

Sydney Gateway Project EIS Review

Traffic and Transport

Department of Planning, Industry and Environment

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EXECUTIVE SUMMARY

Scope of the Review

Bitzios Consulting was engaged by the Department of Planning, Industry and Environment (DPIE) to provide independent review services for the traffic and transport aspects associated with the Sydney Gateway Project EIS. The review role extended across three phases which were:

- A consistency review of a Draft version of the EIS against the Secretary's Environmental Assessment Requirements (SEARs) for the project to identify any SEARs items not covered, or insufficiently covered, in the Draft EIS
- The review of the EIS documentation related to traffic and transport aspects
- Providing input into the development conditions to address any unresolved impacts from the EIS.

Consistency Review Findings

The consistency review identified that the SEARs were generally well covered in the Draft EIS. The review identified the following issues for further consideration in finalising the EIS documentation:

- The need for further documentation of traffic and transport impacts outside of peak periods
- The need to acknowledge and describe potential consequential impacts at the T2/T3 terminal of releasing traffic into this constrained area
- Merge and diverge point congestion on the project's ramps and how this would be addressed
- Impacts on public transport patronage were not covered
- The cumulative impact risks of the Botany Rail Duplication project and the possible closure of Robey Street and O'Riordan Street

Most of the above issues were subsequently addressed in the SEARs. Those that were not are discussed further below.

EIS Review Findings

The key findings from the review of the traffic and transport aspects of the Sydney Gateway EIS were:

- **SEARS:** The responses to the SEARs are generally well covered in the EIS and the Traffic and Transport Technical Paper
- **Strategic Context and Project Need:** Generally well covered but excludes specific discussion on supporting a rational functional road hierarchy in the area and also does not provide sufficient detail on internal upgrades within the airport to prove that the changing arrival patterns can be absorbed on the airport without queue-back consequences. The proponent has suggested that it has been working with the Airport to plan its landside infrastructure response however there is no evidence of this in the EIS.
- **Project Alternatives and Options:** The description and the assessment of strategic alternatives, corridor options and alignment options generally meet the requirements of the SEARs. There was no reasoning for why the project study area did not extend as far as Southern Cross Drive (M1) in the east, which would have been logical or why project cost was not included in any of the corridor or alignment option evaluation criteria.
- **Project Description:** The detail of the description is considered to have addressed the requirements of the SEARs. There is no description however as to how the project will seamlessly integrate with the necessary on-airport upgrades required.
- **Construction Period Impacts:** The impacts are generally covered sufficiently to meet the requirements of the SEARs. The key exceptions though are the absence of mitigation measures for the construction period delays added between November 2021 and December 2023 on the O'Riordan Street approach to the airport and insufficient consideration of the potential cumulative impact scenarios and risk management options for the construction of the Botany Rail Duplication at the same time as the project; given the significance of the potential impacts generated.

- **Traffic, Transport and Access:** The modelling and evaluation highlighted very few operational period impacts of the project and the introduction of significant benefits, as expected. No queue length data was presented which is the most effective way for readers of the EIS to understand comparative impacts and benefits. Most importantly, it appears that the airport T2/T3 access and egress have been modelled as short 'stubs' in the microsimulation model when it is likely that without sufficient upgrades to ground transport facilities on airport land that extensive congestion and queuing will occur spilling back into the Qantas Drive – Joyce Drive area and with the potential for circular congestion impacts which would undermine the benefits of the project. These impacts were not contemplated in the EIS nor was a strategy put forward to address them.

Subsequent advice from the proponent identified that these issues have been considered by the Airport in its ground transport planning rather than by the project but the outcomes of these assessments are not published on the EIS

- Other considerations include:
 - **Temporary pedestrian and cyclist facilities:** It would have been beneficial to document what the minimum requirements are for these facilities to ensure comparative alternatives are put in place to those which are impacted. These needs were subsequently addressed through the draft conditions of approval.
 - **Network statistics for the project:** As is usually prepared for EIS's for major road projects, a table of network statistics would have been valuable to determine changes in VHT, VKT, modal share etc. due to the project relative to the Do Minimum case. Specific identification of patronage changes on the Airport Line would also be beneficial for a more complete comparison of benefits and impacts
 - **Off peak construction traffic:** Publication of off peak average hourly construction traffic and hours of operation would have assisted in understanding residential amenity and business impacts. The EIS assessment focussed on peak period traffic impacts despite construction traffic to be scheduled outside of peaks where practical. These issues were subsequently addressed.
 - **Merging/diverging congestion within the project:** There was insufficient basis to claim that this can be 'managed' using smart motorway techniques and simulation modelling should have been used to confirm and demonstrate this in the EIS/Technical Report. Presenting the resulting queues (if any) would have also provided an indication of measures required to minimise the impact of queueing on the project alignment
 - **Bus priority opportunities:** Potential opportunities for bus priority improvements using relieved surface road capacity would have also been appropriate to test. It is noted general improvements to bus travel times are experienced as a result of the project due to reduced traffic volumes and that new services and bus priority improvements could be contemplated outside of the project.

Recommended Conditions

The majority of the traffic and transport-related conditions are relevant to the construction period and most of these can be addressed through DPIE's standard condition set. Specific conditions or condition-intents that are recommended for DPIE to consider including as part of an approval, if the project is to be approved, are:

- Requiring a traffic and transport integration plan demonstrating how the project, once completed, will integrate with the timing of committed and planned upgrades at Sydney Airport in the short term and in the long term
- Providing the alternate pedestrian link solution as described in the EIS and agreed by Transport NSW and Sydney Airport, for pedestrian and workers access to Link Road
- The Construction Traffic Management Plan (CTMP) should detail the extent of local traffic and parking impacts generated by each construction site by time of day and day of week for each construction stage and identify specific management measures to address these impacts. It should make use of microsimulation modelling to provide a balanced comparison of the additional delay costs to the general community versus the project costs of scheduling more of the truck movements outside of peak hours.

CONTENTS

	Page
EXECUTIVE SUMMARY	III
1. INTRODUCTION	1
2. CONSISTENCY REVIEW	2
3. STRATEGIC CONTEXT AND PROJECT NEED	3
4. PROJECT ALTERNATIVES AND OPTIONS	3
4.1 Strategic Alternatives	3
4.2 Corridor and Alignment Options	4
4.3 Preferred Alignment	4
5. PROJECT DESCRIPTION	4
6. CONSTRUCTION PERIOD	5
6.1 Construction Compounds	5
6.2 Active Transport	5
6.3 Traffic	5
6.4 Cumulative Impacts	5
7. TRAFFIC, TRANSPORT AND ACCESS	6
7.1 Methodologies	6
7.2 Travel Demand and Travel Time Changes	6
7.3 Intersection Performance	6
7.4 Other Benefits and Impacts	7
8. PROPONENT'S RESPONSES TO ISSUES RAISED	8
8.1 Construction Period	8
8.2 Operational Period	10
8.3 Cumulative Impacts	13
9. CONDITIONS	14
9.1 Overview	14
9.2 Recommendations	14

Appendices

Appendix A: SEARs Table and EIS Review Findings

1. INTRODUCTION

Bitzios Consulting was engaged by the Department of Planning, Industry and Environment (DPIE) to provide independent review services for the traffic and transport aspects associated with the Sydney Gateway Project EIS. The review role extended across three phases which were:

- A **consistency/adequacy review** of a Draft version of the EIS against the Secretary's Environmental Assessment Requirements (SEARs) for the project to identify any SEARs items not covered, or insufficiently covered, in the Draft EIS
- The **review of the EIS documentation** related to traffic and transport aspects
- Providing **input into the conditions** of approval to address any unresolved impacts from the EIS.

The purpose of this work was to determine:

- Whether the SEARs related to the project have been adequately addressed and whether new information is required or more detail on the provided information is needed to adequately address the SEARs
- Whether the impacts of the project have been sufficiently identified and described in the EIS
- Whether the proposed mitigation measures resolve the impacts generated or if there are any residual impacts which need to be considered further
- Whether conditions should be imposed to mitigate any residual impacts not addressed in the EIS.

This report summarises the findings of the above. Section 2 provides the consistency review and Section provides a review of the EIS. The proponent has also responded to a number of questions raised during the review process and these questions and responses are documented in Section 4. Section 5 concludes with recommended conditions should the project be approved.

The majority of the review is centred on the *Sydney Gateway Environmental Impact Statement (EIS)* dated November 2019 with consideration of the Secretary's Environmental Assessment Requirements (SEARs) for the project. The following Chapters of the Sydney Gateway EIS were reviewed:

- Chapter 5 - Strategic Context and Project Need
- Chapter 6 - Project Alternatives and Options
- Chapter 7 - Project Description
- Chapter 8 - Construction
- Chapter 9 - Traffic, Transport and Access

The further detail contained in the Traffic and Transport Technical Paper has also been considered.

The EIS Review Findings Schedule which completes a review against each relevant SEARs item is provided in **Appendix A**.

2. CONSISTENCY REVIEW

The review commenced with an assessment of the contents of the Draft EIS against the SEARs. The key findings were:

- The intent of the SEARs were generally well covered in the EIS and the Traffic and Transport Technical Paper
- The description of the assessment of alternatives to the project and the description of the project was generally sufficient related to the SEARs
- The impacts and benefits of the project on traffic congestion during the construction and operational periods focussed on peak periods and these impacts and benefits are very well described as per the SEARs. However, out of peak period impacts are less well described particularly in relation to daytime on street parking impacts and management, the after-hours impacts of construction vehicles and the safety and security impacts of the relocated active transport link through Tempe
- The assessment did not discuss requirements on the T2/T3 terminal at the airport which will be impacted by greater and more intense arrival flows due to the project. There is no demonstration that the efficiency benefits of the project will not be undermined by traffic capacity limitations within the terminal
- Merge and diverge point congestion issues within the project are identified but the mitigation measures are generic and have not been proven within the Draft EIS and hence didn't sufficiently address the SEARs
- The impacts of the project on public transport patronage (rail and bus) are not discussed but should have been to meet the requirements of the SEARs
- The cumulative impact of the construction of the Botany Rail Duplication and the closure of Robey Street and O'Riordan Street is a major issue which should influence the timing of construction of the right turn overpass into the T2/T3 terminals. Further discussion was identified as being warranted to manage this program risk.

The additional information recommended to be included in the Final EIS was:

- **Temporary pedestrian and cyclist facilities:** Defining what the minimum requirements are for these facilities to ensure comparative alternatives are put in place to those which are impacted. For the temporary route through Tempe, proposed measures to provide user safety and personal security equivalent to the impacted route should be identified
- **Justification of the strategic Alternatives 1-5 (in combination) not being as effective as Alternative 6 (the project):** A numerical performance 'analysis' of the other 5 options in combination, possibly using strategic modelling, would assist with justifying that the preferred strategic option has been selected
- **Off peak construction traffic:** Publication of off peak average hourly construction traffic and hours of operation would assist in understanding residential amenity and business impacts
- **T2/T3 terminal measures:** Describing and modelling what is being done within the airport to 'accept' the additional traffic on the project and other roads converging at the airport will provide confidence that the project will not be impacted by queue-back traffic because it is causing traffic to arrive at the airport sooner/faster
- **Merging/diverging congestion within the project:** There was insufficient basis to claim that this can be 'managed' using smart motorway techniques and simulation modelling should be used to confirm and demonstrate this in the EIS/Technical Report.
- **Bus priority opportunities:** In addressing the 'wider transport interactions' further details were requested on the patronage impacts and benefits to rail and bus services and potential opportunities for bus priority improvements using relieved surface road capacity.

3. EIS REVIEW

3.1 Strategic Context & Project Need

The economic importance of efficient road access to Port Botany (the port) and Sydney Airport (the airport) and the complexity of traffic movements and increasing congestion issues near these facilities were articulated well in the EIS. The conflict of heavy through traffic and local movements (by all modes) within the redeveloped Mascot town centre is a key issue which is raised but not emphasised. Along with transport efficiency benefits of the project, this reduction in through traffic on local roads is understood to be a primary benefit of the project.

The EIS highlights that the project is needed to provide access to the port and the airport as well as to provide motorway to motorway/highway connections. The project description though suggests that the majority of the need appears to be directed towards airport access (Terminal 1, Terminal 2/3). The project will improve road freight efficiency for part of the route between the St Peters Interchange and the port although heavy trucks will still need to pass through multiple at-grade intersections between the Robey Street/Qantas Drive intersection and Foreshore Road in Botany, somewhat diluting the potential road freight travel time benefits of the project.

Given that the majority of the project need is for better airport access, further discussion would have been warranted as to how the project integrates with the airport ground transport master plan, and potential upgrade works, specifically at the interface points for access to and egress from car parks and drop-off and pick up zones. There would have also been merit in extending the study area further east towards Southern Cross Drive and Foreshore Road to discuss benefits, impacts and interactions with port-related truck traffic.

Also, the Strategic Context or Project Need definitions do not explicitly cover the benefits of supporting a rational functional road hierarchy in the area; for example, ensuring that longer distance traffic movements do not have to move from motorway to local road and back to motorway to reach their destination. The project appears to compliment the achievement of a rational functional road hierarchy for southern Sydney.

3.2 Project Alternatives and Options

3.2.1 Strategic Alternatives

Improving public transport was included as one of the six strategic alternatives although improving public transport does not specifically address any of the objectives in section 6.2 of the EIS. It is recognised however that this strategic option has been included for completeness.

The assessment of the rail freight strategic alternative is considered to be appropriate and sufficient given the nature and destination of air freight movements in particular.

It is agreed that further improvements to the existing road network would not sufficiently meet the project's objectives and could undermine some of the needs of local traffic and transport movements within the Mascot town centre area.

Demand management is not a pragmatic strategic alternative option given the need for efficient access to the airport and port as their usage grows. The demand for access cannot be contained as there are no practical strategic alternatives to the usage of the airport and the port.

Doing nothing is not a feasible strategic alternative as modelling has shown the area of influence of the project to be one of the worst performing areas in Sydney's road network in the future if congestion

issues are not addressed, coupled with the functional road hierarchy conflicts that are currently present.

It is agreed that, of the six strategic options assessed, the Sydney Gateway project is the preferred strategic alternative to meet the project objectives. However, Objective #2 could have been better met if the coverage of this strategic alternative option extended from Joyce Drive further to the east and to the Southern Cross Drive (M1) interchange

3.2.2 Corridor and Alignment Options

It is unclear as to why the corridor/alignment extents stopped at O’Riordan Street/Joyce Drive in the east. There would be some logic from a rational functional road hierarchy perspective of extending the area of consideration of the project eastwards to the M1 to also consider other improvements for efficient (access limited) movement between St Peters Interchange and Port Botany.

The preference for above ground rather than below ground works for the project is soundly based and sufficiently explained.

The discussion of the preferred corridor(s) is relatively brief and there is no mention in the evaluation criteria on project cost, which could be significantly different under the different options. Similarly, project cost is not explicitly considered in the alignment options evaluation.

3.2.3 Preferred Alignment

The reasoning behind the selection of the preferred elements of the project alignment is well described.

3.3 Project Description

The projects is comprehensively described. Key aspects that were not detailed in the EIS included:

- If there is to be a signalised pedestrian crossing across the dual left turn (out) lanes from the airport into Qantas Drive at the Seventh Avenue/Robey Street intersection as is currently provided. There was no description as to how pedestrians will access the newly constructed footpath along the western side of Seventh Avenue
- The access from Qantas Drive into the departures (Level 2) area of Terminal 2 is already congested and increasing the freedom of this entry via the removal of any signals between St Peters interchange and the entry will surely exacerbate entry congestion, particularly at the 2-to-1 lane merge where the Shiers Avenue ramp trap-lane peels off. No commentary was provided as to how to deal with this potential merge issue, or even blocking back from the Terminal 2 drop off area down the new overpass ramp and into Qantas Drive.

It was difficult to fully understand how the project will interface, affect, and be affected by the airport ground transport conditions without some presentation in the EIS of the supporting changes to the airport’s ground transport arrangements. An integrated approach was suggested to show how the airport’s ground transport plans integrate with the project’s plans to provide sufficient confidence that the project’s efficiency gains will not be undermined by queueing back into the project from the airport.

3.4 Construction Period Impacts

3.4.1 Construction Compounds

The construction compound locations and their access locations are adequately described for the expected traffic (and heavy traffic) volumes forecast to use these links. Peak period volumes were published but no data was provided regarding off peak volumes, particularly as they would be more sensitive to noise and amenity impacts near residential areas.

The estimated shortfall in construction worker parking of about 100 vehicles (10%) across multiple locations would be expected to be managed through a variety of means and there are no significant residential areas in close proximity to the sites that would be impacted by any overflow parking.

3.4.2 Active Transport

The minimum design requirements for the temporary active transport link have not been defined to ensure comparative alternatives are put in place to those which are impacted. For the temporary route through Tempe, proposed measures to provide user safety and personal security levels equivalent to the impacted route should have been identified and/or addressed and not only deferred for consideration in a future CTMP.

Temporary closures to footpaths on either side of Canal Road are proposed. This road has long sections without any controlled crossing opportunities and details should have been published for inclusion in the future CTMP as to how sufficient advanced warning will be provided or where additional temporary crossing opportunities should be provided.

3.4.3 Traffic

The proposal includes nightly closures down to a single lane of traffic in each direction on Qantas Drive to facilitate widening of Qantas Drive and the installation of utilities and drainage. It would be expected that 'nightly' refers to the hours when the airport curfew is in force. Single lane operations at other times could significantly delay access times to the airport particularly for 'busy' early morning or late evening flights.

The traffic modelling of the construction period impacts has shown a 20+ second per vehicle increase in delays at the Joyce Drive/O'Riordan Street/Sir Reginald Ansett Drive intersection in the PM peak (Nov '21 – May '22), which would be expected to be mostly felt by traffic approaching from O'Riordan Street in the way the signal timings are established there. This effect is also reflected in the two minute increase in travel time on this approach route. This effect is also similar under the period of Oct '22 – Jun '23, increasing to almost a three minutes of additional delay between Jun '23 and Dec '23. This is significant however no mitigation measures have been proposed.

The forecast will average between 2-3 minutes per vehicle. Some consideration of potential mitigation of the significant impact of construction period delays between Nov '21 and Dec '23 on the O'Riordan Street approach to the airport in the PM peak should have been included in the EIS or at least referenced in the EIS to be addressed in the future CTMP.

3.4.4 Cumulative Impacts

The cumulative impact of the construction of the Botany Rail Duplication and the closure of Robey Street and O'Riordan Street is a major issue which should influence the timing of construction of the right turn overpass into the T2/T3 terminals. Further discussion is warranted on the potential construction timing / coordination scenarios and associated options to manage this risk. The EIS defers this issue for consideration later as part of the construction management of both projects.

This issue is reinforced in Section 9.5.1 of the EIS which shows major delays ‘*when closures of Robey and O’Riordan streets would occur and detours are needed*’. The scale of these impacts suggests that some level of risk assessment and mitigation options planning should have been completed in the EIS to ensure that the issue is able to be mitigated at all. The risk is considered to be too great for this issue to be deferred to relying upon future communication and project coordination.

3.5 Traffic, Transport and Access

3.5.1 Methodologies

The ‘hierarchy’ of modelling methods used is satisfactory and consistent with the modelling approaches used for other major road projects across Sydney in recent years.

The impacts assessment has considered a number of intersections external to the airport, with most of these through Mascot. Intersection performance through Mascot town centre would be expected to be significantly improved given the removal of a large volume of through traffic, including large trucks. However, no assessment has been included for intersections within the airport immediately adjacent to the external road network, which could have a significant influence on arrival and departure patterns at the external road network.

The key intersections for assessment should have included intersections within the airport adjacent to the project.

The intersection performance outputs show the average delay at each intersection. At some locations, such as Marsh Street/M5, some high volume movements are impacted by long delays; such as the right turn into the M5 in the AM peak. These significant delays and consequential queueing issues have been ‘masked’ by only publishing average intersection delays. It would have been reasonable to also publish movement-based delays and queue lengths for any movements carrying over 900 (say) vehicles per hour.

Furthermore, queue lengths provide the reader a better ‘picture’ of the impacts and benefits of the project and a representation of peak period queue lengths would be valuable as most readers of the EIS won’t relate to an aggregate LoS rating by intersection.

3.5.2 Travel Demand and Travel Time Changes

The screenline traffic changes and the travel time changes all appear logical. What is not published however is the forecast network statistics for 2026 and 2036 without and with the project. It would have been informative to understand changes in public transport usage (especially rail usage to/from the airport) to understand broader impacts.

The EIS stated ‘*Travel times between St Peters interchange and the Sydney Airport terminals would substantially reduce with the project. In 2026, travel time improvements of up to 23 minutes would be experienced, increasing to up to 30 minutes in 2036*’. This is significant but would probably be undermined by capacity limitations getting into and out of the airport. A more pragmatic approach would have been to include the airport ground transport operations in 2026 and 2036 in the simulation modelling to understand the cumulative benefits and impacts that are likely.

3.5.3 Intersection Performance

The intersection performance results appear intuitively reasonable based on simulation modelling results. The only impacts appear to be in the AM peak, with eastbound/southbound traffic arrivals to the Ross Smith Avenue/Joyce Drive intersection not as constrained with the project, increasing arrivals at this intersection and hence increasing intersection clearance delays.

As shown in Figure 9.22 and 9.23 in the EIS, the airport approach road lengths in the simulation model only represent a short section of the internal road network which would be insufficient to appropriately model vehicle release profiles (and queue-back effects from the Qantas Drive merge) or vehicle arrival effects. In effect, traffic entering the airport ‘drops off the link’ in an unconstrained way and into the T2/T3 airport ‘zone’.

3.5.4 Other Benefits and Impacts

Reduced bus travel times, consistent with reductions in private vehicle travel times are expected benefits of the project. Impacts on parking are minimal, as expected.

The benefits for active transport through Mascot outweigh the minor and appropriately mitigated impacts to active transport immediately adjacent to the project in some places.

4. PROPONENT'S RESPONSES TO ISSUES RAISED

4.1 Overview

A number of issues were raised through DPIE to the proponent regarding the adequacy of the contents of the EIS in relation to traffic and transport matters. These issues, the proponent's responses and whether the response addresses the issue raised are summarised below, categorised by:

- Construction period issues
- Operational period issues
- Cumulative impact assessment issues

4.2 Construction Period Issues

4.2.1 Issue #1: Intersection Impacts Assessment

Issue(s): Assessment of construction traffic impacts on the Princess Highway and related intersections seems deficient. The EIS has only considered 4 major intersections for construction traffic impacts. Based on the haul routes and volumes in the Technical Paper, additional intersections should have been analysed.

Proponent's Response: *While the construction traffic impacts will be assessed under the requirements of the TTMP produced by the successful tenderer and will reflect their proposed construction program and methods. An initial estimate of these impacts can be provided based on the EIS construction vehicle generations (described in Table 5.4) and preliminary haulage routes (Table 5.2). If non-haulage construction vehicles are distributed across the network according to the prevailing traffic flows, then it can be shown that the following traffic performance is anticipated at these intersections. The following additional intersection assessment modelling results were provided.*

Intersection			DOS	Average Delay (sec)	LOS	95th% back of Queue	
						[m]	Approach
Princes Hwy_Canal Rd	0600- 0700	Base	0.87	27	C	426	Southern approach - T
		With Construction	1.02	63	E	610	Southern approach - R
	1800- 1900	Base	1.01	117	F	673	Eastern approach - L
		With Construction	1.13	291	F	1234	Southern approach - L&T
Princes Hwy_Wickham St	0600- 0700	Base	1.52	423	F	805	Western approach
		With Construction	1.69	590	F	898	Western approach
	1800- 1900	Base	0.85	50	D	167	Northern approach - T
		With Construction	0.89	53	D	212	Northern approach - L
Princes Highway_Smith St	0600- 0700	Base	0.92	39	C	515	Southern approach
		With Construction	0.99	73	F	925	Southern approach
	1800- 1900	Base	0.88	16	B	435	Northern approach - T
		With Construction	0.95	32	C	668	Northern approach - T
Botany_Gardeners	0600- 0700	Base	0.91	48	D	191	Southern approach
		With Construction	0.95	53	D	191	Southern approach
	1800- 1900	Base	1.16	126	F	353	Eastern approach
		With Construction	1.16	122	F	363	Eastern approach

Conclusion: The analysis demonstrates a key issue identified in the review that if intersections that are at LoS F in the Base Case are used with a lot more construction traffic, then delays and queues will grow substantially. This effect is shown at the key intersection of Canal Road / Princes Highway where some queues will double in length and delays increased by 3 minutes in the evening peak. This intersection is of key concern and the TTMP should specifically target minimising the usage of this intersection at peak traffic times.

4.2.2 Issue #2: Study Area Eastern Extents

Issue(s): The study area extents in Figure 6.2 in the EIS were limited to O’Riordan Street in the east and could have been extended given the importance of Port Botany access under the project.

Proponent’s Response: *The scope of the Gateway Project does not include Port Botany or upgraded connections to M1 as these are considered as part of other studies (e.g. Airport East Project). The operational modelling undertaken for the EIS is based on the area directly impacted by the Gateway Project as this area captures the majority of construction and operations impacts and all of the significant impacts. It specifically does not capture the broader connectivity and access to wider road network – these have been considered in the Strategic model that considers traffic volume impacts due the Gateway Project across the entire metropolitan area including flows on the nearby major road network.*

Conclusion: Strategic modelling alone is considered insufficient to sensitively model the impacts of unconstrained traffic arrival rates to the east on intersection impacts between O’Riordan street and the M1.

4.2.3 Issue #3: O’Riordan Street Impacts

Issue(s): The forecast construction period delays between Nov ’21 and Dec ’23 on the O’Riordan Street approach to the airport in the PM peak will average between 2-3 minutes per vehicle. The traffic modelling of the construction period impacts has shown a 20+ second per vehicle increase in delays at the Joyce Drive/O’Riordan Street/Sir Reginald Ansett Drive intersection in the PM peak (Nov ’21 – May ’22), which would be expected to be mostly felt by traffic approaching from O’Riordan Street. This is also reflected in the two minute increase in travel time on this approach route. This effect is also similar under the period of Oct ’22 – Jun ’23, increasing to almost a three minute increase between Jun ’23 and Dec ’23. Potential mitigation measures of significant impacts such as these would be reasonable to be expected to be included in the EIS.

Proponent’s Response: *TWP - 1 Table 5-20 shows that the southbound through movement from O’Riordan Street to T2/T3 is likely to result in average delays at the intersection of O’Riordan Street/ Qantas Drive/ Sir Reginald Ansett Dr of 50 seconds per vehicle during construction (noting that the 2022 baseline without construction is estimated at 35 seconds delay per vehicle). The PM Peak southbound increases in journey time during construction of 2-3 minutes are measured over a longer distance along O’Riordan Street from Gardeners Road intersection. The difference between intersection delay and increases in journey time for the southbound movement on O’Riordan Street are attributable mostly to intersection operations north of the O’Riordan Street/ Qantas Drive/ Sir Reginald Ansett Dr intersection (i.e. Riordan Street intersections with Robey, King and Bourke). The successful tenderer will provide their own construction methodology and the TTMP will provide assessments of impacts and mitigation measures required, these mitigation measures might include alternative signal phase times at the O’Riordan Street intersections to ensure better progression for T2/T3 Airport traffic.*

Conclusion: The deferral of this issue to the hope that signal timing changes in the TTMP will mitigate the impacts of these delays does not provide sufficient confidence that the issue will be mitigated.

4.2.4 Issue #4: Temporary Active Transport Link Requirements

Issue(s): The minimum requirements for the temporary active transport link have not been defined to ensure comparative alternatives are put in place to those which are impacted.

Proponent's Response: *The proposed active transport link will be designed in accordance with Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017) and relevant Australian Standards (AS) such as AS 1428.1-2009 Design for access and mobility. The active transport link will also incorporate relevant Crime Prevention Through Environmental Design (CPTED) principles. The design would provide a minimum clear width of 3.5 metres, a minimum design speed of 30 kilometres per hour for cyclists, longitudinal grades below five per cent and pedestrian fencing along the full length along the Alexandra Canal.*

Conclusion: If translated into a condition of approval, this response addresses the issue raised.

4.2.5 Issue #5: Seventh Avenue/Robey Street/Qantas Drive Intersection

Issue(s): The EIS plans did not include a signalised pedestrian crossing across the dual left turn (out) lanes from the airport into Qantas Drive at the Seventh Avenue/Robey Street intersection as is currently provided.

Proponent's Response: *A pedestrian crossing will be provided from Seventh Avenue to Robey Street. This is one of the design refinements which will be (has been) included in the responses to submissions report.*

Conclusion: This issue has been resolved.

4.3 Operational Period Issues

4.3.1 Issue #6: Integration with Airport Ground Transport

Issue(s): The EIS does not detail how airport traffic and the project interface and impact upon each other. Given the focus of the project is on better airport access, the EIS doesn't demonstrate how the project integrates and interfaces with the airport ground transport master plan, and potential upgrade works, specifically at the interface points for access to and egress from car parks and drop-off and pick up zones. Without T2/T3 ground transport changes there is the potential for traffic congestion within the airport to be exacerbated due to the project, influencing existing pinch points and generating queues back into the project.

Proponent's Response: *The 2039 Master Plan includes details of T1 and T2/T3 Five-Year Ground Transport Plan. The Master Plan and Sydney Gateway projects complement each other in terms of their integrated operational objectives and performance goals. In terms of T1, Sydney Gateway does not include any new connections into the landside precinct. However, the distribution of traffic entering and exiting the precinct would change; with a greater proportion arriving from Airport Drive. This change, in addition to a predicted increase in vehicle demands, was considered during the development of the T1 Five-Year Ground Transport Plan; which includes the following projects:*

- *Upgrade to Centre Road for additional capacity*
- *New ramp access and connections to P6/P7 and*
- *New P8 pick-up and drop-off facility, which includes direct ramp access*

By comparison, Sydney Gateway would provide direct access to the T2/T3 to improve operational capacity for both traffic entering and exiting the landside precinct. In terms of access, the new overpass would provide free-flow conditions with dedicated connections to the Ground Transport (GTI), ground floor arrivals pick-up/car park precinct and upper level departures drop-off/car park precinct. Importantly, the GTI and departures point of entry would be from the same side of the

overpass. This design feature provides flexibility to potentially displace drop-off demands into an overflow facility in the GTI during peak periods (i.e. demand management). Moreover, the GTI may include a direct exit ramp from the facility back to the adjacent road network. Hence, drop-off traffic to/from Sydney Gateway would not mix with other airport related traffic in the precinct.

The overpass would remove airport traffic (accessing the precinct) from the signalised intersections on Qantas Drive. Consequently, the T2/T3 Five-Year Ground Transport Plan also includes optimisation of the traffic lights, which would essentially rebalance green times to other movements (including the Seventh Street exit from T2/T3) and increase the operational performance for traffic passing through the intersections.

And

As part of the master planning process and the development of the T1 and T2/T3 Five-Year Ground Transport Plan and 20-Year Ground Transport Strategy, Sydney Airport commissioned an extensive microsimulation traffic modelling study to understand current traffic challenges on the roads within the terminal precincts and adjacent to the airport, and the mitigating impact of proposed improvement solutions. Microsimulation models (i.e. PTV Vissim) and static intersection models (i.e. LinSig) were developed to assess the infrastructure improvement options and changes in traffic demand. These models were used to ensure that the final ground transport solution could effectively accommodate the forecast traffic volumes.

Conclusion: The proponent's response demonstrates that some planning and modelling has been done to integrate the design of the Sydney Gateway project with the 5 year ground transport plan at the airport. It does not demonstrate however that traffic modelling has been undertaken with the Sydney Gateway project's effect on arrival flows and the T2/T3 5 year plan upgrades so the cumulative impacts and needs can be presented.

4.3.2 Issue #7: Publishing Excessive Congestion Effects

Issue(s): The intersection performance outputs show the average delay at each intersection. At some locations, such as Marsh Street/M5, some high volume movements are impacted by long delays, such as the right turn into the M5 in the AM peak. These significant delays and consequential queueing issues are 'masked' by only publishing average intersection delays. It would have been reasonable to also publish movement-based delays and queue lengths for major movements. Queue lengths provide the reader a better 'picture' of the impacts and benefits of the project and a representation of peak period queue lengths would be valuable as most readers of the EIS won't relate to an aggregate LoS rating by intersection. Average delays and queues should have also been published for major, high volume movements at each intersection to understand any excessive queueing issues.

Proponent's Response: As demonstrated in the EIS, the traffic performance under the Gateway Project shows a similar level of performance across the network generally as the existing (2018) conditions. This includes the high volume congested approaches (like at the M5/Marsh Street intersection). Queue lengths and delays are similar to those currently experienced at these congested approaches except that anticipated traffic demand growth can be accommodated by the Gateway Project rather than experiencing the substantial and widespread network-wide congestion the future Without Project scenario demonstrates. Under these very congested conditions the operational model cannot load the full traffic demands onto the network due to capacity constraints (leaving significant numbers of vehicles essentially stored outside the model area) and queue length comparisons between the With and Without Project scenarios are therefore not appropriate as a means of communicating traffic performance.

Conclusion: The response suggests that in some locations, queue lengths will be much worse, pushing traffic to beyond the extents of the model. While not an unexpected outcome, the key metric

is the unreleased traffic for specific zones associated with intersections that 'queue out'. Isolated locations have longer delays and queues from SIDRA in the project case compared to the base case and the fact that they are both LoS F should not be interpreted as meaning that the project has no impacts in these locations. The issue remains that while there are understandable overall net benefits, there will be specific intersections and movements where there will be greater impacts with the project, and that these impacts are unresolved.

4.3.3 Issue #8: Bus Priority Opportunities

Issue(s): The EIS did not include any discussion on patronage impacts and benefits to rail and bus services or the potential opportunities for bus priority improvements using relieved surface road capacity. It is noted general improvements to travel times are experienced as a result of the project due to reduced traffic volumes and that this would benefit buses.

Proponent's Response (summarised): *The Response to Submissions report clarifies that the road corridors that would be upgraded are significantly constrained by both the freight rail corridor to the north and the Sydney Airport jet base to the south. The majority of available space is required to safeguard the future performance of the local and wider road network. This would leave insufficient available space for additional bus only lanes. Adding bus only lanes would constrain road capacity for all other vehicles and be inconsistent with the objectives of the project. Transport's Sydney's Bus Future program will provide improved commuter bus access to Sydney Airport, with better east, west and south links. The program includes new bus routes and extra bus services to the airport. The program will introduce substantial improvements to bus travel times around the airport precinct. Changes to the contractual arrangements associated with the T8 Airport and South Line and stations, and additional bus routes, are outside the scope of the project.*

Conclusion: The response somewhat misses the crux of the issue raised that options for bus queue jumps on approach to the T2/T3 terminal in particular may have introduced additional benefits in the long term. It is understood that these considerations along with additional bus services may be contemplated outside of the project in the future.

4.3.4 Issue #9: Active Transport Connectivity at Link Road

Issue(s): There are concerns regarding the removal of the direct pedestrian access at Link Road. The EIS-proposed solution would require workers to travel approximately 700m – 1.5km further to access the facilities in Link Road.

Proponent's Response (summarised): *Transport has considered a pedestrian/cycle path that would connect the existing bridge over Alexandra Canal with Link Road, maintaining the existing connectivity. However, the location where the proposed road bridges would connect with Airport Drive is severely constrained by the amount the airport site available to Transport for construction, the low heights of the bridge abutments and road, the amount of subsurface foundation structures to support the proposed road and the alignments and general density of utility infrastructure. The conclusion of the assessment of the potential options, based on the concept design and considering the site constraints, indicated that the feasibility of a path connection was extremely limited. The matter was discussed with Sydney Airport Corporation during the design and EIS/MDP development. Sydney Airport Corporation have a vested interest in maintaining and improving pedestrian and cycle access to all part of the airport in accordance with commitments in the airport master plan. Sydney Airport Corporation has accepted the feasibility assessment and suggested the alternative route referred to in the EIS/MDP.*

Conclusion: This response does not address the issue raised.

4.4 Cumulative Impacts

4.4.1 Issue #10: Bus Priority Opportunities

Issue(s): There are potentially significant cumulative impacts for the construction of the Botany Rail Duplication at the same time as the project. This issue is reinforced in Section 9.5.1 of the EIS which shows major delays *‘when closures of Robey and O’Riordan streets would occur and detours are needed’*.

Proponent’s Response (summarised): *SMEC was engaged by RMS to carry out the construction and operational traffic modelling for Sydney Gateway, and the construction modelled for ARTC. They used the same model and assumptions for the cumulative impact assessment ARTC’s Robey and O’Riordan street closures. The closure of Robey and O’Riordan Streets are required by ARTC to construct the two bridges. These works would be carried out during rail possessions, which occur 4 times a year. Any works that occupy road space will have to be assessed by the successful contractor and approved by TMC. This will also be considered across the multiple on-going projects in the vicinity by Sydney Coordination Office to minimise cumulative impacts. Detailed traffic management plans will be submitted by the contractor for TMC approval before any road occupancy can take place and traffic assessments will be undertaken to support this..*

Conclusion: The response suggests that there is a way for TMC to manage this cumulative scenario later without necessarily proving now that it could be done. Significant construction period congestion risks remain associated with this cumulative impacts scenario.

5. POTENTIAL CONDITIONS OF APPROVAL

5.1 Overview

The majority of impacts and hence traffic and transport-related conditions are relevant to the construction period and most of these can be addressed through DPIE's standard condition set. The recommended conditions below focus on items that would not be covered by the Departments standard conditions set and that deal with the particular issues related to this project.

5.2 Recommendations

Suggested conditions to be attached to the approval are listed below:

- Submit a traffic and transport integration plan demonstrating how the project, once completed, will integrate with committed and planned upgrades at Sydney Airport in the short term and in the long term to:
 - Not exacerbate congestion issues within the airport which would lead to queueing back into the project and into the surrounding road network
 - Maintain or enhance pedestrian and cycling access along and to and from the airport site
 - Maintain or enhance public transport access to/from the airport identifying opportunities for bus priority measures.
- Provide the alternate pedestrian link solution as described in the EIS and agreed by Transport NSW and Sydney Airport, for pedestrian and workers access to Link Road. The alternative solution must provide a level of connectivity comparable to the existing arrangements and be constructed to the relevant design standards
- Provide a Construction Traffic Management Plan (CTMP) detailing the extent of local traffic and parking impacts generated by each construction site. The CTMP should identify impacts by time of day and day of week for each construction stage and identify specific management measures to address these impacts. The management of the impacts of heavy vehicles through congested intersections, such as Canal Road/Princes Highway, should consider how the import, stockpiling and export of fill or spoil material on-site could be scheduled to minimise external traffic movements during peak periods.
- The CTMP should:
 - Make use of microsimulation modelling to report on queues, delays and latent demand to assess network performance during key construction stages and at peak traffic times. This will allow the additional congestion costs to the community to be weighed up against the costs the project through having to schedule more out of peak delivery times so a holistic appraisal of truck movement timing strategies can be undertaken
 - Include intersection operational modelling to confirm the impacts of construction traffic on intersection performance and modify time of day operations to minimise peak period impacts where they are identified
 - Include consideration of construction period impacts at all intersection assessed in the EIS and intersections east of O'Riordan Street / Joyce Street to the M1/General Holmes Drive interchange.
 - Consider the cumulative construction period traffic and transport impacts of other construction projects in the area at the same time such as the Airport East Project and the Botany Rail Duplication project and seek to minimise cumulative delay impacts at intersections
 - Target minimising truck movements in residential areas at night time and minimising truck movements on commuter routes in peak periods

- Undertake risk assessments and identify mitigation measures at locations where lane narrowing and roadside barriers due to construction may impact on cyclist safety, and where pedestrians are exposed to greater traffic risks
- Include a contingency plan within the CTMP to adapt construction sequencing and haul routes if Robey Street and O’Riordan Street are significantly impacted by the Botany Rail Duplication closures while the Sydney Gateway project is under construction.

Appendix A: SEARs Table and EIS Review Findings



Secretary Requirements	Comment
Environmental Impact Statement	
1. <i>The EIS must include, but not necessarily be limited to, the following:</i>	
(a) an executive summary;	
(b) a description of the proposal, including key components and activities (including ancillary components and activities) required to construct and operate it, including:	
<ul style="list-style-type: none"> - the proposed route 	<ul style="list-style-type: none"> ▪ The proposed overall route and alignment of the project is well described in Section 7.1.1, supplemented with Figures 7.1 and Figure 7.2 and is sufficient for understanding the traffic and transport impacts and benefits of the project. ▪ Description also provides three main travel routes using new roadways as part of the project: <ul style="list-style-type: none"> - Between Sydney motorway network and Terminal 1 and towards M5/Princes Highway, - Between Sydney motorway network and Terminal 2/3 and towards General Holmes Drive/Port Botany - Between Terminal 1 and Terminal 2/3 ▪ Figure 1.1 and Figure 1.2 presented within Section 1.2 also provides a sufficient contextual overview of the project and the surrounding area.
<ul style="list-style-type: none"> - all surface road work upgrades including road widening, intersection treatments, partial or full road closures and bridges 	<ul style="list-style-type: none"> ▪ Proposed upgrades and changes are well described and outlined in Section 7.1.1, supplemented by Figures 7.3 to Figure 7.7, provides a detailed overview of the road alignments, indicative lane arrangements, proposed overpasses/bridges and proposed road closures as part of the project. ▪ Details of road changes and upgrades are sufficiently presented in subsequent sections (Section 7.2 to 7.9), presented by key areas. Detailed description relating to lane configuration and upgrades are included, with detailed plan view figures and sections, supplemented by 3D renders of certain aspects of the project for a visual illustration.

Secretary Requirements	Comment
<ul style="list-style-type: none"> - pedestrian and cyclist facilities including any temporary changes resulting from construction activities 	<ul style="list-style-type: none"> ▪ Proposed active transport facilities are generally well described within Section 7.9 including the 0.3km active transport link located along the western side of Alexandria Canal to maintain connections between Sydney Airport, Mascot and the Sydney CBD ▪ The two temporary ped/cycle routes that are proposed will provide satisfactory active transport links during construction. While the route alignment is well described, no specific details have been provided in relation to the width or type (shared path or separated) of temporary facilities which need to be commensurate with what has been disrupted and potential user demands. ▪ Table 8.10 provides a sufficient overview of indicative changes to pedestrian and cycle facilities as a result of construction. No details relating to detours or pedestrian management have been proposed at this stage. These details are proposed to be included in the Construction Traffic Management Plan which is satisfactory.
<ul style="list-style-type: none"> - construction and operational ancillary facilities and infrastructure 	
<ul style="list-style-type: none"> - the relationship of the proposal with existing and proposed road and freight transport services 	<ul style="list-style-type: none"> ▪ This is generally well described in section 5.1.4, although including the airport ground transport master plan projects as 'complimentary projects' under section 5.1.4 would be beneficial given their direct influence on the need for the Project. ▪ Whilst not detailed, the project presents an opportunity to introduce some bus priority for buses to access Sydney Airport and this could be explored further.
<ul style="list-style-type: none"> - all utility undertakings (relocations, augmentations, adjustments and protection works) which will be undertaken as part of the proposal 	
<ul style="list-style-type: none"> - land use changes and acquisition of privately owned, council and crown land 	
(c) a statement of the objective(s) of the project,	
(d) a summary of the strategic need for the proposal with regard to its State significance and relevant State and Australian Government policy including transport, infrastructure and land use strategies and policies, and district plans;	<ul style="list-style-type: none"> ▪ Generally, well covered but excludes specific discussion on supporting a rational functional road hierarchy in the area, which is a key benefit ▪ Does not provide sufficient detail on internal upgrades within the airport to prove that the changing arrival patterns can be absorbed on the airport without queue-back consequences.

Secretary Requirements	Comment
(e) an analysis of any feasible alternatives to the project	<ul style="list-style-type: none"> ▪ The description and the assessment of corridor strategic alternatives, corridor options and alignment options generally met the requirements of the SEARs. ▪ There was no reasoning for why the project study area did not extend as far as Southern Cross Drive (M1) in the east, which would be logical.
(f) a description of feasible options within the proposal, including the placement of any bridge piers within or in close proximity to Alexandra Canal	
(g) a description of how alternatives to and options within the proposal were analysed to inform the selection of the preferred alternative / option. The description must contain sufficient detail to enable an understanding of why the preferred alternative to and options(s) within the proposal were selected	<ul style="list-style-type: none"> ▪ A 'top down' approach used considering strategic alternatives (6 options), corridor alternatives for the preferred strategy (4 options) and then localised alignment / treatment options for the preferred corridor option. This is an appropriate methodology. ▪ There was no discussion as to why project cost was not included in any of the corridor or alignment option evaluation criteria, when it usually is for these types of evaluations. ▪ The detail on the rationale behind the scoring was limited and insufficient to understand the major differences between some options.
(h) a concise description of alternative construction methods that were analysed and preferred methods;	
(i) a concise description of the general biophysical and socio-economic environment that is likely to be impacted by the proposal (including offsite impacts). Elements of the environment that are not likely to be affected by the proposal do not need to be described	
(j) a demonstration of how the proposal design has been developed to avoid or minimise likely adverse impacts	
(k) the identification and assessment of key issues as provided in the 'Assessment of Key Issues' performance outcome	

Secretary Requirements	Comment
(l) a statement of the outcome(s) the proponent will achieve for each key issue	
(m) measures to avoid, minimise or offset impacts must be linked to the impact(s) they treat, so it is clear which measures will be applied to each impact	
(n) consideration of the interactions between measures proposed to avoid or minimise impact(s), between impacts themselves and between measures and impacts	
(o) an assessment of the cumulative impacts of the proposal taking into account other proposals that have been approved but where construction has not commenced, projects that have commenced construction, and projects that have recently been completed	<ul style="list-style-type: none"> ▪ Generally well covered with all known projects listed ▪ Given the scale of potential impacts, there was insufficient consideration of the potential cumulative impact scenarios and risk management options for the construction of the Botany Rail Duplication at the same time as the project; given the significance of the potential impacts generated. The issue was deferred for future consideration however it is of a magnitude that it should be resolved, or at least options for resolving it should be identified now.
<p>(p) statutory context of the proposal as a whole, including:</p> <ul style="list-style-type: none"> - how the project meets the provisions of the EP&A Act and EP&A Regulation; and - a list of any approvals that must be obtained under any other Act or law before the project may lawfully be carried out 	

Secretary Requirements	Comment
<p>(q) a chapter that synthesises the environmental impact assessment and provides:</p> <ul style="list-style-type: none"> - a succinct but full description of the project for which approval is sought; - a description of any uncertainties that still exist around design, construction methodologies and/or operational methodologies and how these will be resolved in the next stages of the project; - a compilation of the impacts of the project that have not been avoided; - a compilation of the proposed measures associated with each impact to avoid or minimise (through design refinements or ongoing management during construction and operation) or offset these impacts; - a compilation of the outcome(s) the proponent will achieve; and - the reasons justifying carrying out the project as proposed, having regard to the biophysical, economic and social considerations, including ecologically sustainable development and cumulative impacts 	
<p>(r) relevant project plans, drawings, diagrams in an electronic format that enables integration with mapping and other technical software.</p>	

Secretary Requirements	Comment
<p>2. The EIS must only include data and analysis that is reasonably needed to make a decision on the proposal. Relevant information must be succinctly summarised in the EIS and included in full in appendices. Irrelevant, conflicting or duplicated information must be avoided.</p>	
Transport and Traffic	
<p>1. <i>The Proponent must assess construction transport and traffic (network, vehicle (including freight traffic, pedestrian and cyclists impacts), including, but not necessarily limited to:</i></p>	
<p>(a) a considered approach to route identification and scheduling of construction vehicle movements, with particular consideration of traffic impacts and transport movements outside standard construction hours including cumulative impacts</p>	<ul style="list-style-type: none"> ▪ The EIS provides a summary of preliminary haulage routes to and from the proposed construction compounds in section 8.6.1 and 8.6.2. It is understandable that these cannot be defined explicitly at this stage of the project. ▪ Construction vehicle impacts within standard construction hours are sufficiently addressed but insufficiently addressed for after-hours volumes and impacts. The EIS focusses on peak period capacity-based LoS impacts due to increased construction and background traffic, despite the proposed scheduling of construction traffic outside of peak periods (presented in Section 9.3). ▪ There is insufficient discussion on amenity and business disruption impacts throughout the day (and possibly at night) due to the use of Holbeach Avenue and (to a lesser extent) Bellevue Street.
<p>(b) the indicative number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements)</p>	<ul style="list-style-type: none"> ▪ Construction vehicle volumes are adequately described in Section 8.6.2. Table 8.7 provides an indicative volume of general construction traffic showing light vehicle and heavy vehicle traffic volumes during AM and PM peak periods by work area. Off peak volumes are not presented. ▪ Table 8.8 provides an indicative volume of earthworks-related vehicles over the course of the project. As this would be highly dependent on the speed of earthworks, no hourly volumes are provided, which would be more beneficial to assess the cumulative impact on the road network due to total number of construction vehicles. ▪ Details relating to the sizes of construction vehicles is not provided, with only 'light vehicles' and 'heavy vehicles' provided as the description. Some clarification of the truck fleet composition expected would be beneficial in assessing impacts.

Secretary Requirements	Comment
(c) construction worker parking	<ul style="list-style-type: none"> ▪ Construction worker parking demands and associated access volumes are adequately described ▪ A shortfall in worker parking of 110 spaces (about 10%) is the worst case. This is not significant given the project location and potential for parking management schemes to address this shortfall.
(d) the nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times, pedestrians and cyclists and parking arrangements)	<ul style="list-style-type: none"> ▪ Existing traffic conditions are well described within Section 9.2, covering road network, public transport, peak traffic periods and parking etc. and heavy vehicle routes, traffic volumes and patterns along major corridors, and intersection performance (under 2018 conditions) are outlined ▪ A description of pedestrian and cycling links/facilities is also provided.
(e) access constraints and impacts on public transport, pedestrians and cyclists (infrastructure and services)	<ul style="list-style-type: none"> ▪ Impacts to public transport and active transport are provided in Section 9.3.4 and 9.3.5 respectively and are generally sufficient given that there are far more benefits than impacts. ▪ The impact and changes to pedestrian and cycle facilities are well described within Table 9.13, outlining permanent and temporary closures and resulting impacts, such as increased travel times or alternative routes. ▪ The greatest impact on pedestrians/cyclists is the closure of the Alexandria Canal Cycleway during construction, resulting in increased journey distance of approximately 580m and up to 10 minutes journey time for pedestrians. As the temporary link follows a less trafficked, and less visible route, the 'insignificant' increase in journey distance and travel time may have greater perceived impact during after-dark periods on personal safety and security, which the EIS does not consider as part of the impact assessment on active transport. The personal security and safety aspects of this diversion route should be discussed.
(f) the need to close, divert or otherwise reconfigure elements of the road, pedestrian and cycle network associated with construction of the proposal and the duration of these changes	<ul style="list-style-type: none"> ▪ Required changes and modifications to the road, and ped/cycle network due to construction are sufficiently presented in Section 8.6.5 and the indicative changes to active transport facilities are outlined in table 8.10, including facilities along Canal Road, Alexandria Canal, Qantas Drive, Robey Street, Link Road. ▪ Potential impact as a result of these changes are adequately covered in Section 9.3, and active transport networks in Table 9.13. One impact that the assessment fails to consider is the location of the temporary shared path as a replacement for the Alexandria Canal path as it will be well away from areas of after-dark activity/traffic and there may be perceived and actual personal security issues that should at least be raised / acknowledged for this alternative.

Secretary Requirements	Comment
(g) impacts to on street parking, including for residents and businesses	<ul style="list-style-type: none"> ▪ Impacts to on street parking due to construction workers is presented in Section 9.3.7, and as expected, are minimal.
(h) cumulative impacts on the road, pedestrian and cycle network from other key infrastructure proposals including but not limited to the Botany Rail Duplication and New M5	<ul style="list-style-type: none"> ▪ The Botany Rail Duplication (BRD) is expected to have the greatest impact to traffic during construction and specifically due to the temporary weekend closures of Robey Street and O’Riordan Street to facilitate bridgeworks, as described in Section 9.5.1. There would be major (possibly unacceptable) delay increases at <ul style="list-style-type: none"> ▪ Qantas Drive / Robey Street ▪ O’Riordan Street / Robey Street ▪ General Holmes Drive / Wentworth Avenue ▪ Botany Road / Wentworth Avenue ▪ To further investigate the full potential of impacts resulting from the temporary closure of Robey Street and O’Riordan Street, modelling should have included scenarios where the closures and right turn overpass works into the T2/T3 terminal (and associated ground level works) occur at the same time, presenting a worst case scenario. This would assist with identifying if any possible mitigation measures exist or whether broader consideration of the timing of these projects is required.

Secretary Requirements	Comment
<p>2. <i>The Proponent must assess and model the operational transport impacts of the project including, but not necessarily limited to:</i></p>	
<p>(a) forecast travel demand and road traffic volumes for the proposal and the surrounding road, airport, freight, port, cycle and public transport network</p>	<ul style="list-style-type: none"> ▪ Forecast travel demand is presented in Section 9.4.1. No network statistics (VKT, VHT, modal share etc.) data is presented and it should be to compare the Do Minimum case with the Project Case. ▪ No discussion is included as to how airport traffic forecasts were determined/calculated as a key input into strategic modelling and then operational modelling.
<p>(b) travel time analysis for the different road transport modes</p>	<ul style="list-style-type: none"> ▪ Overall, the travel time analysis is well described within Section 9.4.2 for most key routes and shows substantial travel time reductions through Mascot as a result of the project for traffic and buses. ▪ The travel times do not include effects of getting into and out of the airport (but should) which could reduce the relative benefits of the project.
<p>(c) performance of key interchanges and intersections by undertaking a level of service analysis at key locations</p>	<ul style="list-style-type: none"> ▪ This is generally well covered in Section 9.4.3, primarily focussing on average delay and Level of Service at 21 key intersections within the project area and the wider study area. ▪ Queue length outputs would also benefit the reader in understanding queueing patterns and 'winners and losers' due to the project. ▪ To better comprehend the project's benefits compared to existing conditions, it is suggested that year 2018 average delay by intersection is published in the same tables as that reporting year 2026 and year 2036 results.

Secretary Requirements	Comment
<p>(d) wider transport interactions (local and regional roads, cycling, public transport, airport, port and freight transport)</p>	<ul style="list-style-type: none"> ▪ There is no commentary on the patronage impacts on the <i>AirportLink</i>. The reduction in public transport usage between 2016, 2026 and 2036 should be commented on in the EIS for the base case and the project case. ▪ It seems that the operational modelling without and with the project in 2026 and 2036 has assumed that the entry into the T2/T3 terminal (Sir Reginald Ansett Drive) is unconstrained. Some assessment or statement regarding the ability of the airport's internal road system to absorb the forecast increases in arrival flows is needed to provide reassurance that queues in practice will not spill out of the airport and back through the Qantas Drive / Joyce Drive / O'Riordan Street intersections thereby undermining the benefits claimed. ▪ Merging and diverging delays are a significant impact associated with the project. Queue plots/pictures from the operational (simulation) model will assist in understanding the consequences of these impacts as the LoS definitions are insufficient to understand this. Also, there is no evidence that the proposed mitigation measures (e.g. "Smart motorway systems") to deal with merging and diverging point flow breakdown will mitigate the issue and this evidence should be provided either through simulation modelling outputs or first principles calculations. ▪ No discussion is provided on the active transport demands associated with airport employees and hence the benefits of the project including east-west active transport connections and better connections across Airport Drive to cater for active transport access to/from the international and domestic terminal buildings.
<p>(e) induced traffic and operational implications for public transport (particularly with respect to strategic bus corridors and bus routes) and consideration of opportunities to improve public transport</p>	<ul style="list-style-type: none"> ▪ A comparison of travel time along a number of bus route corridors is provided in Section 9.4.2 and shows a general improvement with the project in future year scenarios ▪ Bus priority opportunities provided by relieved capacity in the traffic network are not discussed and it would be relevant to explore these opportunities in the EIS even if they are not part of the project definition.

Secretary Requirements	Comment
(f) property and business access and on-street parking	<ul style="list-style-type: none"> ▪ This is adequately covered in section 9.4.9. The project is not expected to negatively impact on-street parking and local business access as the project area is located along an arterial corridor (Qantas Drive / Airport Drive). ▪ A majority of business accesses impacted by the project are located within Airport land, such as the Freight Terminal, employee parking (northern lands). Alternative accesses are provided as part of the project and are therefore maintained at the expense of increased travel times for some locations.
Place Making and Urban Design	
3. <i>The Proponent must identify how functional 'place' outcomes of public benefit would be achieved, including design principles and strategies that.</i>	
(b) identify areas of reduced traffic volumes and reduction of traffic permeation, particularly in and around commercial and community centres	<ul style="list-style-type: none"> ▪ Expected traffic reductions in and around commercial and community centres are adequately presented in Section 7.12.2, and Chapter 9 and more comprehensively in the Traffic and Transport Technical Paper.
4. <i>The Proponent must describe the accessibility elements of the proposal including relevant accessibility legislation and guidelines, including:</i>	
(a) Impacts on public transport infrastructure and services	<ul style="list-style-type: none"> ▪ Relevant guidelines / requirements and impacts on accessibility surrounding public transport infrastructure are not specified within the EIS (Section 9.3.4 (construction stage) and Section 9.4.6 (operation stage) but are not considered to be directly relevant to the project in any case.

Secretary Requirements	Comment
<p>(b) impacts on cyclists and pedestrian access, amenity and safety across and adjoining the proposal, including the relocation of cycle routes and delivery of new cycleways around the airport and Alexandra Canal.</p>	<ul style="list-style-type: none"> ▪ The indicative temporary active transport link route is provided in Section 7.9. ▪ The design requirement of the proposed temporary active transport link including crime prevention through environmental design principals and the <i>Disability Discrimination Act 1992</i> are covered under Section 7.12, ▪ Section 8.6.5 makes reference to <i>All pedestrian and cyclist facilities and adjustments would be conducted in accordance with relevant accessibility requirements and legislation, including the Disability Discrimination Act 1992</i>, and describes changes to pedestrian travel times in Section 9.3.5. ▪ Further discussion on the existing nature or constraints of the proposed route, the perceived and actual personal security on the proposed shared path through Tempe and detailed measures to maintain or improve accessibility and safety would be beneficial. ▪ Further detail related to the section of temporary shared path through the construction area (near Nigel Love Bridge) should be provided. The current description only mentions the use of box culverts through the work area.