with supporting the government’s own investments in active and public transport, nor its land use policies.

Regional impacts

The Secretary’s Environmental Assessment Requirements mandate the proponent to, “[take] *into account infrastructure and services within the adjoining subregions*”. **This has not been adequately completed.**

To fulfil this requirement, the proponent would need to broaden the scope of its impact assessment to include impacts of traffic on major renewal sites such as Mascot (which is not adequately considered), Green Square (which is not considered at all), and the Ashmore precinct (not considered, and is in close proximity to Euston Road/Sydney park Road intersection) particularly from an urban amenity perspective. **The City also has significant concerns on the impact of the project on access to employment lands in Rosebery and Mascot in particular.**

Section 3.4 of the Environmental Impact Statement states that an indirect benefits of the New M5 motorway includes benefits to other transport users, which really means transferring people from public or active transport to car trips. This is contrary to the long-term outcomes sought by government to increase public transport use.

Another indirect benefit is stated as reducing congestion on surrounding road links, but this has not been adequately modelled and the documentation **in the EIS demonstrates that in many cases, is simply untrue** (see section 10.3.2.2, Table 99). Although the modelling shows there is a significant reduction in traffic on some roads (for example, the Princes Highway), **this is because this traffic is being deliberately funnelled elsewhere.** The impacts of this diversion have not been adequately tested in the modelling, and there has not been adequate consideration of potential alternate routes as a result of higher traffic on local streets (for example, traffic using Mitchell Road rather than Euston Road – they currently function as a parallel set).

Where traffic flows are reduced, such as along Princes Highway, **the roadspace must be reallocated to alternative transport users** (public transport and active transport) and to improve local amenity (widened footpaths) as an integral part of the WestConnex project. This will avoid future additional traffic being induced to use the road network as increased capacity becomes available.

There is potential for a rat-run to King Street that will emerge as a result of the changes to local roads. These potential rat runs have not been adequately identified due to the limitations of the traffic model study area, and the trip assignment that has been built into the model (for example, Mitchell Road is showing a decrease in traffic but in the view of our independent reviewers, the trip assignment has not taken into consideration that people will use Mitchell Road to avoid Euston Road. These two roads already function as a pair.

The toll avoidance effect

The New M5 EIS is clear that toll avoidance will occur. This is consistent with the M4 Widening and M4 East EIS documents, and consistent with Sydney experience with the Cross City Tunnel, the Lane Cove Tunnel and removal of the toll on the M4. Toll avoidance, particularly where traffic is forecast to leave the M5 East and use local roads, is of considerable concern to the City.

The Government's current policy of maintaining free surface alternatives despite huge investment in new roads is not acceptable. Local roads through local residential and business communities must not be expected to take additional traffic that results from toll avoidance. In adopting this policy, the most significant potential benefit of any new road building is lost, that is the opportunity to significantly reduce traffic in local residential and business precincts.

The New M5 EIS recognises that with the introduction of a toll, some drivers using the M5 East will choose alternate routes, as is shown by the large forecast traffic increases on Stoney Creek Road and King Georges Road amongst others. While these roads are not within the boundaries of the City of Sydney, it highlights a broader concern about the merits of the project and its justification in the EIS and *Updated Strategic Business Case*.

One of the core transport objectives of WestConnex is to “*relieve road congestion to improve the speed, reliability and safety of travel in the M5 Motorway corridor, including parallel arterial roads*”. Given future traffic volumes on Stoney Creek Road will rise considerably following delivery of the New M5 project as a result of toll avoidance, **it can be argued that the project does not meet this transport objective.**

The *WestConnex Updated Strategic Business Case* sets out the proposed tolling regime for WestConnex (Chapter 9, p190). **While tolls will be distance-based, they will not be varied according to time of day and therefore will not respond to the actual travel time saved which will vary based on the broader road network conditions.** Simply, travel time saved through use of WestConnex will be greatest at peak times when the road network is relatively congested, despite the EIS attempting to assert the opposite in Chapter 9 and Appendix G. As congestion on the adjacent surface road network reduces through inter and off peak periods, so the actual travel time saved by using WestConnex in comparison to the surface road network will reduce as will the willingness to pay the toll. **The effects of toll avoidance will be greatest during inter and off peak periods, the times when residents typically enjoy relatively reduced traffic levels on local streets.**

This impact is recognised in the EIS (Volume 1B, p9-131):

“It is expected that traffic switching to parallel arterial roads may be partly a result of the introduction of tolls onto the M5 East Motorway. This is likely to occur outside of peak traffic periods to avoid the proposed tolls. This is not expected to have an impact from a traffic perspective in terms of congestion, as there is generally spare capacity across the network in off-peak periods”.

It is of concern that traffic volumes in local streets are likely to increase and because this increase is expected to occur during the relatively uncongested off-peak periods it is also likely vehicle speeds will be relatively high. This detrimental impact on local amenity and safety is not recognised or assessed in the EIS.

Should project approval be forthcoming there must be a requirement placed on the proponent and RMS to reduce local road capacity and access to levels commensurate with the needs of the local community before the New M5 is operational.

In addition to the toll avoidance identified in the New M5 EIS, the reliance placed on tolls and the introduction of tolls on previously un-tolled roads raises concerns that have been supported by University of Sydney research (<http://www.smh.com.au/nsw/sydney-motorists-unwilling-to-pay-for-more-toll-roads-study-20151110-gkv5b3.html>); **that people will reach the limit of their financial capacity to pay tolls**, further resulting in the use of local roads that are not tolled. Neither the *Updated Strategic Business Case* of the New M5 EIS explore the potential social, economic or environmental impacts of substantially reduced willingness to pay tolls in the future.

WestConnex: enabler or disabler?

The assertion that WestConnex will enable the Bays precinct and Parramatta Road revitalisation is tenuous, and **no evidence is provided how this proposal contributes to the realisation of those outcomes.** Rather, the proposal as it stands, with no allocated funding for Stage 3 or any extension, including the Western Harbour Tunnel, further diminishes this assertion.

ATTACHMENT B

The project objectives state that the project will “*cater for diverse travel demands... best met by road infrastructure*” however, there has been **no assessment of whether the needs of western and south-western Sydney are actually best met by road infrastructure.**

Chapter 4: Project development and alternatives

The Strategic Alternatives fail to fully canvas and explore the potential of strategic alternatives in terms of an integrated approach. Each alternative is treated in isolation from the others when in reality a holistic future strategy would encompass elements of each 'alternative'. As stated in the independent SGS Economics and Planning review, *"Strategic Alternatives 2, 3 and 4 present mechanisms which have the potential to reduce demand for road usage. However, these have been scoped in a way which makes it difficult to assess them as being legitimate alternatives to the New M5. Strategic Alternatives which 'bundle' different elements of the alternatives are not presented"* (SGS Economics and Planning, 2016).

Demand management combined with investment in public transport could be particularly effective in reducing peak period commuter road use, freeing up road capacity for delivery and service vehicles. **This improved use of existing road infrastructure by economically important traffic should be fully explored prior to pursuing a major program of road building at a high cost to taxpayers in NSW and across Australia.**

The opportunities to expand rail freight do not appear to be fully considered given the development of the Moorebank Intermodal Terminal and the recently announced Asciano plan to build a \$100 million terminal at St Marys. There is excess rail capacity to move containerised freight to and from Port Botany and the viability of doing so will be enhanced by these new intermodal facilities in the future.

The identified Strategic Alternatives are assessed against the stated project objectives, including, *"Support Sydney's long-term economic growth through improved motorway access and connections..."* (page 4-19). **This objective is specific in its outcome and excludes consideration of non-motorway transport alternatives that may also support Sydney's long-term economic growth.**

The analysis of the alternatives against the stated objectives appears flawed and subjective. For example; investment in public transport and rail freight improvements will relieve road congestion, improving the speed, reliability and safety of travel in the M5 corridor. It will do this through providing alternative options for those passenger and freight trips that can utilise public transport and rail freight, thus reducing competition for valuable road space and freeing up capacity for those trips which need to use the road. This is essentially demand management across modal options. Demand management is considered to meet this particular objective.

It is also unclear why no alternative other than construction of the New M5 meets the objective, *"Optimise user pays contributions to support funding in an affordable and equitable way"*. **Tolls can be introduced on to the existing M5 East, public transport fares can be applied to new rail infrastructure and services.** This can be done in an affordable and equitable manner and avoids considerable Government expense through the more efficient use of road infrastructure and the construction of high capacity rail integrated with a high quality bus network. Moreover, as demonstrated through recent Government announcements, Metro Rail has the capacity to support increased residential and commercial development in a way motorways cannot.

Program governance and assurance

The Sydney Motorway Corporation has followed a process that engages the market early to develop the solution in order to reduce cost uncertainty, and as a result has identified a preferred tenderer. This is a questionable approach in terms of delivering an outcome that is in the best public interest, given that the preferred tenderer now has a significant financial interest in the project proceeding. **This creates a conflict of interest and indicates a level of market and government certainty for the project to proceed.** It also raises significant concerns regarding the treatment of legitimate project scope changes that may be required as an outcome of the community consultation and assessment through the EIS process.

It is difficult to have confidence in the assessment of a project that, through its procurement strategy and announcement of a preferred tenderer, has been implicit that approval from the Department of Planning and Environment will be forthcoming. **The fact that the EIS and all community updates state that construction will begin in mid-2016 indicates that there is no intention to refuse the project, and delivery will proceed.**

The NSW Auditor-General's report to the NSW Government on WestConnex, *WestConnex Assurance to Government* (18 December 2014), raised significant concerns about **embedded deficiencies in the WestConnex program development and the lack of independent assurance.** Independent assurance is critical to the development of a program, especially of this scale, and best practice should be followed. Currently, the program sits in the final stages of Government assurance processes without the actual intervention of those processes taking place.

The Government-approved Gateway Review process is shown below. The intention of this process is to ensure that the Government is given assurance to proceed with its investment at key stages. This process seeks to ensure investment decisions are based on sound and comprehensive information. **A project should not proceed if it cannot clear through each Gate.**

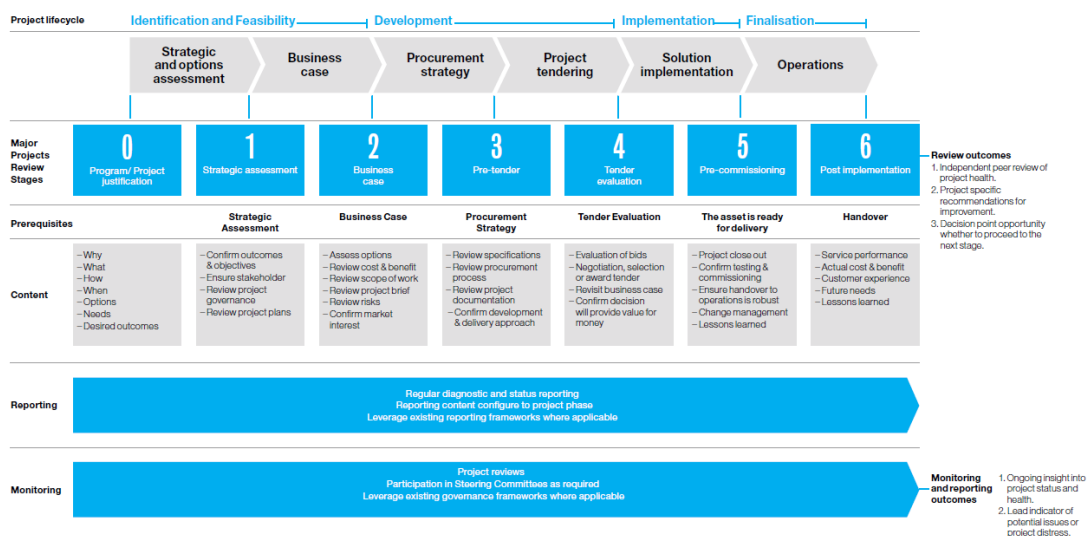
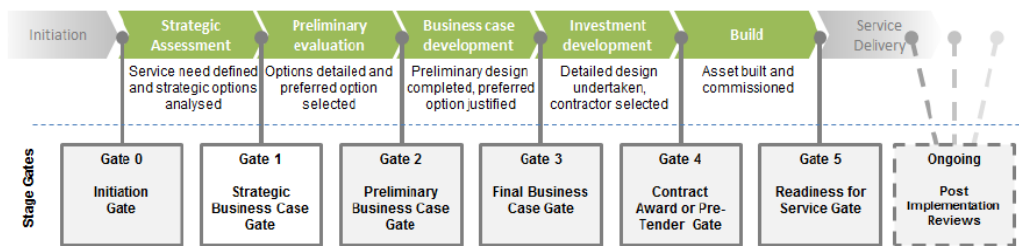


Figure 1 - NSW Government's Major Projects Assurance Framework

The diagram below gives context as to the correct sequence for business case development, as per Transport for NSW's Assurance System.



It should be noted, with concern, that in 2013 the first independent Gateway review of WestConnex was conducted of a Preliminary Business Case. A Preliminary Business Case aligns with Gate 2 of both Transport for NSW's Assurance System, and the Government's own Framework.

In its report, the review panel stated *“due to lack of key information presented for the review, the Gateway Review Panel was not able to form a view on whether the project is a worthwhile and prudent investment (both economically and financially viable) for the NSW Government”* (NSW AO 2013). There was no option to place WestConnex on hold and work carried on to develop a Final Business Case.

In November 2015, the Sydney Motorway Corporation released the *Updated Strategic Business Case* for WestConnex. **It is unclear why the proponent has delivered a Strategic Business Case (Gate 1), despite already having delivered a Preliminary and Final business case**, and the project currently sitting at Gate 4. Based on information in the EIS, the project is ready to proceed to Gate 5 – Build/Pre-Commissioning within six months, despite no detailed design being released for public consideration. **This raises concerns about the strategic merit of the program, and the lack of detailed design would indicate that WestConnex cannot proceed to Gate 3.**

Assessment Methodology

The City's review of the modelling and its assumptions has found some key flaws around the methodology applied, such as;

- The extent of the study area for the traffic model is not sufficient and does not take into account the sub-regional impacts of the project, as required by the SEARs;
- The timing of traffic counts;
- The inclusion/exclusion of major land use changes; and
- The application of Level of Service as the core measure of impact.

The City has commissioned an independent review of the Strategic Alternatives and Socio-economic Impacts by SGS Economics and Planning and a full independent review of the Traffic and Transport components of the New M5 EIS by TTM Consulting. See Appendices A and C, respectively).

Key findings of the TTM independent review are:

- Forecast traffic volumes for the New M5 are very low, and by comparison, are lower than the Cross City Tunnel;

- The tolling regime for WestConnex will result in toll avoidance, impacting local streets;
- The inclusion of uncommitted projects (i.e. Stage 3, Sydney Gateway, Western Harbour Tunnel) in the assessment of the New M5 is questionable;
- The effects of the toll on the existing M5 East need to be considered independently from the New M5 to understand its effect;
- The strategic traffic modelling is inconsistent with excessively high average weekday traffic forecasts;
- The upgrade of Campbell Road/Euston Road results in significant diversions from Princes Highway/Sydney Park Road without the implications being addressed in the EIS and the proposed scope of works;
- The EIS has used high Convert Factors for traffic demand which may distort the results; and
- The assumptions around route choice built into the traffic model are questionable and likely to result in distorted outcomes.

During the exhibition period, Sydney Motorway Corporation held workshops with senior staff from City of Sydney, Marrickville and Botany Bay Councils. At these workshops, staff requested further information on the traffic modelling, including data missing from the EIS pertaining to impacts on the City of Sydney local government area; and select link analyses on roads outside of the very limited EIS Traffic and Transport Study Area, as shown in Figure 1.

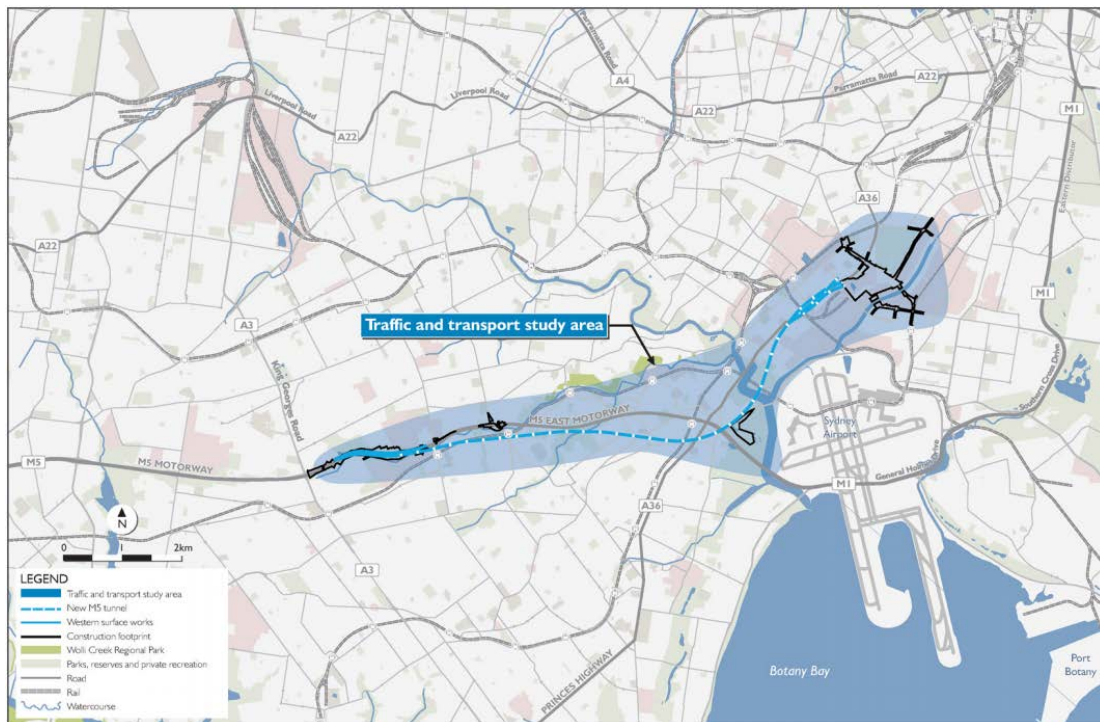


Figure 2 - New M5 EIS - Traffic and Transport study area

The select links were intended to inform the City's understanding of the project's impact on areas such as Erskineville, Alexandria, Green Square and the Ashmore precinct, which were omitted from the EIS. TTM Consulting undertook a robust analysis of the data provided and the following key points can be made:

- A small volume of traffic is using the New M5 which indicates the motorway is not needed and the apparent demand could be met in other less costly ways;
- The New M5 results in changes to and increased capacity on local roads which induces local demand, adding to induced demand resulting from the New M5 itself;

- A very small proportion of vehicles are using the St Peters Interchange to access the Port and Airport, which means most Port / Airport traffic is using the existing M5 East due to its more direct connection and as a result of released capacity through tolling; and
- The impact on local roads is significant, particularly Euston Road, and the dispersion of traffic across the local network will have a significant impact on local streets.

These findings are not consistent with the interpretation of the proponent, who suggests that the New M5 will not impact local streets as the traffic that is induced from the motorway is dispersed onto local streets. **However, the proponent's interpretation does not take into account the induced local demand as a result of local road upgrades associated with the project, nor does it consider the compounding effects of regional land use changes such as Green Square and their cumulative impact on the St Peters Interchange area.**

Development of the WestConnex Road Traffic Model (WRTM) states that it accommodated, "*other transport improvements across the Sydney region*". It would be beneficial to understand what these "improvements" are; particularly **whether the Moorebank Intermodal Freight Terminal, the Western Sydney Airport and Western Sydney Employment Area were included**. Our understanding from conversations with the Sydney Motorway Corporation is that it was included, but that its relevance was discounted due to those projects being built after WestConnex. **This is not an appropriate position given the clear nexus between future land use, travel demand and employment hubs; or that WestConnex has only considered its impact to 2031.**

WRTM **used travel time surveys from December 2012 for calibration** – given travel patterns in December are significantly altered with generally lower-than-average road use due to the holiday period; this is not a preferred or appropriate time period for calibration purposes. It would be beneficial to understand where and when these surveys were conducted.

The WRTM also used toll plaza transaction data for many of the toll roads in Sydney for calibration. It is interesting that data from the Cross City Tunnel (CCT) is excluded from the analysis. **The inclusion of data from a failed motorway project would provide a robust sensitivity analysis when predicting future demand for the WestConnex program, particularly given the data shows traffic volumes on the New M5 are similar to those on the Cross City Tunnel.**

Land use projections for zones surrounding the St Peters Interchange were extracted from the Sydney Strategic Transport Model (STM). It would be beneficial to review the demand matrices for the Southern Employment Lands to make sure they are consistent with the City's projections for the precinct. **If the STM overestimates the development potential of the precinct, the WRTM may comprise unrealistic traffic volumes passing through the St Peters Interchange.**

The EIS states, "*the extent of the modelling covers areas forecast to be impacted by the project and was agreed in advance with Roads and Maritime Services (RMS)*" (section 4.1.3.1). Given the Paramics model built for the St Peters Interchange did not extend north of Sydney Park Road, **it is difficult to have confidence that the modelling can clearly quantify the impact of local roads in St Peters, Alexandria, Erskineville and Newtown.**

The EIS states, “*the base models were submitted for review by RMS*” (section 4.1.3.2). **Other than RMS, the Paramics models for WestConnex need to be reviewed and verified by a third-party independent consultant** to comply with Section 5.8 of the *RMS Traffic Modelling Guidelines* states that “*all models require a peer review or model audit*”.

Alternative 1 – Base case or ‘do nothing’/ ‘do minimum’

There is no detail on the scope of the works that constitute the ‘minor improvements’ such as:

- The nature of the works proposed;
- The location of the works;
- The timeframe or trigger points for undertaking the upgrades;
- How much capacity these works would add to the corridor; and
- There is also no information on the cost of undertaking these improvements.

Alternative 2 – Optimising the performance of existing infrastructure

Alternative 2 also has very limited detail, but more than Alternative 1. Despite this, there are significant gaps that make a comparable assessment of the alternatives obsolete.

Alternative 3 – Investment only in public transport and freight rail improvements

Alternative 3 considers investment in public transport and rail freight. **This alternative option has been poorly considered, although its inclusion is supported.** Yet, the confusing issue here is that consideration of this alternative is not consistent with the objectives of the project itself.

This option does not consider what is possible from the transport network, but rather what exists. **Alternative 3 is not a strategic alternative as it just identifies initiatives already detailed in existing planning documents. No new projects, or changes to timing are identified to address the issues seeking to be solved.** This lacks strategic insight from the government for such a long-term project.

The key rationale in the EIS to dismiss this alternative is that trips from the south-west to the east are dispersed. However, dispersed trips types can be met by non-car modes. As stated earlier, **there is deemed sufficient aggregated demand to create consideration of the New M5 corridor, therefore there is potential to meet this demand through a modern, integrated transport approach.** The government has been developing its transport system to require greater interchange as a means to achieve greater frequency, and there is no reason why this approach could not be taken here to service the demands along the corridor.

It would be better use of a constrained urban environment to make improved use of existing road infrastructure by enhancing priority for more economically productive trips (i.e. freight through tolling out other road users, or having dedicated capacity) and high-demand modes (i.e. public transport). The counter-argument to this approach is likely to be that a significant proportion of trips on the corridor are all-day, business trips that are best met through private car use. However, this is limited by current thinking and does not look to the future or the potential to incentivise businesses' corporate sustainability agendas and incentivise behaviour change through demand management.

The \$16.8 billion currently estimated to fund the WestConnex project (these are strategic, not detailed costs) could deliver significant public transport – both capital and operational. Alternative 3 discusses the existing congestion on the rail and bus networks, yet the funding allocated for WestConnex could deliver new infrastructure for public transport modes, or delivering priority public transport measures. **There is also no consideration in this alternative of what modes could potentially service the demand apart from a motorway.** The level of capital funding that is being allocated to this project could be invested in new rail infrastructure and contribute significantly towards operating costs for many years. Rail is used as an example in this submission as it is the most capital intensive and expensive mode to operate.

Similarly, there is no consideration of what priority measures could be investigated or implemented for freight. It is not feasible to transfer all goods to rail freight, as it is not suitable and the market is unlikely to respond favourably; especially for time-sensitive or perishable goods.

Transporting freight to the Airport and Port is stated as a primary objective of the project, yet the project does not deliver this outcome. Instead, freight is required to join the (already congested) road network at St Peters Interchange to navigate its way to the Airport/Port. There is no evidence in the Environmental Impact Statement to suggest that freight will be the primary user or will obtain the most benefit. The primary users of the New M5 will need to be private car users, accounting for ~90% of traffic, and generating the required toll income to make the project feasible. **The EIS appears to have grossly underestimated the willingness or capacity of Sydneysiders to pay for additional tolls** and the effect that this will have in terms of pushing traffic from motorways onto local roads.

The summary for Alternative 3 discusses active and public transport being viable only in terms of the commute task. This is not correct and is a narrow view. Transport planning is generally built around the commute task as this defines the required assets, however the majority of trips are not for commuting purposes which means networks need to be developed to meet multiple needs. **As work practices change, travel demand is likely to change too. Similarly, the transport network can change work practices**, such as spreading the traditional peak as services reach capacity (both public transport and road transport) which influences mode choice and time of day for travel.

There are opportunities with the introduction of the *Passenger Transport Act* in 2014 to **leverage more flexible and demand-responsive service types within the transport mix to service dispersed origins and destinations to feed into a trunk routes.** Technology is a significant enabler of this type of travel and behaviour. Flexible service planning is not usual in Sydney, but has the ability to maximise utility on existing services and create opportunities for meaningful public transport in western and south-west Sydney.

Alternative 4 – Demand Management

This alternative has been very poorly considered. This alternative also lacks detail about what aspects of demand management have been considered, where they might be implemented, what they might cost or what the impact/outcome of the intervention might be.

Page vii in the EIS Executive Summary states, “*Traffic would either choose to travel at different times of the day, if possible, seek alternative routes or modes to their destinations or choose not to travel at all*”. **Peak spreading, modal shift and working from home are all efficient forms of demand management. They are not disincentives.** The congestion on the existing motorways could be viewed as an opportunity to change Sydney’s travel patterns for the better. Especially if different choices are positioned and made more attractive to potential users.

The literature on demand management tells us that behaviour change needs a catalyst, which is why disruption is often the best time to affect behaviour change. If road capacity is constrained, people will make other choices. The EIS states, “*a network and corridor optimisation approach to manage delay and queuing impacts at critical intersections*” (Executive Summary, px). If this approach can be adopted to manage traffic demand post-WestConnex, then if the project is approved, **it should be a condition of consent to be implemented as part of the detailed design and project delivery.**

Similarly, the Executive Summary also states, “*In the St Peters road network, forecast growth in traffic would cause further congestion, with the network unable to accommodate the future traffic demands*”. Given modelling indicates that 1,000 vehicles during the AM peak-hour are unreleased even with the full WestConnex, Sydney Gateway and the Southern Extension, **it is clear that the future demands estimated in the model will either never materialise or there will be a need for demand management even after investing at least \$16.8 billion in WestConnex.**

Alternative 5 – Construction of the New M5 as part of the WestConnex program of works

On its own, there are concerns about the stated benefits and negative impacts of the New M5. The WestConnex program of works is not funded past Stage 2. This raises significant concerns about the long-term legacy impact of this project, **especially if the remainder of WestConnex is unfunded and not delivered, which is possible.**

It would have been more useful to also understand the impact of the New M5 without the rest of WestConnex, and the legacy this will leave on regional amenity and freight access. This is important from a project integrity point of view given a criteria for assessment of these alternatives was to “*provide for integration with other WestConnex projects while not significantly impacting on the surrounding environment in the interim period*”.

Project Objectives

The project objectives as shown in Table 4-2 are intended to exclude non-motorway alternatives. A modally agnostic view would likely have delivered a more complex but useful and long-lasting solution than a motorway. The process and rationale for choosing these objectives is not explained. The objectives do not appear to be linked to Government's strategic planning goals. **It would be useful to understand the methodology for assessment including weightings (if any) that were applied to the criteria, how it was assessed, and by whom.** It is unlikely and it would be unusual that all these criteria are considered equal. If all criteria are equally weighted, then this is a poor methodology and therefore a poor outcome.

There is no consideration in the project objectives about maintaining Sydney's sense of place, particularly in areas that have significant cultural value such as Newtown.

Section 4.4.1 states that an objective of choosing an interchange location was to *"maximise connectivity with the local road network and nearby areas of urban growth including connections to areas of predicted population growth in inner south-west Sydney, such as Green Square and Mascot"*. If this is the case, then **the traffic assessment methodology is inherently flawed as it omits these areas completely. This also demonstrates that the proponent is aware of the spatial and social relationship between the St Peters area and the urban renewal areas of Green Square and Mascot.**

Similarly, section 4.4.4 gives a rationale as to why Euston Road was chosen, and again, it was to connect to places such as Green Square.

Chapter 5: Project Description

Section 5.1 (WestConnex and the New M5) provides an outline of the WestConnex proposal in its entirety and the current status of the various components of the project. The current status of the Western Harbour Tunnel, Sydney Gateway to Port Botany and Sydney Airport, and the Southern Extension are omitted.

This is an omission, yet the assessment of traffic and transport impacts (Appendix G) assumes these projects are in place by 2031.

Euston Road

Section 5.7.1 discusses the parking arrangements on Euston Road following construction. The documentation states that Euston Road will become a clearway during peak periods. However, this does not take into account a couple of key features; first, that **Euston Road is particularly congested on the weekend**, with the area frequented by shopping tour buses and other vehicles as well as through traffic. Secondly, that there has not been consideration of the impact of the New M5 project on Euston Road and McEvoy Street north of Maddox Street when the road returns to its existing configuration. The modelling in Appendix G shows (Table 108) that **there is unreleased demand of an additional 114% northbound in the AM peak on Euston Road** with full WestConnex in 2031 compared to without WestConnex. This is unacceptable to the City.

Project design

The project description and the diagrams do not adequately state the width of footpaths and cycleways. It is necessary to design adequately for bike and foot traffic as per Austroads requirements. At present, the road infrastructure is provided at above minimum levels, whereas the pedestrian and cycle infrastructure is at minimums or less. **It would be wise for the Government to consider and engage with its own policy to adequately provide for these growing road user groups.**

The Government's cycling policy, *Sydney's Cycling Future*, promises "*bicycles will be incorporated into the delivery of transport projects*" and "*Bicycle facilities will be identified and delivered parallel to major transport corridors*", yet this project has only included bicycle facilities at each end, not along the length of the corridor. **The project should be required to fulfil Government policy to deliver a parallel active transport corridor**, just as previous projects, such as the M7 and the Lane Cove Tunnel, did.

The use of slip lanes at intersections throughout the project is pervasive. The City is not supportive of slip lanes at intersections as they generally encourage traffic to travel through intersections at faster speeds. Slip lanes require pedestrians and bicycle riders to cross the road in at least two crossing movements, which is undesirable and can leave people vulnerable where traffic volumes and/or speeds are high. Slip lanes also increase the land take for upgraded intersections and this is significant at the Campbell Road / Euston Road and the Euston Road / Sydney Park Road intersections where additional areas of Sydney Park are taken for the intersections.

The documentation states that the “*existing on-road cycleway will be retained*”. While this is supported, the description as an “*on-road cycleway*” could imply a shoulder lane or in-lane cycleway; it is a separated cycleway and needs to be described as such.

With the reconfigured Bourke Road/ Gardeners Road intersection, there is no continuity of the separated cycleway with the project design. It is not clear how bike riders are meant to transfer from Bourke Street (south) to Bourke Road (north) without needing to complete a turning movement on Gardeners Road, or move onto the footpath (which is illegal unless the area becomes a shared path); in which case the “on-road” continuity of the cycleway is not maintained. Should the project proceed to detailed design phase, the proponent will need to resolve this matter and maintain a dedicated, separated cycleway along Bourke Street/Road from Mascot to its terminus at Woolloomooloo. **It is recommended that the proponent complete this design in collaboration with the City of Sydney, Botany Bay Council and the Transport cluster’s active transport teams.**

The cycleway along the extension of Campbell Road over the Alexandra Canal must have a safe ramp connection to the cycleway along the eastern side of the canal and have provision for connection to the future cycleway on the western side of the canal.

The diagrams at Figure 5-34 and 5-37 do not match in terms of road configuration, and do not give details regarding intended widths for traffic lanes and the pedestrian and cycling facilities. The proponent must advise which is the correct diagram and the widths of traffic lanes and the walking and cycling facilities and state how the design complies with Austroads. As with road design pedestrian and cycle facilities should be designed for growth and functionality rather than to the minimum requirement.

Table 5-7 indicates that in some locations, the design speed is higher than the signposted speed. No rationale is provided for this. Areas of concern for the City are Bourke Road between Gardeners Road and Campbell Road due to the high volume of bike riders and other vulnerable road user groups, which are likely to increase over time with the ongoing development of Mascot Town Centre.

In section 5.8.6 it is stated that all signage will be clear and unambiguous for motorists. Not all road users are contained within a vehicle, and **road signage must cater for all road users, including pedestrians and bike riders.** Signage will be especially important in helping riders to navigate regional cycling routes, especially as new routes are introduced.

This section also states that directional signage will send traffic heading to the City and Randwick via Euston Road. However, it is not clear what the intended paths of travel are on Euston Road toward the city centre. It should be expected, given desire lines, that city-bound traffic would head along Euston Road/McEvoy Street then north on Wyndham Street or Botany Road. Roads and Maritime Services is already aware of the significant congestion along this route in the AM and PM peaks. **This confirms the City’s concerns that the New M5 is intended to service the city and the east, and inadequate traffic modelling has been done to fully understand the impacts of the New M5.** For traffic heading towards Randwick, the two paths are either via Lachlan Street (which is already congested, particularly on weekends) or O’Dea Avenue via Bourke Road (also significantly congested, particularly at weekends).

There is also a lack of clarity about what other paths of travel the unreleased demand as identified in the traffic model output will take. It is highly likely that this traffic will disperse onto local streets such as Mitchell Road or potentially Bourke Road via Huntley Street.

Chapter 6: Construction work

The proponent will need to work with Councils and the Transport cluster's active transport teams to identify how bike riders will be serviced during construction, particularly along the Bourke Road cycleway.

The City's position is that bicycles are human-powered and more vulnerable road users, therefore they need to retain their existing path of travel during construction. This usually takes the form of dedicating the traffic lane that would otherwise be used by motorised traffic to bike riders. Vehicles that are motorised are to be diverted instead as the impact of a detour is less significant. The City has followed this approach during construction projects for many years.

This cycle route has built strong ridership and use continues to grow, particularly as Mascot Town Centre is built; and this ridership needs to be maintained safely, throughout the construction period.

This submission contains other comments with regard to construction impacts and mitigation measures that either should be investigated or made a condition of consent should approval be granted.

Chapter 7: Consultation

The proponent was required through the SEARs to consult broadly in the development of the EIS, including with City of Sydney.

Council Reference Group

The City was invited, in January 2015, to participate in a Council Reference Group which also included representatives of Marrickville and City of Botany Bay councils. Terms of Reference were agreed by WestConnex Delivery Authority (now Sydney Motorway Corporation [SMC]) and the organisation responsible for delivery on behalf of the proponent) and all three councils. The Terms of Reference included the agreed objectives of the CRG:

- *Seeking early feedback on aspects the St Peters Interchange design.*
- *Seeking input into the transport and urban design challenges and opportunities arising from the project.*
- *Seeking input into the traffic challenges and opportunities arising from the project, including local road changes or upgrades (WDA initiated, within the New M5 EIS study area) and associated early traffic modelling outputs.*
- *Keeping local councils informed throughout the development of the St Peters Interchange project in the lead up to the EIS exhibition, late 2015.*

The Terms of Reference also noted that, “*The CRG will commence meetings in January 2015 and cease late 2015, upon display of the WestConnex New M5 Environmental Impact Statement (EIS)*” and, “*The CRG meetings will be held monthly*”

(St Peters, Alexandria, Mascot Council Reference Group for WestConnex Terms of Reference,

http://www.westconnex.com.au/documents/terms_of_reference_council_reference_group.pdf, accessed 30 December 2015).

It is also noted that the consultation objectives set out in the EIS (Volume 1A, p7-4) include:

- *Ensure the views of the community are taken into account during preparation of the EIS and project design.*
- *Ensure community concerns regarding environmental and community impacts are considered and addressed where possible.*

Given councils are the representatives of the local community with a focus on local issues it would seem reasonable that the CRG process could have been expected to contribute significantly to meeting these objectives.

The City participated in the Council Reference Group in good faith, making senior staff available and contributing considerable time and effort to the consultative process beyond meeting attendance.

The City, along with Marrickville and Botany Bay councils, provided feedback on the St Peters Interchange design, **including the implications of new connections and road widening on the local traffic network** and entered into discussions on how opportunities may be realised to **establish a coherent road hierarchy that would protect local residential and business communities from through traffic.**

Despite this, all opportunities discussed have been excluded from the EIS. Local residents and businesses will not benefit from opportunities to reduce through traffic in local areas and instead will be vulnerable to increasing levels of traffic in the future with the operation of the New M5 and completion of the St Peters Interchange and associated road widening.

CRG meetings were held monthly up to and including June 2015. A further meeting was held in September 2015 at the request of the councils. While detailed traffic discussions did occur intermittently during this hiatus they did not offer a comparable forum for the discussion of broader issues, and ultimately were ineffective given the exclusion of all proposals discussed from the EIS.

Despite an explicit request that a further CRG meeting to include RMS representatives be convened prior to the exhibition of the EIS specifically to resolve the local road network impacts and opportunities, a further meeting was not convened by the SMC.

The consultation report in the EIS broadly outlines topics discussed at meetings with the City and as part of the Council Reference Group. **However, an ongoing frustration of the City is the lack of action of many of these issues, or the inability of Sydney Motorway Corporation to adequately address questions at briefings.**

Should project approval be forthcoming, there must be a requirement placed on the proponent and SMC to maintain an effective and meaningful dialogue with local councils with the aim of reducing local road traffic capacity and vehicle access to levels commensurate with the needs of the local community.

Further, should project approval be forthcoming, the conditions of consent must require the measures as put forward through the CRG, to be included in the scope of the WestConnex works and to be delivered before the New M5 is operational.

Exhibition timeframe

A core issue in terms of consultation is the timeframe given by the Government to respond to this Environmental Impact Statement. **The Government, in deciding to seek submissions over the Christmas/New Year period, has not acted in good faith.**

It is common practice in Government if a proposal (especially of this scale) is put on public exhibition over the holiday period that submissions are made due toward the end of February at the earliest. This enables governance mechanisms such as Council meetings to take their course. **The Government has not allowed Councils and community groups time to consider the full information contained in the documentation,** or for staff at the Sydney Motorway Corporation to respond in a timely manner to requests for further information in order to make a well-informed submissions. This is poor practice from the Government, and a poor engagement strategy.

A key criticism of the Project in many parts of this submission is broadly the 'bare minimum' or compliance approach to conducting the EIS. **There have been many opportunities missed by the proponent in terms of genuinely collaborating with the City and other local Councils to achieve the best outcomes, for people in the local community.**

Chapter 8: Overview of environmental issues

No comments.

Chapter 9: Traffic and Transport

The project documentation has not adequately addressed the Secretary's requirements. The traffic and transport modelling and approach has not appropriately considered:

- Sensitive land uses, future housing, employment lands and public transport needs;
- An assessment of local and regional impacts, including on urban renewal and as a result of toll avoidance;
- Induced traffic and operational implications for public transport; and
- Impacts of on-street parking loss to residents and business.

The EIS has taken a cursory approach to the traffic and transport assessment, with many of the impacts either not considered or dismissed without appropriate analysis or evidence.

The City also considers it unreasonable that the most significant proportion of the documentation is associated with the construction component of the project, with **little consideration of the long-term operational impacts of the project**. This is not acceptable and shows a disregard for affected communities and businesses. This is also concerning as so much of the analysis of other impacts relies on the traffic and transport assessment. The traffic and transport assessment as presented does not provide a sound basis for the EIS.

Chapter 9 and Appendix G in the EIS are muddled and show inconsistent information, particularly for the data output tables (9-7 to 9-11). This is compounded by the general lack of information in the EIS. This has two key implications; first, it prohibits stakeholders and the community from making a full and accurate assessment of the proposal, instead placing reliance on general and unsubstantiated conclusions in the EIS or making assumptions that may be incorrect. Secondly, it demonstrates a lack of rigour in the assessment and this creates valid concern about the level of assurance especially given the magnitude of investment. Regardless, the EIS fails to quantify and therefore assess the impacts of the Project.

Given one of the core transport objectives of WestConnex is to support improved motorway access between Sydney Airport, Port Botany and Western Sydney – essentially already provided by the Eastern Distributor (M1) -M5-M7-M2 Loop – **no analysis is presented that considers the future and potential impact of the Moorebank Intermodal Freight Terminal, the Western Sydney Airport and Western Sydney Employment Area on freight demand** in terms of trip distribution and modal choice; It is expected that all three projects would significantly alter future demand between Western Sydney and both Sydney Airport and Port Botany.

The EIS is not clear about when additional capacity built into the project from the outset will be required, and what the potential impacts will be when this capacity is released. This includes the additional capacity built into Euston Road and the New M5 between St Peters and Arncliffe.

The extension of Campbell Road to Gardeners Road will create an east-west connection between Stanmore Road/Enmore Road and Gardeners Road. The extension does not serve traffic accessing or egressing St Peters Interchange, with all traffic to/from the east using the Gardeners Road connection. The extension of Campbell Road and the creation of an east-west link is not the purpose of WestConnex and should not be included in the project scope. It will lead to additional traffic impacts through the Inner West. This link should be removed from the project or at the very least significantly downgraded reducing local area traffic impacts.

The City must be given the opportunity to review and critically assess the Construction Traffic Management Plan (CTMP) for the St Peters Interchange.

The Executive Summary of the EIS states, “*An operational traffic review would be undertaken to confirm the operational traffic impacts of the project on surrounding arterial roads and major intersections 12 months after the commencement of operation of the project*”. **This review should be extended to include the impact on local roads surrounding the St Peters Interchange**, particularly in the suburbs of St Peters, Alexandria, Erskineville and Newtown; all affected Councils should be involved in the review (the City, Marrickville, Botany) and **any additional treatments required must be fully funded by the NSW Government and implemented no later than 24 months after the commencement of operation of the project.**

While the commitment to review operational impacts is welcomed, the timeframe will allow new driving routes to form, particularly where toll avoidance is a factor. **Impacts can be anticipated and changes must be made at the outset to prevent undesirable behaviours forming and the resultant impacts.** Previous experience, such as the Cross City Tunnel, have shown that it can be difficult to remove road space where drivers consider themselves to be ‘funnelled’ into a toll road.

The City is also concerned that the RMS has fundamentally different objectives to local residential and business communities. The RMS is and will be, focused on the minimisation of vehicle delay and the broad reduction in congestion. The City and local communities are concerned with local amenity, safety for walkers and cyclists and effective and efficient public transport. Guiding principles should be set out by the Department.

Assessment methodology (section 9.1)

The traffic and transport assessment study area does not have sufficient scope around the St Peters Interchange to include the sub-regional impacts of the New M5 proposal. The assessment area does not include the Green Square urban renewal area and other residential suburbs likely to experience increased traffic as a result of the New M5, St Peters Interchange and local road widening.

The project is also likely to impact the recently announced Waterloo Metro urban renewal area (although this forms part of the Central to Eveleigh corridor). Again there is no consideration of cumulative impacts.

The project and modelling also fails to take into account the potential cumulative impacts of the Central to Eveleigh urban renewal led by Urban Growth. Central to Eveleigh proposes a massive intensification of land use near the interchange that will have an obvious effect on the road network that will see additional traffic through the WestConnex project. Failing to assess these impacts could be considered remiss of government.

In section 9.1.2, there is been no consideration of bus loadings, travel times or delays in the data collected. This is despite some of Sydney's worst-performing bus services in terms of on-time running being affected by the Project.

Section 9.2 – Existing environment

The EIS states, on page 9-39:

“High traffic volumes around the St Peters Interchange and local road upgrades generally flow eastbound and northbound towards the Sydney CBD and Sydney Airport/ Port Botany in the AM peak and the opposite direction in the PM peak”.

This statement confirms that the exit of the St Peters Interchange will be used to deliver traffic towards the CBD using Euston Road. During engagement, this has been denied and the EIS has failed to model the impact of this in the documentation. Euston Road and McEvoy Streets contain important linking intersections into the CBD that have not been assessed. These intersections are already struggling to cope with the demand of this growing residential area, as well as significant industrial/logistics/freight land uses in the area.

Section 9.3 – Future impacts

The EIS states that **during construction of the St Peters Interchange, between 617 and 671 parking spaces will be lost.** This loss will mostly affect businesses. The EIS tries to justify this by saying that the businesses along Euston Road have sufficient off-street parking, however, it is unclear whether the proponent has undertaken any consultation with these local businesses to determine the level of hardship (if any) that will be experienced.

With operation of the St Peters Interchange, **there will be a loss of 322 parking spaces permanently.** This is a net sum and does not include the 60 new spaces, of which 24 will be off-street at St Peters primary school and are assumed to be inaccessible to the general public.

Section 8.3 – Operational Performance – St Peters & Surrounds – Without WestConnex

Analysis indicates that the network does not have sufficient capacity to accommodate the forecast demand in the 2021 without WestConnex scenario. **In reality, if the network remained in its current layout, this future demand would never materialise.** People would alter their travel behaviour (e.g. either travel earlier or later, switch transport modes or defer travel altogether) which is the basis of demand management, which was dismissed as an alternative.

Table 76 indicates that the intersection of Campbell and Euston Roads would operate at a Level of Service (LoS) F in the '2031 without WestConnex/' 'do minimum' scenario. Given that without WestConnex, both Euston and Campbell Roads would remain single lane roads providing local access, it is not clear how this intersection reaches capacity; **this has to be an error in the modelling or reporting of results.**

Tables 77, 78 indicate that in the '2031 without WestConnex' scenario, the average travel time between King Street, Newtown and the Sydney Airport Domestic Terminal (a distance of only 4.8 kilometres) in the AM and PM peak-hours is 44:30 mins and 45:00 mins respectively. **These estimates are large and unrealistic, the City does not consider them to be accurate.**

On page 219 the EIS states that without WestConnex there will be, "*longer travel times for rail passengers travelling to and from the St Peters and Mascot train stations by car, due to an increase in traffic volumes, slower travel speeds and increased intersection delays*". **Given on-street parking in the streets surrounding both St Peters and Mascot Rail Stations is restricted and fully occupied, there is no commuter parking and both stations serve a largely 'walk up' catchment, the number of passengers driving to either station to catch the train would be so small to be negligible.** This should not be used as a rationale for the project.

Section 10.3 – Operational Performance – St Peters and Surrounds – With WestConnex

Table 98-108 provides a comparison of the '2031 without WestConnex' scenario and '2031 with full WestConnex', Sydney Gateway and the Southern Extension scenario but excludes the 2031 with New M5 only scenario. **To ensure a robust analysis, the results from the 2031 with New M5 only scenario should also be included to enable a clear comparison of the options.**

The proposed road geometry for Euston Road between Campbell Road and Sydney Park Road comprises three lanes in each direction and a central turning lane for access to properties fronting Euston Road. Given turning movements across three lanes would be difficult, and potentially unsafe; **a road safety audit should be completed on the designs, construction plans and post-implementation** (should the project go ahead). From the City's perspective, **it would be better to remove this central turning lane altogether** and use the spare space for footpath improvements on either side of the corridor or to return parkland to Sydney Park. Access to properties fronting Euston Road can be provided from Burrows Road (for through properties) or left in/left out from Euston Road via Burrows Road.

The EIS notes that under the 2031 with WestConnex scenario, "*there is a significant increase in local trip generation which needs to be accommodated in the network*". **Before proceeding to detailed design, this increase should be quantified and interrogated so the data can be compared with traffic estimates the City has for nearby urban renewal precincts (primarily Ashmore).**

The EIS states, "*Paramics modelling suggests that only about 80 per cent of the traffic demand in the 2031 'with project' scenario could be accommodated in the network*". This statement would indicate to the City that the project will not meet its objectives or worse; **it will provide the Government with the rationale to add new road projects, like the widening of Euston Road and McEvoy Street to six lanes, to resolve future demand.**

Chapter 10: Air quality

High PM10 and PM2.5 levels – Adoption of near-future AAQ standards not considered

This EIS is based on the current Air NEPM standards. In 2012 the Council of Australian Governments (COAG) decided to review the National Ambient Air Quality particle standards and the proposed changes are as mentioned in the below table. The Current standards are in bold.

Table ES3: Options and sub-options – air quality standards

Action	Options	Sub-option ^(a)	Standard ^(b)
Particle standards	PM ₁₀ annual mean	A20PM ₁₀	20 µg/m ³
		A16PM ₁₀	16 µg/m ³
		A12PM ₁₀	12 µg/m ³
	PM ₁₀ 24-hour mean	D50PM ₁₀	50 µg/m ³
		D40PM ₁₀	40 µg/m ³
		D30PM ₁₀	30 µg/m ³
	PM _{2.5} annual mean	A10PM _{2.5}	10 µg/m ³
		A08PM _{2.5}	8 µg/m ³
		A06PM _{2.5}	6 µg/m ³
	PM _{2.5} 24-hour mean	D25PM _{2.5}	25 µg/m ³
		D20PM _{2.5}	20 µg/m ³
		D15PM _{2.5}	15 µg/m ³

- (a) A = annual mean; D=daily mean
 (b) Current standards are shown in bold

Source: <http://www.environment.gov.au/system/files/pages/dfe7ed5d-1eaf-4ff2-bfe7-dbb7ebaf21a9/files/aaq-nepm-draft-variation-impact-statement.pdf>

The charts on p 178 and p196 respectively (Volume 2C), indicate the **PM10 and PM2.5 levels at all receptor locations are very close to the existing Air NEPM standard limits. Both PM10 and PM2.5 levels will very well exceed allowable levels if the new AAQ standards are adopted by the Council of Australian Governments.**

Debatable Zero Portal emission claim

There is no mention of portal emission management in the EIS. This EIS claims “*The assessment has been conducted assuming zero emissions from the tunnel portals*” (Volume 2C, p216, Table 9-34 *Summary of key assumptions and implications for conservatism*), but with estimated increases in traffic along Princes Highway over the next decade, congestion at the portals, especially at peak traffic hours, will most likely form concentrated zones of vehicular exhaust emissions.

Facilities included in the assessment

A number of specific facilities, ‘community receivers’ (schools, child care, aged care, hospitals) and aggregate ‘Residential, workplace and recreational’ (RWR) receivers are assessed. This second category includes a few ‘receivers’ in Sydney Park. However, there is no consideration of individual parks, specifically Sydney Park and the St Peters Interchange in the ‘community receivers’ section. **The combination of different users (including children), forms of activity (physical exercise, farming) in the parkland and resulting exposure which is likely to occur, appear not to have been considered.**

There is no mention of whether the generic air quality standards cover the diversity of use types associated with a multi-functional regional park. While this may not typically be included in a standardised methodology/guidelines for this type of assessment, given the close proximity of the interchange and associated road widening to such a significant open space, its inclusion would be reasonable.

The EIS should include a specific assessment of the impact on different uses and users within the park, noting:

- For most pollutants, the levels resulting from the project are well below the recommended standards – **with the exception of fine particles.**
- The existing community receivers may be able to stand as proxies, but no assessment is given as to whether this method is appropriate for assessing the unique impacts relating to parkland as noted above.

Concerns about air quality limiting the use of the parkland

Providing a clear assessment of the impact of air quality on parkland is important, as the risk of high exposure may act as a disincentive for some people (for example, parents and children) to use the park, or to use it for certain activities (such as intensive physical activity). This would have a negative impact on the parkland’s value and accessibility.

One **possible mitigation measure for this impact may be posting air quality monitoring results in prominent places;** for example, signage on the footbridge or in the park, which show the level of pollutants relative to standards. If pollutant levels are below these standards, as the EIS predicts, this could allay fears of adverse health impacts of using the park.

Alexandria Landfill Site – Landfill Closure Management Plan: Dust and Odour Impact Assessment

A dust and odour assessment has been undertaken in relation to the closure of the landfill site which is contained in Part 8 of the WestConnex Air Quality Assessment report at Appendix H of the EIS.

Odours

Due to their complexity and nature, odours are generally difficult to accurately assess and predict.

The NSW Environment Protection Authority (EPA) have published a technical framework *Assessment and Management of odour from stationary sources in NSW* (November 2006), which provides a policy framework for assessing and managing point and diffuse source activities that emit odour, and offers guidance on dealing with odour impacts.

The *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*, published by the NSW EPA, introduces “ground level odour assessment criteria” which are concerned with controlling odours to ensure offensive odour impacts will be effectively managed (but are not intended to achieve ‘no odour’).

The EPA guidance defines impact assessment criteria for a defined population (sensitive receptors) for complex mixture of odorous air pollutants expressed as odour units (OU). One odour unit is the theoretical minimum concentration that produces an olfactory response or sensation. An odour criterion of less than one OU would theoretically result in no odour impact being experienced. **Receptors that have larger populations, in which there will be a greater range of sensitivities to odour (and a higher number of more sensitive individuals), have an acceptable odour defined as two OU.**

Total source odour emission rates (expressed as odour units per metre cubed) were calculated from the likely odours associated with three main decommissioning activities to be conducted at the landfill site. These included;

- The excavation and disturbance of non-putrescible waste located on the site; and
- Leachate contained in open sequencing batch reactor tanks and odours from the dewatered sludge bin.

Measurements were taken at the tipping face of a landfill which received both putrescible and non-putrescible solid waste and also directly at leachate ponds. Taking into account local meteorology, odour concentrations were then predicted using dispersion modelling (AERMOD).

The results predicted that associated odour concentrations at most of the nearest receptors were below one OU, which is the theoretical level of detection. For all but one of the off-site receptors the acceptable odour criterion of two OU was not predicted to be exceeded. **The report states that there is a chance that some industrial receptors located at the southern boundary may experience levels of up to seven OU, which may cause annoyance.** However, it is stated that the modelling has assumed that large areas of the whole site will be exposed continuously which will not be the case. Covers will be applied to exposed areas on a daily basis as part of the Odour Management Plan, which will significantly reduce impacts, particularly close to the site and the site does not contain any putrescible waste.

Dust

An assessment has been conducted of activities likely to generate dust on the site during the closure and remediation of the site such as; the excavation and exhuming of waste, hauling cut and fill material on unsealed roads and the operation of plant and machinery such as bull dozers and excavators. Relevant criteria for particulates PM10, PM2.5, deposited dust and total suspended particulates have been taken from the NSW EPA *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (August 2005).

Off-site PM concentrations and dust deposition levels due to the landfill closure and remediation activities were predicted using the dispersion model AERMOD which is not one of the models specifically approved by the NSW EPA. The report states that AERMOD is the United States EPA's recommended steady-state plume dispersion model for regulatory purposes, and it is widely used in Australia. Subsequent discussions with the NSW EPA Air Branch confirmed that they had no adverse comments in relation to the use of AERMOD in this application.

Modelling referred to an emissions inventory for the landfill site in 2014 for Total Suspended Particulates (TSP), PM10 and PM2.5 which included an estimation of emissions associated with the dust generating activities likely to be undertaken at the site. These referred to emission factors developed by the US EPA which the report states are considered to be the most reliable, contemporary methods for determining dust generation rates from certain activities. Meteorological data was also obtained from Sydney Airport for 2014.

The model predictions incorporate dust mitigation measures including watering of unsealed haul routes, keeping travel routes moist for bulldozers and graders on-site, and watering of exposed areas that are likely to be prone to wind erosion such as unseeded temporary stockpiles.

The report concludes that predicted levels (24 hour/average and annual average) due to the closure works are low, and even when added to existing concentrations **will remain below the relevant air quality criteria**. It is concluded that it is unlikely that any further dust mitigation measures would be required, other than those referred to in Chapter 9 of the Landfill Closure Management Plan.

Recommendation

A site specific landfill closure Environmental Management Plan should be prepared to manage the excavation of parts of the landfill during construction to address the identified environmental impacts outlined in Chapter 30 – Summary of Environmental Impacts (Table 30-1) which forms part of the New M5 EIS.

The management plan should include, but not be limited to mitigation measures to:

- Contain and treat landfill gas emissions from excavations
- Treat offensive odours produced by leachate and landfill gas
- Contain, extract and treat leachate within excavations
- Protect workers and off-site receptors from exposure to potential biological, chemical and physical hazards encountered during the exhumation of landfill waste.
- Manage asbestos contaminated wastes
- Unexpected finds and hazardous materials procedure

ATTACHMENT B

- Dust and odour management from demolition, excavation and construction activities
- Proactive dust monitoring
- Tracking of material on roads
- Management of stockpiles and earthworks
- Emissions management of construction plant and machinery
- Cumulative impacts from dust generating activities conducted on site
- Community complaints handling, response and management
- Community liaison

Chapter 11: Human health

Methodology

The Human Health Assessment (HHA) includes a number of guidelines it has referred to in its assessment methodology, however some basic steps in those Guidelines appear not to have been followed. For example, the NSW Health Impact Assessment Guidelines (NHIAG) includes a range of steps as follows.

Scoping and screening

This aspect is envisaged as a participatory multi-stakeholders process using multiple methods, however **the EIS's HHA appears to have limited itself to a technical assessment against regulatory standards**. There is no justification as to why this less participatory and narrow approach has been taken, particularly relative to the scale of the proposal.

Importantly, the NHIAG includes an 'equity assessment' as part of this phase, where impacts on various groups are assessed. While the HHA does include a range of population groups (primarily based on age) in the assessment of risk, for example, for particulate pollution; **no other affected groups or uses have been defined. The EIS should also include various groups of users of Sydney Park and types of activities.**

Assessment of impacts

The section, "11.2.2 Assessment of social impacts on health" does not include a systematic assessment of the impacts as the NHIAG suggest. **In many cases simply stating the proposed works without any assessment or a very general statement about what the concerns may be – rather than a systematic assessment against defined criteria.** For example, for traffic impact (p11-33) no description of impact or assessment is provided. There also appears to be no assessment of the potential for altered risk of road accidents as a result of increased traffic on local roads in the City of Sydney. This is of particular importance for children and families, and older people.

Chapter 12: Noise and vibration

The noise report in the EIS assesses that there will be a **considerable environmental noise impact which exceeds the relevant criteria by varying degrees** (low to high exceedances) associated with the Construction and Operational (Road Traffic Noise) aspects of The Project. The Industrial noise impact associated with the project is expected to meet or be below / within the requirements of performance criteria.

Mitigation measures are suggested, but are not binding and this reduces their efficacy. **A metric that binds the proponent and allows meaningful measurement and performance standards should be applied.** For example, rewording: *“If the traffic noise levels are above the predicted levels and above applicable criteria, ~~consideration of additional feasible and reasonable mitigation measures will be undertaken such as...~~”*.

Given the scale of this proposal and the fact that noise is predicted to be substantially above the applicable criteria, **a clearer assessment of the costs and benefits of this mitigation measure need to be provided.**

Construction noise and vibration impacts that exceed EPA metrics associated with the project as reported are summarised as follows:

- **The impact of construction noise is predicted to exceed EPA day, night and sleep disturbance criteria** by a considerable degree. Sleep disturbance thresholds may be under established, further consideration of this is recommended. Ground-borne noise is likely to exceed criteria.
- Vibration associated with the project is summarised as follows:
 - Surface works are to be objective managed to criteria through onsite management and control;
 - Tunnelling works are likely to exceed preferable human response criteria at 163 residents, but comply with maximum recommended criteria at all locations. Typically, vibration would be perceptible for a week; and
 - Blasting is recommended for further higher level consulting assessment and objective test blasting to establish propagation characteristics of the local environment. The assessment indicatively provides that criteria can be achieved.

Operational road traffic noise impacts that exceed EPA metrics associated with the project as reported are summarised as follows:

- **Operational road traffic noise impact is expected breach EPA criteria, by in excess of 5 dB in some instances.** In the City’s Local Government Area, it is recommended that architectural modifications be made to properties to ameliorate noise emissions.

Broad areas of concern

One of the unknowns associated with this project is the greater operational Noise Impact of this project across the wider area north east of the project beyond the assessment area, but within the City of Sydney Local Government Area. For instance, the St Peter’s Interchange will facilitate large volumes of traffic to the southern boundary of the City’s LGA. While some of this traffic may go to the Airport and other destinations, to the road upgrades and connections to the local road network indicates traffic is expected to disperse into the City’s Local Government Area; e.g. Euston Road.

Keeping the above in mind, the report has been completed in accordance with the SEARs. Thus the report is in accordance with both the NSW EPA *Road Noise Policy* and the Roads and Maritime Service's (RMS) *Noise Criteria Guideline*.

Whilst the consultant has assessed the report to the Secretary's requirements, the report demonstrates that existing levels are liable to change with the impact of additional traffic on Euston Road. **The road traffic noise effect of high daily vehicle volumes carried up Euston Park to Sydney Park Road, and then Mitchell Road, and across Huntley Street to Bourke Road would not necessarily be represented by existing noise levels.** The noise impact of this aspect associated with the project is a known unknown which **we recommend be evaluated and dismissed or the impact dealt through reasonable and feasible mitigation treatments to any affected properties.**

Section 3 - Existing Ambient Noise Environment

It is noted that unattended monitoring was conducted at the following reference locations within or adjacent to the City of Sydney's LGA, being:

- NL1 – 400 Sydney Park Road, Alexandria,
- NL2 – 108 Campbell Road, St Peters,
- NL3 – 18 Campbell Road, St Peters, and
- NL4 – 506-518 Gardeners Road, Alexandria.

The results of unattended monitoring are presented in *Table 13* of The Report, we note the existing high ambient LAeq period levels of up to 69 dB.

Existing ambient road traffic noise levels at the above locations range from LAeq, 15 Hour 64 to 68 dB during the day period and LAeq 9 hour 58 to 64 in the night period respectfully, **at or above relevant EPA noise criteria prior to commencement of the project.**

Section 4 - Assessment Criteria

Construction noise management levels

Construction noise management levels have been determined in accordance with NSW EPA Policy on the basis of the existing ambient noise levels outlined above to range from 44 to 67 dB LAeq pending day, evening and night time period and location.

Given the noise monitoring is by the roadside which may unduly influence road traffic noise levels, **it will be important when verifying noise levels that spot background checks are completed to vet that the noise management levels are representative of the receiver** as they may not account for barrier shielding which may permit lower background noise levels.

Offices and retail outlets noise allowances given are 70 dB(A) L_{Aeq} 15 minute. In the City's view, though these noise levels reflect Section 4.1.3 of the NSW EPA *Interim Construction Noise Guideline*, **offices environments are typically more sensitive to noise than this degree of amenity affords.**

Sleep disturbance

External criteria for awakenings are derived from via the consultant assumed flat loss of 10dB will be realised through noise passing from outside to inside a sleeping room through an open window.

To give some background on this, we understand that Australian noise consultants paid some reference to the original World Health Organisation *Community Noise Guidelines* in determining a rule of thumb for façade noise reduction through a façade. Specifically, **Section 4.3.1 – Dwellings**, provides the following advice, relevant aspect underlined for emphasis:

At night, sound pressure levels at the outside façades of the living spaces should not exceed 45 dB LAeq and 60 dB LMax, so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB.

In applying a reduction to account for façade noise shielding, we are aware it is best practice in to allow for a 10 decibel reduction through a partly open window. We empirically understand that the 15 decibel reduction was not determined on the basis of Australian conditions, and that it is normal industry practice by Australian consultants to assume 10 decibels as is the case with the Report.

However it must be kept in mind that this is for a partly open window. Notwithstanding whatever uptake of reverse cycle A/C systems has occurred within the local population, it has historically been common place in Sydney for buildings to be built with natural ventilation in mind. Within Sydney's temperate climate, a partly open window may not suffice for the majority of people. Thus, given the criteria is based on 10 dB year round, **the threshold may under protect residents' health from a sleep disturbance perspective in the Spring and Summer months.**

- **We advise a stricter interpretation** of *Section 5.4 Sleep Disturbance* of the NSW EPA *Road Noise Policy* be used which stipulates maximum internal L_{night}, noise levels of 50 to 55 dB max be achieved. It is noted that: The Policy does not provide for a methodology to reduce external noise levels to inside. If this is to be acceptable to the reviewer we recommend this may only reflect winter and autumn conditions where people are likely to have windows partly open or closed.
- The sleep disturbance assessment methodology prescribed by the *Road Noise Policy* is recommended in the other EPA Noise Policy / Guideline documentation.

We ask that this be more thoroughly reviewed and further consideration be given to an engineering justification of the position of a 10 dB reduction as above in all cases at all times or that the thresholds are revised.

Section 5 - Construction Noise & Vibration Assessment

The computational modelling of construction noise impacts only takes into account neutral weather conditions. Over medium to long distances, weather conditions can influence how noise is yielded at a location, i.e. amplify, attenuate or have neutral affect. Typically, stable night atmospheric weather conditions are most cohesive towards noise propagation, with Sydney experiencing in my view at least some amplification. The Report has modelled the operational noise impact this way, and it is recommended that, given the construction period; the proponent should use the model to predict the real world noise impact.

For the Tunnelling Operation Overview – Ground borne noise, the proponent must:

- Provide size and type and number of road headers considered in the noise, e.g. Drum rotor. Smaller units than those used in the predictions available would lessen impacts noting evening and night ground borne noise criteria predictions exceed criteria.
- Provide the actual degree of noise criteria exceedances. Given these are to occur in the evening and night period, the magnitude of the predictions must be presented and dissected in greater detail in the public interest.

It is recommended that test blasts be conducted to **determine real objective noise and vibration impacts** due to variability.

Section 6 – Operational (Road Traffic) Noise Assessment

Study Area Limitations

The report notes that the study is limited to 600m from the furthest point of any road affected by “the works” associated with the project. No analytical consideration was found in the report of the environment effect of additional traffic brought to the parts of the following roads outside the study area:

- Euston Road;
- McEvoy Street;
- Bourke Road;
- Botany Road;
- O’Riordan Street;
- Gardeners Road;
- Sydney Park Road;
- Mitchell Road; and
- Fountain Street.

Under relevant aspects of the EPA criteria, this was however done for parts of Euston Road, Campbell Road /Street that were affected by project works to a 600m maximum radius from the St Peters Interchange.

Maximum operational noise level assessment

With further reference to **Figure 4**, page 163 and **Table 95**, the report presents an average maximum noise level of 97 dB following implementation of The Project with up to 126 events with causing noise impact with a range of 65 to 126.

Though the report provides that the logger was positioned only 6m from the road which has contributed to the magnitude of the exceedances. It is suggested that if the logger was to be moved back, and that the vehicle causing the event is to be considered as point source, there is only a 6dB loss given per doubling of distance. That is, moving the logger back 12m or even 24m from the road lane would only reduce the magnitude of exceedance reported to approximately 6 to 12 dB considering all other assumptions and contributing factors remain the same. It is further considered that in an urban environment, achieving bulging façade setback distances of greater than 6m from a road is not always achievable, the reported results may be more realistic an interpretation than that afforded in the report.

The City is in possession of independently obtained road traffic noise monitoring data from Gardeners Road during the year 2013, of which noise emissions affect both residents of the City of Sydney and Botany Local Government Areas. The report associated with this data provides that on average, approximately 1750 noise levels exceed the EPA sleep disturbance screening criteria, up to 104 dB but ranging from 53 to 86 dB in magnitude occur during a given night time period.

As traffic flow conditions are not expected to have meaningfully declined from the year 2013 to present, **the City recommends the study area to be expanded to meaningfully assess the impact on the existing road network that additional traffic flow will bring.**

Chapter 13: Land use and property

Chapter 13 of the EIS describes the existing and proposed land uses on the corridor, and the impacts of property acquisition.

Around the St Peters Interchange, a number of properties are being acquired along Campbell Street to enable the widening of that street from two lanes to six lanes. These acquisitions include some residential buildings and buildings with light industrial uses. A number of streets and laneways are also being permanently closed.

The project will permanently utilise a portion of the eastern edge of Sydney Park for its full length. This land is subject to an existing road reservation, however **implementing it as a roadway will result in a reduction in parkland and the removal of mature trees.**

Recently, the City has received applications for permanent land acquisitions for the construction compound at Sydney Park. This property is marked for temporary acquisition on Figure 13-9. **The City will not release this parcel of land permanently. Prior to the exhibition of the EIS, SMC gave the City a clear and explicit commitment that, other than the strip of land along Euston Road, there would be no net loss of land from Sydney Park.**

If the project is approved the proponent must be required to make good on this undertaking, minimising the impact on the parklands. The City is of the view that any attempt to offset impacts on Sydney Park through the creation of additional open space at St Peters Interchange is unacceptable. The Interchange will not provide equivalent open space.

A permanent acquisition request has also been lodged for lands along the Alexandra Canal for the purpose of constructing the Campbell Road bridge. These lands were acquired by the City for the purpose of building the Alexandra Canal cycleway and which is partially constructed. This cycle corridor must be preserved, and the City will not release this land permanently. **The City will consider arrangements to provide access to the land to enable the bridge to be constructed and maintained and the cycleway to be built.** It is noted that the Campbell Road extension and bridge does not serve WestConnex traffic or provide access/egress to the St Peters Interchange and as such should not be included in the project scope. If it is retained it should be significantly reduced in scale to accommodate local traffic movements only, reducing the necessary land take.

The City has significant concerns for the amenity of residents in the retained properties on Campbell Road. These properties will be adjacent to a six lane arterial road, a major motorway interchange and will be overlooked by a pedestrian and cycle overpass. **There will be significant amenity, noise and air quality impacts on these properties and their residents.** These properties will be surrounded by construction on three frontages for a period of around two years.

The widening of Euston Road north of Sydney Park Road using an existing road reservation, is likely to result in the widening of Euston Road through to McEvoy Street. This is likely to have a detrimental impact on the growing suburbs of Alexandria, Erskineville and Waterloo. This will exacerbate as the land use changes resulting from Waterloo Metro come on board. **This is not consistent with the intended renewal of these areas.**

Chapter 14: Visual impacts and urban design

Aspects of the proposed New M5 discussed here are:

- The urban and landscape design within the new five way motorway intersection at St Peters;
- Urban design works required in surrounding streets due to increased traffic induced by the New M5 and anticipated further WestConnex sub-projects;
- Open Space provision;
- Safety;
- Works on surrounding streets;
- Functionality and design of proposed cycle and pedestrian infrastructure; and
- Visual impacts on Sydney Park.

The urban design response is generalised and should be read in conjunction with other parts of this submission, in particular, those parts that deal with landscape, ecology, heritage, active transport and traffic.

Opportunity cost of St Peters Interchange

This intersection occupies approximately 27 hectares of land. **This represents an enormous opportunity cost to the City's productivity.**

At similar densities to those achieved at Green Square Town Centre, this would accommodate more than 13,000 people and workplaces for a similar number of jobs. If the density proposed by UrbanGrowth at Waterloo were used as a comparator, this would be more than twice the population and less provision for jobs.

It could also represent another Sydney Park providing much needed recreation space for nearby residents. The open space to be created around the interchange is not considered to be comparable to Sydney Park and the potential of open space not blighted by major road infrastructure.

We note that these opportunity costs are not accounted for in the business case for WestConnex.

Given these lost opportunities, it is important that if the project were to go ahead, the space made available around the intersection is used to its maximum potential.

The primary urban design task is to maximise the usable area around the intersection.

Deciding the best use for the new park areas

The City of Sydney manages a large park and recreation system and continues to create new parks and indoor recreation facilities in existing and new growth areas. It has the skills in creating and maintaining parks and facilities and understands community needs for parks and facilities and **it is likely that much of the accessible new parkland and facilities will be best managed by the City of Sydney.**

The use of land left over by the intersection works must be designed to positively contribute to the City's open space and sports facilities network. **To ensure the best outcome for these spaces, it is strongly recommended that a Working Group consisting of Sydney Motorway Corporation, City of Sydney and Marrickville Council be established to oversee the design and implementation of the area around the intersection.**

In order to ascertain the most appropriate use of the new open spaces, a detailed air quality study should be undertaken to determine the human health impacts of a motorway through parkland.

In the urban design consultation session with WestConnex and Botany, Marrickville and the City of Sydney councils it was discussed that currently, space for formal active recreation within the City is undersupplied, and subject to confirmation of suitable air quality and noise impacts; any new large areas of accessible, level open space could be used for sports fields or ball courts, and associated buildings (toilet blocks, kiosks, administration building).

There are no regulated air pollution standards that the City is aware of for construction of sports facilities close to major highways and motorway interchanges. **Various studies conclude that sports facilities should not be located any closer than 200m and ideally 500m from busy roads, especially highways with over 50,000 vehicles a day.**

Close proximity of sports facilities to traffic tunnels/highways impacts young athletes in particular because their lungs are still maturing and their immune system is still in the development stage.

The results from air quality monitoring in the WestConnex EIS indicate that the current pollution levels are close to the permissible limit of the existing Air NEPM standards, and will most likely exceed this with increase in vehicular traffic in the future decades.

Depending on the distance of the sports facility from an interchange/highway, a decision needs to be taken regarding the type and duration of the sport, taking into consideration that higher the rate of inhalation during athletic activity, more pollutants settle into the respiratory system. **Given both Campbell Road and Euston Road are predicted to reach and exceed these thresholds; the ability to supply open space playing fields is unlikely.**

The City of Sydney also requires indoor recreation courts and may face a shortfall in these facilities during the implementation period of this project. Large indoor recreation facilities are difficult to locate. The land around the intersection could potentially be used for this purpose. **It is likely that indoor recreation facility with up to 16 multipurpose courts could be positioned on this land.**

If air quality does not meet safe standards once the motorway is fully operational, accessible open space should be given over to biodiverse bushland and habitat, in support of the City's Urban Ecology Strategic Action Plan, and urban canopy targets defined by the Greening Sydney Plan. A minimum of 50% canopy coverage should be achieved at 10 years after completion, in all areas not covered by buildings.

Motorway Operations and Canal Road complexes

The design and siting of the buildings aims to minimise their presence through setbacks and landscaping. In suburban areas of Sydney this may be an appropriate response. In inner Sydney this is out of context and extraneous. **Buildings should be located within the interchange site in such a way that functional, contiguous areas of accessible open space are maximised.**

To fit the urban context and to maximise usable landscape area, **the two building complexes should be consolidated** to more closely respond to the Secretary's Environmental Assessment Requirements, "*Identification of opportunities to utilise surplus or residual land, and utilise key structures (such as stacks) for multiple uses i.e. integration with other structures*".

The most appropriate placement of the combined building would be on the Princes Highway and above the New M5 tunnel portal. The buildings should address the highway with minimal setback and appropriate height. This aligns with the Roads and Maritime Services (RMS) *Beyond the Pavement* guideline, particularly section 3.2.5 - Design road boundaries in response to local character.

The design of the building should **incorporate the conserved 'Dynamo' building.** This aligns with the RMS *Beyond the Pavement* guideline, section 3.6.2 - Adaptively re-use heritage infrastructure in projects.

This location is also the closest place to a rail station, with Sydenham Station approximately one kilometre (about a 15 minute) walk away, **providing public transport access for employees and visitors to these buildings.** This may reduce the need for or amount of car-parking on site.

The proposed landscape in this area fronting the Princes Highway is inappropriate in character. The noise and air pollution, and its isolation from residential areas render it unsuitable for recreational use. Open space in this location does not fit with the existing or desired future character of the area. The Princes Highway has continuous frontage commercial uses with zero setback in this area. This will continue to be the desired character into the future. **The proposed motorway buildings would be complimentary in this part of the highway, if built continuously to the street alignment with concealed car parking.**

Relocation of Motorway operations from Campbell Street creates additional usable open space on the corner of Burrows and Campbell Roads which could be put to better use as an indoor recreation facility.

Future M4-M5 Link facilities

The built form for the future M4-M5 Link facilities should be a cut and cover structure over an extended portal like the Canal Road Complex rather than be placed within the open space area.

This would release a significant amount of land for purposes that are useful to the community, such as an indoor recreation centre. This is particularly important given the lack of these in the City of Sydney and Marrickville local government areas. **The availability of this land provides an enormous opportunity, and also provides opportunities to integrate sustainable water management features that have otherwise not been considered.**

Landform

It is unclear how the landform will work on the site without a contour plan. The overshadowing studies in the Landscape and Visual Assessment show a 3D model with shadows that indicates proposed landform. However, this is not clearly linked with some of the other information. For example, a building within the northern open space is missing and some batters seem much steeper than indicated on the plans.

Requests for a CAD plan were not forthcoming during the EIS exhibition period to enable the City to undertake a robust assessment of these factors.

Edges

Edges to open spaces should be formed to balance:

- Provision of sight lines into publicly accessible spaces;
- Minimise views of road infrastructure; and
- Manage noise

Safety

The proposed arrangement of the interchange site includes many hidden spaces than may attract anti-social behaviour and/or become attractive places for crime.

Safety in publicly accessible areas must be supported by open sight lines from public roads. Most if not all of any publicly accessible open space areas must be visible from a public road. All publicly accessible open spaces should be well surveyed from adjoining buildings or streets.

There are a number of places of concern, including:

- Hidden spaces between large, raised mounds and the roadways;
- Undercroft spaces resulting from elevated roadways
- Immediately north 'behind' the deluge tanks;
- Immediately south of the Gardeners road bridge connection; and
- The large strip of land west of the motorway and east 'behind' a group of industrial buildings that face the Princes Highway.

Further work, including a CPTED report, should be completed as part of the EIS process. This may require reconfiguring of these areas, the introduction of new uses, restriction of public access or additional land purchase.

Program of works - open space

The documentation shows that the largest portion of new public open space, to the south of Campbell Road, is not a part of this application and will be deferred to Stage 3. While its use as a construction yard for Stage 3 is justified, there is not sufficient certainty around the timing of Stage 3. This is a key concern, as **the area may remain unused and residual for some time if Stage 3 is delayed – representing a significant opportunity cost for open space, recreational and community space.**

Project documentation which has been used as the basis for public consultation (New M5 St Peters Interchange – Community Update (p5)) shows that all this area will be dedicated for public open space (with a small portion being used as an exhaust stack). A rough measurement of this deferred area (as per on p81) shows that it is 3.5-4 hectares, however the 'New M5 - Project Overview' (p10) notes that the area to be dedicated to parkland is only 2.4 hectares. More detail is required on the size and timings of the use of this section of the interchange area, and if possible bringing forward its use as parkland or temporary community accessible space until Stage 3 commences. **Following stage 3 this area should be used for an indoor recreation centre.**

Works in surrounding streets

On the streets surrounding the motorway, the additional traffic induced by WestConnex will add to congestion, cause noise and air pollution, and decrease pedestrian comfort and safety.

Noise and air pollution are population health risks. Studies have shown that people living near noise caused by busy roads have increased incidence of cardio-vascular disease and lower life expectancy. **The presence of busy roads discourages development and lowers development yield.** In addition further road works, for example the widening of McEvoy Street, are considered to be brought forward. These factors undermine the productivity of the area or add to infrastructure costs diverting funds from other areas of need. **Taken together these are significant costs that have not been considered as part of this EIS (in the socio-economic section), or the Updated Strategic Business Case.**

The works in the surrounding streets required as part of WestConnex are various. Concise comments follow in relation to individual elements.

Campbell Road pedestrian and cycle bridge to Sydney Park

It is appreciated that this cycleway is intended to provide a fully separated path connecting Sydney Park to the Bourke Road cycleway and Mascot Town Centre. However, an elevated shared facility on a regional cycle route may not be the optimal design.

As stated in the EIS: **“At approximately 540m, the bridge would become one of the longest pedestrian bridges in NSW”.** (Appendix L (Urban Design Report) p104)

The bridge would be just 4m wide between the 'integrated pedestrian handrails and throw screen...' the bridge will allow for a 1.5m footpath and 2.5m separated bi-directional cycleway, not allowing for clearances to vertical structures (hand rails, throw screens) or a separator between cyclists and pedestrians. **There is no indication in the EIS text or accompanying images of the bridge, that any shade, weather protection, rest areas, seating or intermediate access/egress will be provided.**

A 4m wide separated pedestrian and cycle facility does not meet the requirements in *Austrroads: Cycling Aspects of Austrroads Guides (2011)* which indicates a separated two-way path should not be less than 4.5m in width (*Austrroads: Cycling Aspects of Austrroads Guides (2011)* Table 7.7, p89). The document also states: “*It is important for safe operation that adequate clearance is provided between the cyclist operating spaces and potential hazards beside paths...*” The City of Sydney considers there is a need to provide additional clearance adjacent to vertical structures such as pedestrian handrails and throw screens, and passing pedestrians, including a separator between the pedestrian and cycle paths.

A pedestrian path of just 1.5m width does not allow two wheelchairs or a wheelchair and a double pushchair to pass comfortably. Where pedestrian volumes are expected to be high, Austrroads recommends a footpath width of at least 2.4m (*Austrroads Part 13 Pedestrians*, Table 2.1, p18). If the proponent considers the bridge design to meet the prevailing Australian requirements then references should be provided.

The bridge should include wider areas to allow for resting, including seating and weather protection. Given the length of the bridge and personal safety issues, consideration should be given the inclusion of intermediate access/egress points.

In discussions, the WestConnex design team has indicated that there is an intent to provide a regional cycle route catering for experienced longer distance recreational riders and commuters. There appears to have been little consideration of how these groups will interact with people walking or biking between the high density residential development at Mascot Town Centre and Sydney Park. **It is unclear how these various user groups will be able to use the narrow paths safely, even in the short term. This will impact the attractiveness of the bridge to users and undermine its purpose.** There is no consideration as to how the bridge, apparently built to minimum standards, will cater for future growth as Sydney’s population increases by a further 1.6 million people.

Regional cycle routes enjoy strong patronage in the morning and afternoon peaks, with commuter riders often travelling at speed. **This type of functionality for bike riders needs to be designed in, as a road design would for vehicle drivers and their functional needs (such as clearways in the peaks).**

The bridge structure and associated access/egress paths must be designed to CPTED (Crime Prevention through Environmental Design) principles. **At over 500m long the City has significant concerns for personal safety of bridge users.** It is also unclear how emergency services would be able to access the bridge deck in the event of an incident or accident.

The EIS does not address issues of future ownership, maintenance and management of the bridge. For example, given the span and width, there appears to be no consideration of cleaning and maintaining the bridge deck.

Should the project be approved, requirements should be placed on the proponent to address all concerns prior to further acceptance of bridge design and commencement of construction.

As designed, the bridge will not encourage use and **it is likely a large proportion of cyclists and pedestrians will look to walk/ride at grade**. If the bridge is retained full provision for pedestrians and cyclists must be made at grade including separated cycle paths, pedestrian and cycle crossings of all arms at intersections with the provision of adequate crossing time and the ability to cross each arm in one movements.

The City considers the provision of the grade separated bridge to be a poor solution which has not been adequately thought through even at the concept design level.

Options for better outcomes may be:

- **Provide a separated at-grade cycleway on the northern side of Campbell Road** (connecting with the already proposed facility alongside Campbell Street), with footpaths on both sides of the Campbell Road/Street corridor; or
- Sink the roadway so that cycle and pedestrian facilities can be separated and maintained at the existing elevation with a land bridge linking the north and south sides of Campbell Road and Sydney Park; or
- Raise the sloping grassed open space area to the north of the interchange to the same height at the proposed bridge structure (also creating a useable playing field space); or
- A combination of the above.

Any options that have an interface with intersections are contingent on the ability to provide appropriate and adequate traffic control signal cycle and green time, and crossings in one movement.

Regional cycle routes should be designed as separated to enable their functionality. For safety purposes, they should be separated on highly trafficked roads. A shared facility designed to minimum widths is not the appropriate design or starting point. **The design should be revisited prior to any approvals in collaboration with the Transport cluster's active transport teams, Marrickville Council, Botany Bay Council and the City of Sydney.**

The bridge crossing between the St Peters Interchange and Sydney Park has a dramatic design and will link Sydney Park to new parkland to the south for pedestrians and bike riders. However it is clear that there are multiple conflict points that require resolution and ultimately the separation/combination of cyclists and pedestrians maybe problematic for reasons stated above. This will need to be resolved.

A better solution for this crossing would be a land bridge. This would provide a better and safer connection for all users. Another alternative would be to provide an at-grade signalised crossing. This would avoid profligacy and provide a reasonable level of service and significantly, reduce the project's requirement for temporary use and permanent acquisition of Sydney Park land in this location, allowing both parkland and existing trees to be retained. A landmark could be created through public art or the function of the place as a regional sports facility.

Pedestrian and cycle paths generally

The EIS does not provide path widths and/or references to Austroads (or similar) standards applied in determining these widths. The EIS should be revised to include this information.

It appears that all pedestrian and cycle paths have been sized to minimum standards. This does not necessarily respond to expected levels of use or recognise future growth in use. All vehicle lane widths are designed to exceed minimum standards and indeed the New M5, as part of WestConnex, is apparently required to respond to population growth. A similar approach must be taken to the design and provision of pedestrian and cycle infrastructure.

Pedestrian comfort should be considered in line with a pedestrian comfort tool like Transport for London's Pedestrian Comfort Guidance appropriately adjusted for Australian conditions. **The path widths should allow clearance on each side for obstructions as poles and the like are commonplace in verges and near paths, in line with Australian design standards.** Separated cycle facilities should be provided where the functionality is provided, and appropriate connectivity between cycle routes at other times. The City of Sydney's *Street Design Manual* provides guidance for these elements and should be a reference document for the project.

Streets beyond the motorway

New street works including Euston Road, Campbell Road, Sydney Park Road have been designed with higher traffic speeds and wider lanes than required. There is no rationale given for these choices. These should be revised to a 50 km/hr design speed. As discussed above, vehicle speed is a major determinant in injury severity in the incident of a collision. Speed limits are an important contributor to road safety and must be self-enforcing through roadway design as far as is possible.

Reductions in lane widths will reduce the land take for these roads which will reduce pedestrian crossing distances (with associated benefits in reducing vehicle delay at intersections) and decrease the loss of area to Sydney Park. This aligns with the RMS *Beyond the Pavement* guideline section 3.2.1 - *Keep the road footprint to the minimum possible to achieve a good design outcome.*

Intersections beyond the motorway

In a similar way the intersections beyond the motorway appear to be designed to a higher speed design than is preferred. **Consideration of all users is required at all intersections, including pedestrians, bike riders and vehicle drivers.** This would ensure that pedestrian crossing can be undertaken in a single motion, not three; and, slip lanes would be eliminated where they are not essential.

Campbell Road Bridge

Differing versions of the Campbell Road Bridge (over the Alexandra Canal) are shown in the EIS. This connection does not seem to be required by WestConnex as its function for WestConnex is duplicated further south with a second new bridge across Alexandra Canal and directly connecting to Gardeners Road.

The Campbell Road Bridge should be removed from the project. Further, access to the proposed Campbell Road Bridge (eastbound) from the St Peters Interchange is prohibited, with no right turn allowed. **This indicates that the purpose of the Campbell Road Bridge is to create an east-west connection from the suburbs of Stanmore, Enmore and Petersham through to the Port/Airport,** or to enhance resilience or capacity in the RMS network; or potentially all of these combined.

If the bridge is removed, then the proponent will need to resolve the issue of an active transport crossing over the Alexandra Canal to link into the regional cycleway network.

If the bridge remains and the elevated cycleway is reconsidered, a separated cycleway should be integrated with the bridge, preferably on the north side to provide an easier connection to the Bourke Road cycleway, Sydney Park and residential land uses. Pedestrian footpaths should be provided on both sides.

If retained, the bridge must include adequate clearance, horizontally and vertically, over the proposed Alexandra Canal shared paths (both east and west sides of the canal). The bridge paths must also provide (included as part of the project) direct connections to the Alexandra Canal path on the eastern side and allow for future connections on the western side.

King Street Gateway

WestConnex project proponents have made clear public statements that there is no intention to increase traffic or extend clearway hours through King Street. **The City believes the only way to ensure this commitment is guaranteed is to permanently remove capacity from King Street through intersection redesign and physical measures limiting the extent to which kerbside lanes can be used for through traffic in the future.**

It is necessary to include the redesign of the intersection of King Street and Sydney Park Road and **implement the intersection changes as an integral part of the New M5 project.** Not doing so risks increasing congestion in King Street and would not be in line with Ministerial public statements in relation to this issue.

Chapter 15: Social and economic

Study area issues

An independent assessment of the EIS by SGS Economics and Planning has stated that although the Social and Economic study area complies with the SEARs, yet **“fails to account for the city-shaping impact of WestConnex Stage 2”**. It is also not feasible to separate each element from the broader WestConnex, as the projects are interdependent. SGS states that major infrastructure project such as WestConnex, *“can, quite literally, re-sculpt the pattern of metropolitan development...as the resulting shifts in accessibility change the location choices of firms and households setting in place a new geography of land values”*.

The review goes further to say, *“major transport investments are powerful and, perhaps, the pre-eminent policy lever, for determining metropolitan structure”*. With regard to this comment, WestConnex or any other major investment needs to support land use and the broad policy objectives of Government. It remains unclear what role WestConnex will have in achieving these objectives.

Another issue with the study area is that it is not consistent with the traffic and transport study area. The traffic and transport study informs all other aspects of the impact assessment for this project. More detail can be found in Appendix A.

Impacts on different groups in the community

The EIS gives no consideration of different groups within the community, and how they would be impacted differently. **This is a standard matter for consideration in a social impact assessment should be included in the EIS.**

Social Impacts of increased traffic on local roads

As the SGS report notes, **the impact of increased traffic on local roads in the City of Sydney has not been adequately considered**. There is generic discussion of the impacts of increased traffic from the project as a whole, and discussion of the impacts on directly adjacent roads that are part of the project. However, **there is no assessment of the social and economic impacts on the local road network in the City of Sydney**. This includes the reduced accessibility within and between precincts such as Alexandria, Green Square, Newtown, Beaconsfield, Rosebery, and between these areas and the CBD. There are also **likely to be negative impacts on accessibility between the southern industrial area and the CBD**. This may have a negative impact on CBD retail which rely on just-in-time delivery.

The SGS report also makes an important point that WestConnex does not address congestion in King Street, Newtown. Although the traffic modelling shows that the impact of the New M5 and WestConnex on King Street is not severe, given it already functions at capacity in the peak; WestConnex will not improve its function, either.

See Appendix A and C for more information.

Impact on Sydney Park and City Farm

The development of the St Peters Interchange will have impacts on Sydney Park which is a regional attractor. Apart from the land loss that is discussed in comments on Chapter 13, another major impact will be on the City Farm. The City Farm is located to the south of Sydney Park and will incorporate many functions including growing food. It is intended that this food will be sold back to the community through Farmer's Markets. The City Farm will also run around 300 education and training programs each year, including to school children. Construction of the City Farm is due to commence early this year, with programs commencing in the middle of 2016.

Concerns raised in consultation

A range of concerns raised by stakeholders are identified (pp. 15-25 and 15-26) however are not individually assessed/addressed.

Chapter 16: Soil and water quality

Non-Potable Water Supply Potential – Section 16.3

Reviewing point 16.3.2, the project has identified that the collected ground water from the tunnels (during standard operations) is to be drained to the water treatment plant at the Arncliffe motorway operations complex (MOC3).

The collected ground water from the eastern and western tunnels is expected to have different levels of contamination. The proposed treatment is outlined on page 16-49. **It is proposed to reuse the water in the motorway and landscaping where possible.**

The operational water treatment plant would discharge at a predicted maximum rate of around 20.1 litres per second into the Cooks River at the Marsh Street Bridge. Water will be treated to ANZECC Water Quality Guidelines.

Non Potable Water supply from the Treated Stormwater from the St Peter Interchange

The St Peters Interchange will produce polluted stormwater and this will need to be treated on site. There is minimal details of how the operator intends to do this. **There is the opportunity to get the treated water pumped to the Sydney Park Stormwater Harvesting Scheme.** This will improve the water supply security and received additional treatment through our treatment system.

The non-potable water can then be used through an expanded non potable water network.

Quality of the Water in the Alexandra Canal

The EIS aims to demonstrate the water quality in the Cooks River and Alexandra Canal is very poor. **The proponent is using this to reduce the quality of the water that discharged in to the river.** This is not an appropriate outcome, and the proponent should be taking the initiative to show leadership and work to improve the quality of the water in the Canal, rather than maintain the status quo.

Water Quality Improvement Standards

The proponent has proposed to apply the Botany Bay Water Quality Improvement Plans (BBWQIP) water quality targets to the project. On page 16-54, the proposed pollution reduction targets are applied to the additional impervious areas. **The targets need to be applied to the whole site so the pollution generated from the sites is less than the original sites.** This will mean the quoted pollution removal volumes will need to increase.

No details of WSUD on upgraded roads and intersections

There are no details of how the upgraded roads and intersections will comply with the BBWQIP targets. There is no Water Sustainability Urban Design (WSUD) details.

These details will need to be included in the detailed design should the project proceed, and it is recommended that this is worked through in collaboration with the City and Marrickville Council staff to ensure fine-grained local knowledge is incorporated into the design.

New Pipelines drain to Alexandra Canal

On page 16-50 it is proposed in Alexandra Canal, to have two new discharge outlets that would convey stormwater into the Canal as follows:

- A 3300 x 2400 millimetre open channel discharging immediately to the south west of Gardeners Road Bridge; and
- A 525 millimetre reinforced concrete pipe discharging immediately to the south east of Gardeners Road Bridge.

The detail of these outlets, including discharge velocities and scour protection measures, would need to be confirmed during detailed design.

The large culvert has the potential to cause scour of the canal sediments and resuspend the highly polluted sediment.

Chapter 17: Contamination

The St Peters interchange site covers an area with diverse characteristics and includes areas of land that are affected by potentially contaminating commercial/industrial land uses including; petrol service stations, dry cleaners, the Alexandria Landfill facility and a former metal smelter site at 5/5A Canal Road, St Peters.

In addition there are also areas of “made up” land that incorporate imported fill materials of unknown origin that typically are affected by some form of residual contamination, particularly hydrocarbons and lead. Deep excavations associated with tunnelling are likely to encounter groundwater, forming part of the Botany Sands Aquifer which is known to be potentially contaminated and is subject to management controls set by the Department of Primary Industries and Water.

The proposed land use associated with the project also varies from a contamination risk perspective, to less sensitive roadways and buildings which will encapsulate any contamination existing at a particular site, to more sensitive parks and open landscaped areas which provide potential direct exposure pathways to any residual contamination to the public using those areas as well as persons involved in maintaining those areas.

Under State Environmental Planning Policy (SEPP) 55 – Remediation of Land it is a general requirement that **a consent authority must be satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out.** If land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, the consent authority must be satisfied that the land will be remediated before consent is given and the land used for that purpose. **This SEPP applies in the use of the interchange for passive or active recreation.**

The environmental assessment requirements for the project issued by the Secretary for the NSW Department of Planning and Environment (SEARS) states that the Environmental Impact Statement (EIS) must address key issues which include contaminated sites. These requirements are outlined in Section 1.9 of the report and include;

- That an assessment of contaminated sites must be undertaken in accordance with relevant guidelines made or approved by the NSW EPA under section 105 of the Contaminated Land Management Act 1997; status of site contamination and suitability of the site for the proposal;
- Status of site contamination and suitability of the site for the proposal, including the suitability of the Alexandria landfill site for the St Peters interchange;
- An assessment of the potential disturbance of contaminated bed sediments in the Alexandria Canal, and interception of contaminated water from the Botany Sand Beds aquifer; and
- Having reference to the assessments conducted in satisfaction of the above, consideration of whether or not a site auditor, accredited under the Contaminated Land Management Act 1997, has or will be engaged to issue a site audit statement to certify on the suitability of the current or proposed uses.

The *Technical Working Paper – Contamination* prepared by AECOM and contained at Appendix O of the EIS confirms that a Phase 1 Preliminary Environmental Site Investigation (PESI) has been undertaken for the project. The PESI concentrated on five main and defined Project Areas where exposure to potentially contaminated soil and groundwater is considered most likely to occur. The report refers to the relevant SEARS in section 1.9. Only one project area (project area 5) concerns land located in the City of Sydney LGA within which the construction of the St Peters interchange and local road upgrades are proposed. AECOM have also reviewed previous environmental reports from properties located within the Project Area 5 footprint and also sediments within the Alexandria Canal that will be disturbed by the construction of bridge crossings associated with the project which are detailed within the report.

The PESI confirms that, from a review of historical records; EPA, Work Cover Authority and Local Council searches, that **there are numerous sites within the development area that are subject to significant contaminating activities and which would require further investigation.**

The PESI concludes that a Phase 2 Detailed Environmental Site Investigation involving Intrusive soil, fill, groundwater, leachate and ground gas investigations should be undertaken in these areas to further evaluate and manage the presence and extent of contamination in areas that will be disturbed by the proposed construction works. These investigations should be undertaken prior to disturbance of these areas to minimise the potential for identifying unexpected finds and project delays during construction. **Depending upon the extent and nature of any contamination, a Remediation Action Plan or Environmental Management Plan will then be developed to ensure relevant sites can be made suitable for the proposed use.** An environmental management plan incorporating an unexpected finds procedure/ should also be in place to manage potentially contaminated materials which may be encountered in areas not identified/anticipated as part of the PESI.

The PESI confirms that a NSW EPA Accredited Site Auditor will be engaged to ensure that additional site investigations undertaken at both the Alexandria Landfill and the previous smelter site at Canal Road have been undertaken in accordance with relevant guidelines of the NSW EPA and the *National Environmental Protection (Assessment of Site Contamination) Measure 1999 – Revised 2013*. Subject to the identification of future intrusive site investigations, remediation and validation requirements which may arise during the land acquisition and development process for the project, a site auditor may also be required to certify the suitability of the land for the current or proposed land use.

Alexandria landfill Site – Landfill Closure Management Plan (Appendix F EIS)

The main known source of contamination within the footprint of the proposed St Peters interchange is the Alexandria Landfill site located at 10-16 Albert Street, St Peters.

This 16 Hectare site is subject to Environmental Protection Licencing administered by the NSW EPA which is in the process of being transferred to Roads and Maritime Services. **The site has consent to operate as a non-putrescible landfill and waste recycling and storage facility, but is currently non-operational and is in the process of being decommissioned.** The final land use of the site associated with this project comprises of the St Peters Interchange with associated ancillary facilities and open space.

AECOM has been engaged by the Roads and Maritime Services to prepare a Landfill Closure Management Plan (LCMP) for Alexandria Landfill located in St Peters, the draft of which is contained at Appendix F of the EIS. The LCMP provides guidance on the proposed landfill closure activities that will be undertaken at the site, and aims to ensure that adequate landfill closure and rehabilitation measures are implemented and monitoring procedures continue as necessary following closure. The LCMP incorporates and makes reference to key legislation and guidance including the NSW EPA (2015) *Draft Environmental Guidelines: Solid Waste Landfills, Protection of the Environment Operations Act 1997* and the existing Environmental Protection Licences issued by the NSW EPA under the *Protection of the Environment Operations Act 1997*.

The EPA as the Appropriate Regulatory Authority for the site were consulted on an earlier draft of the LCMP and their comments/ advice on where these have been addressed are incorporated into the plan at Section 1.5.

A Phase 1 - Preliminary Environmental Site Assessment and a Phase 2 - Detailed Environmental Site Assessment has been undertaken of the site by AECOM which identified certain contaminants of concern that are randomly distributed within the landfill material. **These contaminants exceeded the adopted human-health and ecological based assessment criteria for future open space and commercial/industrial land use.** These included lead, carcinogenic polycyclic aromatic hydrocarbons, total recoverable hydrocarbons and asbestos. Contamination exceeding the adopted criteria was not detected in the underlying natural soils. Sources of contamination include above and below ground diesel storage tanks, chemical storage facilities, land fill materials and recycling stockpiles as well as off-site migration of contaminants from the former smelting and waste recycling plant located between Canal Road and the site.

The site is within Zone 2 of the Botany Groundwater Management Zone within which there is currently an embargo on the use of groundwater for domestic purposes.

Leachate from the site is currently pumped to Sydney Water Sewer via a trade waste agreement (TWA). Before discharging to sewer it is subject to treatment to remove ammonia and to meet effluent standards set by Sydney Water under the TWA. The existing leachate treatment system is currently being upgraded in accordance with an effluent improvement program agreed with Sydney Water which was scheduled to be operational by the end of 2015.

The St Peters interchange has been designed to incorporate landfill closure considerations as set out within the Landfill Closure Management Plan including capping, leachate and landfill gas management, monitoring of noise and management of dust and odours.

A dust and odour impact assessment has also been undertaken in relation to the closure of the landfill site which is contained in Part 8 of the WestConnex Air Quality Assessment report contained at Appendix H of the EIS. This is discussed in the Air Quality section (Chapter10) of this submission.

Potential contaminating activities

Works and activities associated with the St Peters Interchange development have the potential to cause localised contamination. These include earthworks, demolition of buildings containing hazardous building materials and chemical / fuel spills from plant and machinery. **These should be assessed and relevant mitigation measures outlined in a Construction Environmental Management Plan to be prepared for the development.**

Acid Sulfate Soils

The risk of acid sulfate soils occurring within the Project Areas have been assessed and identified in Chapter 5.0 of the EIS Contamination Report and which will require Acid Sulfate Soil Management Plans (ASSMPs):

These documents must be prepared in accordance with the Acid Sulfate Soils Management Advisory Committee (ASSMAC) (1998) *Acid Sulfate Soils Assessment Guidelines*. The ASSMPs should include protocols for the offsite disposal of acid sulfate soils and potential acid sulfate soils in accordance with the NSW EPA (2014) *Waste Classification Guidelines: Part 4; Acid sulfate soils*.

Recommendation

Prior to any intrusive ground works commencing, a Phase 2 Detailed Environmental Site Investigations (DESI) should be undertaken on sites subject to historic contaminating activities and those specifically referred to in the Phase 1 Preliminary Environmental Site Investigation previously carried out by AECOM. **Detailed site investigations should also occur on any land where a more sensitive land use is proposed such as open landscaped areas where direct exposure pathways will exist to any potential existing contamination** such as contaminated fill materials by the public accessing these areas or personnel engaged in maintenance.

The DESI should confirm that the site is suitable for the proposed land use or requires remediation/ongoing environmental management in order to make it suitable.

A NSW EPA Accredited Site Auditor should be engaged to ensure that these additional site investigations and any required remediation action plans/environmental management plans have been conducted in accordance with relevant NSW EPA Guidelines and the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (Revised 2013). **The Auditor should confirm either by a letter of interim advice or a Site Audit Statement that these sites are suitable or will be made suitable following implementation of the proposed remediation strategy for the intended use.**

On completion of any site specific remediation, **site validation reports must be prepared, submitted to, reviewed and approved by the Site Auditor and a Section A Site Audit Statement issued by the Auditor confirming the specific site is suitable for the proposed use.**

ATTACHMENT B

Where future site suitability is dependent upon an ongoing Environmental Management Plan to manage any residual contamination that may exist and remain on site, **this must be discussed and approved by the relevant authority that will be responsible for owning and/or maintaining those areas.**

Any new information which comes to light during remediation, demolition or construction works which has the potential to alter previous conclusions about site contamination should immediately be notified to the appointed Site Auditor in accordance with procedures set out in the Construction Environmental Management Plan to be developed for the project.

Excavated materials requiring off-site disposal must be classified in accordance with the NSW EPA (2014) *Waste Classification Guidelines*; or as an applicable resource recovery exemption and order under the *Protection of the Environment Operation (Waste) Regulation 2014*

Chapter 18: Flooding and drainage

Water

Discharge of water into Alexandra Canal during construction, operation, or as a result of overflow in a major storm event has a major potential environmental impact. **Both the quality and quantity of water entering Alexandra Canal as a result of this project should be considered when assessing the impact.**

Any water discharged into Alexandra Canal must meet Botany Bay catchment water quality standards. These water quality standards should also be met during construction.

Water Sustainable Urban Design (WSUD)

Roadside bioswales should be considered along the edges of the road where space allows to reduce impact of increased stormwater run-off into Alexandra Canal.

Relocation of the bio-retention pond on the Euston Road edge of the St Peters Interchange site should be considered to free up that land for active recreation uses, should air quality considerations allow.

Surface water from the site, and tunnel water, should be reused on site for construction and operational demands. Water that is collected on site and surplus to the capacity of the water detention pond, or the operational demand of the motorway, **should be pumped into the Sydney Park reticulation system or distributed locally for use by other parties, to prevent unnecessary discharge into Alexandra Canal.**

Chapter 19: Groundwater

Chapter 19 of the Environmental Impact Statement (EIS) and Appendix Q provides an assessment of the impact of this development to Groundwater and also covers mitigation and treatment of leachate from the Alexandria Landfill site and provides recommendations for mitigation measures within Section 8.

The information provided within the assessment is satisfactory **with exception of the proposed discharge of groundwater emanating from this site to the Alexandria Canal and Cooks River during construction and long term operations.**

The report recommends for groundwater to be collected, treated and discharged in accordance with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC 2000) for a highly disturbed ecosystem. ANZECC 2000 states that:

“A reduced level of protection may be appropriate as a pragmatic short-term goal, with the aim of eventually restoring it to the status of a 'slightly to moderately disturbed'. However, it is not acceptable to allow poor environmental management or water pollution, simply because a waterway is currently degraded”.

The project involves long term discharge of ground water during both construction and operational stages **for which a reduced level of protection as a short term goal does not appear to be appropriate.**

Further clarification should be obtained on the proposed level of treatment in relation to ANZECC 2000 and protection of the Alexandria Canal and Cooks River over the long term.

Mitigation and management measures

The mitigation and management measures as set out within Section 8 of Appendix Q of the Environmental Impact Statement (EIS) should be adopted during construction and operation of the project to reduce or eliminate the risks posed to the existing groundwater regime.

8.1 Construction

To mitigate and manage the potential impacts during construction, **the following measures must form part of the consent conditions, should the project be approved:**

- A tunnelling waterproofing procedure that outlines the methodology to determine when and what type of waterproofing is required to be installed during construction;
- Appropriate waterproofing measures shall be implemented to permanently reduce the inflow to an acceptable quantity where the project alignment passes close to watercourses and/or where higher than expected inflows are experienced;

- Pre-excavation pressure grouting shall be used in locations that could produce substantial inflows to reduce groundwater inflows to an acceptable level. Post-excavation grouting may also be required to further reduce groundwater inflows, and would occur shortly following the excavation of that area;
- Additional rock support shall be installed where saturated faults and fractures are intersected by the project to ensure tunnel stability; and
- A Construction Soil and Water Quality Management Plan shall be implemented during construction, which would also manage groundwater impacts during construction due to disturbances at the surface. This is to include:
 - An acid sulfate soil management plan, which shall be prepared prior to the commencement of bulk earth works where potential acid sulfate soils are expected. The plan should include the types of treatment required for acid sulfate soils, bunding and requirement for treatment ponds; and
 - Management measures for the storage and stockpiling of materials, fuel and wastes during construction.

Spill prevention and response procedures

The following should also be included as conditions of consent, should approval be granted:

- A protocol to address unexpected contaminated finds or unforeseen contamination issues during surface works and tunnelling shall be devised prior to commencement of the works. This would include approaches to remove the source of contamination by excavation, or an engineering solution to prevent the migration of contaminated groundwater into the tunnels;
- Shallow perched groundwater within Alexandria Landfill or Botany Sands shall be directed to the leachate treatment plant or the construction water treatment plant prior to discharge, depending on the characteristics of this groundwater. Elsewhere, collection and treatment options should be considered and releases made under relevant discharge criteria;
- Treated waste water should be stored and re-used for project purposes wherever possible. Groundwater reuse shall be in accordance with the policies of sustainable water use of the Department of Primary Industries (Water), such as dust suppression and earthworks;
- A groundwater soil and salinity report shall be prepared detailing the outcomes of geotechnical investigations to determine the presence, extent and severity of soil salinity along the alignment. The report is to be prepared in consultation with Office of Environment and Heritage and NSW Department of Primary Industries (Water). Measures would be outlined to minimise impacts on groundwater systems and other receiving environments;
- A groundwater monitoring program shall be prepared and implemented to monitor groundwater impacts during construction on groundwater quality. The program shall be developed in consultation with the Department of Primary Industries (Water) and relevant councils including the City of Sydney. If adverse impacts to groundwater quality are identified by the monitoring program due to construction activity, strategies would to be developed and implemented to reduce the impacts;

- Contingency measures to address leachate management at the Alexandria Landfill during construction and prior to the commissioning of the leachate treatment plant shall be explored during detailed design. Identified measures should be detailed in the Construction Environmental Management Plan and implemented during construction;
- Contingency measures shall be implemented in the event that of interaction with contaminated groundwater during construction within the Alexandria Landfill;
- Building materials that are resistant to aggressive groundwater conditions should be selected; and
- In the event that the drawdown in a water supply bore or irrigation bore exceeds two metres (in accordance with the Aquifer Interference Policy) measures shall be taken to 'make good' the impact by restoring the water supply to pre-development levels. The measures taken will be dependent upon the location of the impacted bore but could include, deepening the bore, providing a new bore or providing an alternative water supply.

Operation

Following construction and implementation of mitigation strategies, there could be residual impacts to groundwater throughout the long term operational phase.

Operational environmental measures should be prepared as part of the Operational Environmental Management Plan (OEMP), which contain response plans to manage on-going monitoring and reporting requirements, spillages or incidents.

Chapter 20: Non-Aboriginal heritage

Non-Aboriginal Heritage is canvassed in EIS Vol. 1C, Chapter 20. This chapter essentially summarises the more detailed *Technical Working Paper - Non-Aboriginal Heritage (TWP-NAH)* in EIS Vol. 2G Appendix R. For consistency, the review below will cross reference to EIS Chapter 20 and will only cite Appendix R if further details are relevant to the discussion.

The response below only covers heritage places and issues within or near the City of Sydney LGA and so focusses on the St Peters Interchange site and related works.

The report identifies one State Heritage Register (SHR) item, five locally listed items, one Heritage Conservation Area and two proposed local listings within the affected area of the Sydney LGA (EIS Ch. 20, pp. 20-8 and 20-9). It summarises the heritage significance of these places (pp. 20-28 and 20-29) and the projected impacts of the project on these places (pp. 20-32 to 20-42). The St Peters Brick Pit Geological Site is a non-statutory listed item and is partially within the Sydney LGA.

Key issues of concern

The EIS indicates:

- **The heritage item Rudder's Bond Store would be demolished.** It is locally listed as item I1405 in schedule 5 of the Sydney LEP but is attributed with State significance.
- The **proposed bridges over the Alexandra Canal** have the potential to generate a number of impacts on the heritage significance of this SHR item including physical and visual impacts and the possibility of structural damage due to vibration (p. 20-32).
- The proposed **pedestrian/cycle overbridge to Campbell Road** would overbear the adjacent heritage listed terrace houses I12 at **2-34 Campbell Road** and disrupt their setting and amenity.
- The **St Peters Brick Pit Geological Site** would be lost.
- Risks of **construction vibration** to heritage items not otherwise directly affected by the project (e.g. Water Board Pump House I18 and the Frank G Spurway building I20). In addition a number of places will be subject to direct impacts from vibration, settlement or groundwater drawdown (p. 20-43).

Impact on the City of these concerns

The environmental management measures proposed for the amelioration of negative heritage impacts and risks are summarised in Table 20-7. The table itemises and numbers the impacts and these numbers will be referred to in the discussion below.

Rudder's Bond Store

The project requires demolition of this heritage item (NAH 07). The Statement of Significance states, among other things, that the *"Rudders Bond Store is of State historical, associative, aesthetic, technical and rarity significance. Historically, the store demonstrates the innovative building techniques developed in response to a lack of materials during World War Two and in the immediate decades following the war"* (EIS Vol. 2G Appendix R p. 113). **Its demolition would result in loss of significant fabric and, in particular, the Ralph Symonds laminated timber structural system and is not supported.**

The environmental management measures (EIS p. 20-53) require that consideration be given to reusing the laminated timber structures elsewhere within the St Peters interchange or the local area. This is very open ended and, based on other precedents, may result in the salvaged fabric being stored and then lost, or used in a perfunctory or piecemeal fashion. If the building is to be demolished, the salvage and reuse of the significant laminated timber fabric must be actively built into the St Peters Interchange project.

Alexandra Canal

New bridges over the Alexandra Canal (NAH 16) have a potentially acceptable heritage impact provided the amelioration measures recommended in the EIS, together with the additional measures recommended below, are followed. **It is crucial that these major works are carried out to a high standard of engineering, architectural aesthetics and build quality** as, in the long term, they will be passed under by pedestrians, cyclists and waterway users of the Alexandra Canal corridor.

2-34 Campbell Road terraces

In addition to the Campbell Road Terrace House group I12, the EIS identifies that up to 57 heritage items may be eligible for at-property acoustic upgrades due to the widening of local roads in connection with the project and the resulting increase in traffic intensity.

Poorly conceived and designed acoustic treatment of heritage buildings can cause serious damage to heritage fabric and significance including the loss of original external joinery and internal lining and finishes.

St Peters Brickpit Geological Site

The loss of this important, and readily accessible, geological teaching resource is unfortunate (NAH18 and NAH 19, St Peters Brickpit Geological Site). The current design of the project appears to remove or bury the salient geological features, and it **is unlikely to retain any scientific or teaching value**. Even if the geological elements survive the construction process, they are likely to be within the operational area of the St Peters Interchange and would not be readily accessible.

Vibration, settlement and groundwater drawdown have the potential to affect both heritage and non-heritage properties in the City of Sydney LGA and **is a major construction risk issue**. There are precedents in Sydney for the damage and loss of buildings due to subsidence and or vibration from road tunnel projects and **these must be anticipated and prevented**.

Other impacts

Heritage impacts numbered in Table 20-7 but not discussed above are regarded as acceptable if the environmental management measures recommended to ameliorate their impacts are carried out in full. .

Suggestions for mitigation

The environmental management measures proposed for the amelioration of negative heritage impacts and risks discussed above are summarised in Table 20-7. The table itemises and numbers the impacts and measures and these numbers will be referred to in the discussion below. The measures are generally supported unless otherwise noted and additional measures are recommended as follows.

Rudder's Bond Store

If the City of Sydney's objection to the demolition of this heritage item is not sustained the following comments apply.

In addition to the environmental management measures proposed in the EIS (p. 20-53), an effective way of conserving the significant laminated timber structure of this building would be to incorporate them into new buildings required for the project. A number of buildings required for the St Peters Interchange appear to require long span structures and the long term conservation of the trusses would be guaranteed if they served a functional purpose in a working building. **This would provide a certain conservation outcome, allow interpretation of the structures and deliver a better ESD outcome by re-using structures and lowering the embodied energy of the project.**

Another potential use for the trusses would be **incorporation into a large span recreation facility** such as a gymnasium. This would allow public access and heritage interpretation of the structures.

There are very good precedents for the reuse of trusses in conservation projects in Sydney and elsewhere (for example, the Gantry project in Camperdown by Bates Smart).

Potential for direct impacts due to vibration associated with surface construction

In addition to the measures included in the EIS p. 20-54, **it is recommended that detailed dilapidation surveys, including the installation of structural 'tell tales,' be carried at all properties listed under NAH10.**

NAH 12 Acoustic Impacts (Includes 2-34 Campbell Road Terraces)

In addition to the measures included in the EIS (pp 20-38), the negative impacts of the proposed Campbell Road pedestrian/cycle bridge on could be ameliorated **by moving the bridge further west (depending on connectivity outcomes) and reducing the width of the bridge without reducing the functionality or width required for its pedestrian/bike rider connectivity.** This would also reduce the risk of damage from construction vibration.

Any at-property acoustic upgrading for the terraces must be designed in collaboration with an appropriately qualified and experience heritage architect to ensure that loss of original fabric is minimised and that the heritage significance of the place is not adversely affected.

Alexandra Canal

In addition to the amelioration measures proposed in the EIS (pp20-56) the areas of the canal embankments subject to direct physical disturbance and/or vibration impacts **should be accurately surveyed prior to the commencement of works.** In addition to the suggested archival photography, **a 3D scan of the site should be carried out.** This would facilitate the conservation of the site, including the **incorporation of sandstone blocks disturbed by the work into the repair and restoration of affected areas of the embankment.** The engineering and architectural design of the new bridges must ensure that they provide good amenity to users passing beneath them on land or water.

Heritage Interpretation

In addition to the environmental management measures listed a p. 20-56, **the brief for the public art, and the design of conspicuous built elements of the project should be informed by the heritage of the places affected or adjacent to the route** (NAH 17). This approach has been successfully applied to other major road projects in NSW (for example, the Gore Hill Freeway incorporates interpretation of Aboriginal rock carvings in its sound walls and retaining walls).

Interpretation of the St Peters Brickpit Geological Site into both the interpretation plan and the public art brief is recommended.

St Peters Brickpit Geological Site

Given that the project entails the substantial removal of this geological resource, the **project budget and program must include provision for a scientifically supervised excavation of the site** if palaeontologists believe that the site has potential to yield further specimens of scientific interest.

Chapter 21: Biodiversity

The City strongly recommends further assessment and mitigation measures to reduce impacts to biodiversity.

The City strongly recommends that all mitigation measures and opportunities identified in the report in Appendix B of this submission are considered and implemented.

EIS Volume 1C, Chapter 21 and Volume 2H, Appendices S – T do not adequately assess the biodiversity values of the project area as required under the Secretary's Environmental Assessment Requirements (SEARs), Threatened Species Conservation Act (TSCA), and the Office of Environment and Heritage's (OEH) Framework for Biodiversity Assessment (FBA). It does not appropriately consider the potential and cumulative impacts on the biodiversity of the project area in the local government area, and this creates weak and poorly designed mitigating and offset measures. **The proposal will have a significant impact on the local biodiversity and be detrimental to the City's efforts to conserve and enhance it.**

Biological Assessment Review is inadequate

Section 21.1 makes reference to the assessment being made in accordance to the NSW Biodiversity Offsets Policy for Major Projects and the FBA. The Biological Assessment Review (BAR) focuses on threatened species, populations and ecological communities, as does the FBA. However, the introductory SEARs statement and the *Threatened Species Conservation Act 1995* definition of biodiversity values suggests more consideration should have been given to biodiversity more generally, including species and sites of local conservation significance within the City of Sydney, and the numerous initiatives that have been implemented to conserve and enhance habitat for/at them. **The City is concerned that the assessment is not adequate or complete, specifically in regards to the biodiversity values at the St Peters Interchange and surrounds detailed in Section 21.2.** The BAR is flawed and does not address the requirements of the SEARs. The following issues are of concern in relation to the SEARs requirements and how the FBA was applied in preparation for the BAR:

Section 21.1.3 makes reference to *"Existing information about the biodiversity study area has been obtained from a range of sources including threatened species databases, aerial photographs, and previous studies relevant to the project corridor."* **No consideration was given to ecological reports and data held by the City of Sydney in preparation of the BAR**, including the City's Urban Ecology Strategic Action Plan (UESAP) and recent records of threatened and migratory species, despite sections of the FBA that state such information can or should be considered (Section 2.2.2.1, 4.1.1.2.3, 5.2.1.3, and 6.1.1.2 of the FBA).

Important habitat features, including local wetlands and native vegetation in Sydney Park, were either not mapped or not mapped adequately or otherwise identified in the BAR (Figure 21-7 p 27). This is despite requirements in the FBA for such features to be mapped (Section 4.1.1.12 and 5.2.1.1 of the FBA). Section 21.2.2 (p 19) notes that *“Areas of planted native, introduced and exotic species (urban native and exotic vegetation) have been mapped within parklands and areas of open space adjacent to the M5 East Motorway.”* As mentioned, the mapping is not adequate. Although outside of the development footprint, some local wetlands and native vegetation are adjacent to it and could be impacted. **It is considered that identifying the vegetation at these sites through mapping would assist in identifying impacts and ensuring they are mitigated.**

Section 21.2.2 (p 19) and Section 4.2.1 of Appendix S (p 34) defines vegetation in Sydney Park and Alexandria Landfill as Urban native and exotic i.e. *“Urban native and exotic vegetation within parklands including playground and maintained sports fields generally comprises large established trees with no shrub layer or evidence of regenerating overstorey species. Vegetated areas adjacent to the M5 East Motorway mapped as urban native and exotic vegetation primarily consists of regenerating canopy species above a shrub layer but with no large established trees.”* **This does not adequately describe the vegetation at these sites and is misleading in reference to vegetation within Sydney Park and the Alexandria Landfill** which has also only partially been mapped.

The field surveys and database searches, as highlighted, are weak and inconsistent. Section 2.2.1 of Appendix S (p 16) states that *‘If a threatened species absence from the study area could not be confirmed, then a precautionary approach was adopted, whereby the presence of the species was assumed.’* This is not appropriate, as **no surveys were undertaken for most threatened species, including several known to occur in the area**, yet the BAR later states there is no suitable habitat for these species, and they are not otherwise considered.

No ‘precautionary approach’ has been adopted. Fauna surveys were opportunistic only; no targeted surveys were undertaken apart from migratory waders at Eve St Wetland, which is outside (but close to) the development footprint. No surveys were undertaken at Sydney Park or Alexandria Landfill despite being within the footprint and having threatened species records and/or potential for threatened species, as well as priority/target species (refer to point ix. below). The development footprint extends to within a few metres of Sydney Park’s wetlands.

Threatened species, populations and communities in the City of Sydney LGA were not correctly identified. The Eastern Bent-wing Bat and (possibly) the Southern Myotis, the endangered Long-nosed Bandicoot population, the endangered Coastal Saltmarsh community, and migratory species including the Great Egret, Cattle Egret, Sharp-tailed Sandpiper, Latham’s Snipe and Rufous Fantail have all recently been recorded in the City of Sydney, but as noted above were not identified or adequately considered in the BAR, despite potential for the project to impact upon them.

The list of candidate ‘species credit species’ in the BAR does not include several species that have recently been recorded in the vicinity, and/or for which suitable habitat (as described on the OEH Threatened Species Profile Database) is present within the development footprint, particularly at the Alexandria Landfill site where clearing has already commenced, and adjoining industrial and vacant land. These include the Eastern Bent-wing Bat, and Southern Myotis, and the endangered inner west population of the Long-nosed Bandicoot. It appears these species have been incorrectly excluded from further consideration in application of the FBA, and that they should have been addressed further in the BAR in accordance with the requirements of Sections 6-12 of the FBA.

Section 21.2.3 (p 31) of the BAR states that there is no suitable habitat for the threatened species within the St Peters Interchange and surrounds, which is clearly not the case as evidenced by reports and data held by the City. As previously mentioned and as described on the OEH Threatened Species Profile Database the above threatened species do exist in areas such as those within the St Peters Interchange.

The Long-nosed Bandicoot population was also identified by the OEH as requiring further consideration in accordance with Section 9.2 of the FBA, but no further consideration was given to it, despite the SEARs stating that specific surveys were required.

The BAR also does not contain any reference to or consideration of the significant initiatives by the City of Sydney and their respective community members in recent years to conserve and enhance habitats to promote biodiversity. These initiatives are guided by the City of Sydney’s Urban Ecology Strategic Action Plan (UESAP). This document outlines ‘priority’ or ‘target’ species of local conservation significance within the City, along with ‘priority’ habitat sites and actual or potential habitat linkages/connectivity between them, as well as between sites in adjoining LGAs. Priority/target species are referred to in the report in Appendix B.

Despite comprising highly modified and/or constructed habitats, priority sites in the City provide important habitat for the priority/target fauna species in this highly urbanised context. **For instance, in Sydney Park, at least 62 native fauna species have been recorded since 2010.**

The dense weeds, mature trees, rock crevices, sandstone boulders, piles of debris and other ground-level features at the Alexandria Landfill site are also of habitat value for priority species and potentially threatened species. The landfill contributes to local habitat connectivity between Sydney Park and Tempe Reserve and other sites on the Cooks River. The banks of Alexandra Canal are also important with regard to local habitat connectivity, with the UESAP recognising their potential for future habitat enhancement, particularly due to the presence of the scattered Coastal Saltmarsh species and the presence of priority fauna species.

Section 2.2.5 of Appendix S (p 20) identifies some limitations to the field survey. Note that in reference to hollow bearing trees, it should be acknowledged that it is difficult to accurately locate all hollows suitable for microbats using the methodology described.

While not necessarily required by the FBA, it is disappointing that there is no recognition of any of the above in the BAR, despite the development footprint for the St Peters interchange and local road upgrades extending from Alexandra Canal across the Alexandria Landfill and into Sydney Park, with a construction compound and other works immediately adjacent to the park’s habitats.

A more detailed list of the sections of the FBA that appear to have been overlooked in the BAR are referred to in the report in Appendix B.

Section 21.3 considers the potential impacts of the project based on a flawed assessment. Furthermore, while the potential impacts of the project are discussed in general terms in the BAR, it does not describe or address in detail all of the potential impacts of the project on the previously mentioned species and sites during construction and operation, and thus impacts on some threatened species are unknown.

A more comprehensive discussion of all impacts, including site-specific details, should be included in the BAR. Major concerns the City refers to include;

- Mortality of fauna,
- Reduction in habitat extent, damage to/removal of vegetation;
- Noise, dust, light, shade and other visual disturbance;
- Potential removal/disturbance to endangered Coastal Saltmarsh;
- Sedimentation and pollution; and the alteration of hydrological regimes.

Refer to Section 3.4 of the report in Appendix B for further detail.

Environmental Management measures

Section 21.4 outlines environmental management measures. Those measures outlined in the BAR are not considered adequate in terms of ensuring minimisation of impacts to biodiversity values in the City of Sydney. Given that the nature of actual or potential impacts to threatened species, populations and communities that will result from the development are unknown due to the perceived shortcomings in application of the FBA outlined in Section 3.1 **further assessment is considered necessary in accordance with Sections 6-12 of the FBA**, with the BAR updated based on the results.

Additionally, the fact **that impacts to threatened species, populations and communities and to priority/target species were not specified in the BAR suggests these species may be overlooked in the Flora and Fauna Management Plan (FFMP)** that is to be prepared for the project. This is of concern, particularly as application of the Roads and Maritime Services (RMS) Biodiversity Guidelines which the BAR states will form the basis of the FFMP, is partly reliant on information in the environmental assessment documents. Refer to Section 3.4 and 3.5 of the report (Appendix B) that details additional potential impacts and cumulative impacts of the project. **Note that no cumulative impacts of the project were described in the BAR, which the City finds concerning considering the extent and nature of the project.**

More detailed measures are therefore recommended for addition to the BAR and FFMP along with/instead of others already specified. Any additional mitigation measures identified through the recommended further assessment recommended in Section 6.5.1 of the report in Appendix B, and any identified for similar species/sites in other LGAs. Site-specific mitigation measures should be outlined, notably for St Peters Interchange, Alexandria Canal, the proposed construction compound in Sydney Park, and the removal of trees along Campbell and Euston Rd for example. Refer to Section 3.6.2 of the report in Appendix B for more detailed environmental management measures requirements and mitigation opportunities to offset the impacts of the project.

Opportunities for habitat creation

The BAR does not recognise or discuss any of the opportunities presented by the development to create substantial new habitats through site landscaping in and around the proposed open space adjoining the St Peters Interchange, and along Alexandra Canal. While this might not be considered a particular requirement of the FBA, such opportunities have the potential to compensate for some of the adverse impacts and should therefore be documented.

It is noted that the Urban Design report and Landscape and Visual Impact Assessment prepared for the EIS identify some opportunities in this regard, but these focus mainly on establishing heavily treed areas which are unlikely to support many of the priority/target species, but rather to encourage the species that are well-adapted to urban environments and that are very common as a result. The overview of the Species Selection identified in EIS Volume 2E Appendix L Section 6.4 (p114) is removed from any intention to mitigate the habitat loss and reduced connectivity that the project will result in.

Volume 2E Appendix D of Appendix L (p145) indicates a very limited and inappropriate landscape concept plan for the St Peters Interchange and is not locally relevant. **It is strongly recommended that the landscape plans are revised and made in consultation with an ecologist and the City's Urban Ecology Coordinator.**

There are many more possibilities for habitat creation and the City believes that these should be incorporated into the BAR, and/or the Urban Design report and Landscape and Visual Assessment, and further developed with reference to the City of Sydney's UESAP and Marrickville Council's Biodiversity Strategy and Biodiversity Action Plan, and in consultation with the City of Sydney's Urban Ecology Coordinator and Marrickville Council's Team Leader, Biodiversity. Examples of opportunities as described in Section 3.6 of the report in Appendix B have the potential, over time to contribute to biodiversity values through enhancement of habitats and connectivity in the area.

Chapter 22: Greenhouse gas

A key concern for the City in this EIS is that operational omissions have only been extrapolated to 2031. This is due to the traffic modelling timeframe which was the primary data input, but in the same vein is totally inadequate for an asset with a concession life of 45 years. Whilst it is likely that the margin of error would increase if a longer period were to be modelled, to only consider emissions for a 18 year period for such an extensive and heavily polluting piece of infrastructure is at odds with the globally recognised and nationally endorsed need to reduce the emission of greenhouse gases. **Any other major emitting infrastructure would model well beyond 18 years – for the term of the assets life ideally, so to limit to this timeframe is poor.**

The EIS notes that emission savings will reduce over time “as traffic volumes” increase. This recognition is welcome as it is well known around the world that when cities build more road it eventually results in more car usage. **A question this raises is whether this is an appropriate strategy for Australia’s global city.**

Considering the concession period of this road, it is disingenuous to claim the project’s modelled short-term emission savings as a project benefit especially when it fails to model beyond this timeframe. It is recommended that prior to any approvals, the proponent extrapolates operational emissions as long as the concession period of 45 years to understand the longer term impact.

Flooding

Although recorded as one of the most significant climate change risks, it is very poor that the project team did not involve each council in the flood studies considering the local knowledge available. Involving councils would have greatly improved the assessment outcomes.

To assert that as there is no new hard stand that the motorway will not impact on localised flooding fails to address that localised flooding will impact the motorway. If its exit ramps back up because local streets near the canal are flooded (which they often are in times of heavy rain) then the impact will be very real.

Gas from landfill - 22.3.2 Emissions associated with the Alexandria Landfill

“It is anticipated that collected gas will be treated through flaring, but other control measures, such as use of biological treatment to convert methane to carbon dioxide, would be considered as part of the detailed design.” Flaring should not be considered an appropriate modern solution. **If the volume of methane is likely to be too small of on-site polishing and reuse, it should be stored for treatment and re-use elsewhere.**

Use of renewable energy

Impact no. OpGHG 3 – “At least six per cent of energy required for the project would be sourced from an accredited GreenPower energy supplier, where possible.”

ATTACHMENT B

Although in line with the *Transport Environment and Sustainability Policy Framework*, this is an inadequate target in a post-Paris COP21 context and **should be revised by the proponent**. Page 3 of the same policy framework references *NSW 2021: A Plan to Make NSW Number One* and its **target of 20% renewable by 2020**. So the project target should at least aim at this higher percentage of renewable energy.

The City of Sydney procures 100 per cent accredited Green Power for its operations and strongly encourages other government entities to match this standard. Other NSW Government transport projects have set the target for 100 per cent GreenPower, such as the North West Rail Link.

It would be prudent for the proponents of the largest motorway project in Australia to demonstrate leadership by procuring 100% GreenPower; particularly when other Transport cluster project is doing so.

Chapter 23: Aboriginal heritage

No comments.

Chapter 24: Resource use and waste minimisation

On-site reuse of construction spoil is to be commended. This is good practice and common sense.

Use of recycled materials to off-set use of virgin materials is a big opportunity to reduce the environmental impact of major construction works, but it is not addressed in Section 24.

Yet Section 28, Table 28-3 Sustainability refers readers to Section 24 to gain details on plans on resource use and waste minimisation. Table 28-3 sets a target to “optimise the amount of cement replacement material (Measured by mass) used in concrete”. This is more an aspiration than a target as there is no measurable quantity set. **A metric needs to be attached to make the approach meaningful and applicable.** The “optimal” outcome must balance engineering, cost and environmental outcomes (not just cost) and has been successfully achieved on other major infrastructure projects. For instance, the Anzac Bridge pylons used 65% waste industrial product to offset use of Portland cement. SMC should also commit to using recycled content in steel where available and assuming that it does not compromise structural requirements.

The aspiration to collect and re-use water on site for operational needs is to be commended. However the detail is lacking and this is not worded as a commitment. Again, **a metric needs to be applied to make the aspiration meaningful and achievable.**

A circular reference is found when addressing “*Operation resource consumption*” on p24-17, where sustainability initiatives to reduce water consumption are discussed in Chapter 28 (Sustainability), but the targets on p28-10 are qualitative rather than setting a measurable quantity.

Chapter 25: Climate change risk and adaptation

Methodology

The methodology outlined is overly simplistic and the scope too narrow. By not involving stakeholders in the risk identification process there is a significant likelihood that risks will have been overlooked. By not undertaking any interdependency analysis the study will, by definition, have failed to identify knock-on impacts to and from the new road infrastructure and surrounding assets and infrastructure such as; energy, water, ICT, other roads and so on. **A more holistic view should be taken of the impacts of climate change on infrastructure.**

Extreme sea level

It is encouraging to see that a NSW Government project recognises Sea Level Rise (SLR) for Representative Concentration Pathways (RCP) 8.5 of up to 0.89 meters. **The City encourages the Government to re-instate its policy position (as set out in 2009 NSW Sea Level Rise Policy Statement that was rescinded in 2012) recognising a consistent SLR framework for the entire NSW coastline.**

Following on from this, and in recognition that RCP 8.5 approximates the world's current emissions trajectory, the need for Government to lead in the adoption of 100% renewable energy usage targets is clear.

Section 25.3.2 refers to a “*subsequent detailed risk assessment to be undertaken during detailed design*”. **The City recommends the proponent incorporates stakeholder participation and an interdependency analysis** as part of this detailed assessment to ensure local expert knowledge is incorporated in detailed design, should the project be approved.

Adaptation omission

There is no measure to coordinate adaptation planning or response within Table 25-6 with other infrastructure operators and assets.

Other NSW Government agencies are developing the Adapt Infrastructure tool (lead by the Office of Environment and Heritage and Sydney Water) to coordinate the cross-agency management of climate adaptation. Such an adaptation tool would help the proponent move beyond the current siloed approach that treats the tollway as a standalone piece of infrastructure, which it is not. **The WestConnex tollway does not operate in isolation from other roads, other modes of transport, power sources, information communication technology (ICT), and water infrastructure** and so on. The interdependency with these other infrastructure types and operating organisations should be factored into adaptation planning.

Chapter 26: Hazard and risk

No comments.

Chapter 27: Cumulative impacts

This chapter is very weak and of significant concern to the City. The assessment fails to include considerable land use changes such as the Ashmore Estate and the Central to Eveleigh corridor including the significant redevelopment at Waterloo. The assessment also fails to consider the operational impacts of the project in any depth or detail. The focus is primarily on the construction impacts.

The considerable additional traffic that will be delivered onto the local road network has essentially been dismissed. There is no consideration of this in terms of the growth in population and the demand for road space which will require a more efficient allocation; not necessarily more capacity. This is unacceptable.

The cumulative impacts of the entire WestConnex project must be considered and assessed, including the M4-M5 Link (including the traffic to/from the Camperdown Portals and impacts on Parramatta Road) and the Southern Extension (including utilisation of the additional capacity of the New M5 between St Peters Interchange and Arncliffe). These projects will have impacts on the southern Sydney road network.

Chapter 28: Sustainability

WestConnex sustainability strategy

It is encouraging that the sustainability strategy is seen as a “*framework to implement sustainability objectives and targets through the project’s contract requirements...*”

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 a worthy goal which the proponent must be held to account.

Materials

The sustainability targets set out in Table 28-3: are worthy goals but the wording is brief and does not make strong commitments, for instance in the second bullet; “*Maximise the use of all timber products from either recycled timber products from either reused/recycled timber or from sustainably managed forests that have obtained Forest Management Certification*” – although this has merit, there is no indication as to what basis “maximise” should be measured. **There needs to be a metric attached to this to give some assurance about the level applied.** For example, the London Olympic Games committed to 100% recycled or FSC timbers in construction up to 2012. The proponent would again do well to show environmental leadership in such a major infrastructure project.

The comment that alternative concrete “*would be considered*” uses wording that does not imply any market research or sounding (despite a preferred contractor being named) has occurred, or that there is any commitment to using this material. Similar to other elements of this EIS, it demonstrates a compliance-driven approach with little innovation or consideration of the needs of future generations.

Energy and carbon: as mentioned above, the six per cent renewable energy target for construction and operations is too low and weak. The North West Rail Link project has set a target of 100 per cent renewable energy (or offset) and the Sydney Light Rail project is currently working towards a similar commitment. The City of Sydney also has a 100 per cent renewable energy commitment and off sets all other emissions to meet our carbon neutral status.

Maximise equitable training and employment opportunities

These aspirations are admirable and is a long-held practice of the Roads and Maritime Authority.

The proponent may wish to engage with the City’s economic strategy team with reference to the Aboriginal Economic Development Plan which addresses much common material.

Project-specific sustainability initiatives

All listed initiatives are admirable, with the exception of the six per cent (6%) GreenPower target as discussed above. This is very poor and does not demonstrate an adequate commitment from the Government to support or invest in renewable energy.

Intergeneration equity

The document states that intergeneration equity has been considered in terms of emissions, among other areas, however; the emissions modelling only runs until 2031. **This 16-year period represents half of one future generation only. This does not address the meaning or intent of the concept to provide equity for future generations.**

Peak oil

The focus on peak oil rather than emissions is rapidly becoming out of date. In a post-Paris COP 21 policy environment, developed economies will have to leave oil in the ground rather than worry about reserves running out. **The proponent should be considering how peak carbon will impact its asset rather than peak oil.**

Improved valuation and pricing of environmental resources

The toll mechanism discussed in this section could be used to more effectively implement a “polluter pays” mechanism. **The proponent should consider a toll structure based on environmental impact rather than by vehicle classifications.** That is, using vehicle emission classification akin to the London congestion charge as the basis for setting the toll. The number of vehicle occupants should also be a factor, to encourage efficient use of emission-efficient vehicles.

Chapter 29: Environmental risk analysis

This chapter considers risk across the scope of the project. **The EIS does not include any type of risk rating or how risks were assessed.**

See the relevant chapter comments for responses to this section and to raise risks identified by the City.

Chapter 30: Summary of environmental management measures

This chapter considers the environmental management measure to be implemented across the project.

See the relevant chapter comments for responses to this section and to raise management measure that should be included, as identified by the City.

If the project is approved, a condition of consent must be that all relevant City of Sydney policies must be complied with during the construction and operation phases.

Chapter 31: Project justification and conclusion

The basis of this project's justification is meeting its own objectives. This is unfortunate, given **the project objectives are openly biased towards a motorway solution**. The project claims that it will "*deliver significant long-term benefits to the economic growth and development of NSW and Australia*" (section 31.1.1). This, **and the statement that the New M5 and WestConnex will support growing Sydney are tenuous, and the EIS does not support these statements with compelling evidence.**

The statement that the New M5 is consistent with the state's planning and policy documents (section 31.1.2) is untrue. The clear disassociation of this project with the objectives of the Government's land use policy (notwithstanding its inclusion in that document's mapping) is clear, and has **potentially damaging legacy implications on a Greater Sydney scale.**

The only real justification for this project is to build resilience in the motorway system. Rather than the proponent considering how to develop an integrated transport response to the challenges faced by growing Sydney, it is moving forward with a program of works that is significantly altered from its original intent, and **will not support the shaping of a sustainable or resilient Sydney.**

The nature of the assessments in the EIS are consistently compliance focused and lack any real consideration of the communities that it will affect. The Government, through supporting WestConnex in its current iteration is actively working against itself by continuing to link the west and the east rather than develop the west through appropriate transport infrastructure.

The City would argue that from an economic perspective, creating the New M5 and WestConnex is not the highest and best use for land, and **the Government has not appropriately considered the opportunity costs of this project, nor the WestConnex program.**

The City strongly objects to the New M5 proposal.

Appendices

Appendix A – WestConnex Stage 2 EIS review – Review of Strategic Alternatives and Socio-economic impacts (SGS Economics)

Appendix B – New M5 and St Peters Interchange Environmental Impact Statement – Review of Biodiversity Assessment (Katherine Oxenham)

Appendix C – WestConnex Stage 2 EIS – Review of Traffic, Transport and Modelling (TTM Consulting)