SMEDLEY
TECHNICAL & STRATEGIC

In the matter of the Melbourne Metro Rail Project

Planning Panels Victoria

Proponent: Melbourne Metro Rail Authority

Expert Witness Statement of Shaun Smedley

Expert of Melbourne Metro Rail Authority

1 Name and address

1. Shaun Smedley of 28 Monmouth Street, Newport VIC 3015

2 Qualifications and experience

2. Appendix A contains a statement detailing my qualifications and expertise and addressing the matters set out within Planning Panels Victoria's Guide to Expert Evidence.

3 Scope

3.1 Role in Preparation of the EES

3. I was engaged by Herbert Smith Freehills (HSF), on behalf of the Melbourne Metro Rail Authority (MMRA), to undertake a technical peer review of the Melbourne Metro Rail Project (MMRP) Environment Effects Statement (EES) Transport Impact Assessment Report (TIAR).
4. This peer review focused on the process, methodology and assessment undertaken to validate that the TIAR addressed the requirements of the EES Scoping Requirements and so was suitable to represent the impacts of the project. This was a high-level review only, not a detailed 'forensic' review of the analysis.
5. The peer review focused on the appropriateness of the transport models chosen and how they were used to inform the assessment. The review did not undertake a detailed assessment of the traffic modelling itself, as noted in the reports, these models have been reviewed by numerous parties including VicRoads, PTV and independent reviewers appointed by MMRA.
6. Since that initial review I have been engaged by HSF to act as an expert witness covering the issues and topics related to transport impacts. To fulfill that role, I have now undertaken a more detailed and comprehensive review of the TIAR. This review involved more detailed review, analysis and interrogation of the TIAR and analysis contained within. I have also met with representatives from MMRA and the AJM JV to further my understanding of the project and the analysis undertaken.
7. It is also worth noting that in undertaking my previous peer review I met with representatives from Advisian (the construction advisor to MMRA) to have a greater understanding on how the truck volumes were developed.

3.2 Instructions

8. My instructions to prepare this witness statement are set out in Appendix A.

3.3 Process and Methodology

9. I have undertaken a review of the following documents and provided my opinions on the significant issues based on my engineering experience and judgement:
    a. Melbourne Metro Rail Project EES, Chapter 8;
    b. Melbourne Metro Rail Project, MMR-AJM-PWAA-RP-NN-000815, Transport Impact Assessment, Melbourne Metro Rail Authority, AJM JV, 20 April 2016, Revision C1, **(TIAR)**;
    c. Technical Notes 001 to 018;
    d. Technical Notes 019 to 021;
    e. Technical Note 026; and
    f. EES Submissions as outlined in Section 4.3 below.
10. The review and my opinions have at all times considered the EES Scoping Requirements and Draft EES evaluation objectives, being:

    Draft EES evaluation objective – Transport Connectivity - *To enable a significant increase in the capacity of the metropolitan rail network and provide multimodal connections, while adequately managing effects of the works on the broader transport network, both during and after the construction of the project.*
11. The review and the opinions provided are focussed on my area of expertise, being the road (and associated) transport network. This review has not considered the issues or interactions of rail occupations or changes to the rail operations themselves.

4 Findings

4.1 Summary of TIAR

12. The TIAR has focussed on understanding the impacts of the project in two discrete phases:
    a. the operational (or legacy phase) once the project is open and operating; and
    b. the construction phase, while works are being carried out to build the project.
13. The TIAR provides an overview of the key drivers for the Melbourne Metro Project, which includes the need to respond to the growth on Melbourne's most heavily congested rail lines and to enable the opportunity for independent line operations on the metropolitan rail network.

Precinct Overview

14. The impacts of the project are spread across nine precincts. Each precinct contains a construction worksite, and typically this worksite is related to either the tunnel portal excavation, tunnel station construction or the rail interfaces with the existing rail network. A brief outline of each precinct and the construction tasks related to the concept design are provided:
    a. Precinct 1 – For the TIAR, this precinct covers two areas related to emergency access structures for the tunnels. The two areas are at

Fawkner Park and Linlithgow Avenue. Each area has two options for the location of the emergency access structures, which will ultimately depend on the final design.

b. Precinct 2 – The Western Portal is a major construction site that will be located on Hobsons Road in South Kensington. There are two options for the construction of the Western Portal, with the alternative design moving the structure and tunnel portal further to the west reducing the impact on South Kensington Station. It is understood that the TBM would require extraction at this location.

c. Precinct 3 – Arden Station is a major construction worksite. This precinct is a worksite to build the Arden Station, but is also a staging and storage area for the works with concrete batching plants and spoil handling facilities.

d. Precinct 4 – Parkville Station includes a new station under the Grattan Street road reserve. During construction, Grattan Street will be closed to general traffic as the station will be constructed using a cut and cover method. An underground pedestrian connection across Royal Parade will also be constructed.

e. Precinct 5 – CBD North Station is located beneath Swanston Street between La Trobe Street and just north of Franklin Street. The station will be constructed using the mined cavern construction method. A number of roads adjacent to the construction site will be used as construction work areas which will require the closure of Franklin Street to the east of Swanston Street.

f. Precinct 6 – CBD South Station is mainly located beneath Swanston Street, but will also be partially under Flinders Street and Collins Street. The station will be constructed using the mined cavern construction method. The construction of an underground pedestrian connection to Flinders Street Station will require the temporary closure of Flinders Street due to the cut and cover construction method being used. Underground connections between CBD South Station and Federation Square would be undertaken by using mined tunnel connections and therefore would not require any closures of Flinders Street. However, I now understand from Technical Note 013 that closure of westbound lanes on Flinders Street is being considered to construct the Federation Square access to the CBD South station. I have addressed this issue later in my statement.

g. Precinct 7 – Domain Station is located under St Kilda Road adjacent to Albert Road and Domain Road. The station will be constructed using the cut and cover method, which will require the closure of Domain Road resulting in the re-routing of tram route 8 via Toorak Road. The number of traffic lanes along St Kilda Road will be reduced during construction, although tram and bicycle facilities will be maintained throughout the entire construction period. It is expected that the Domain site will involve the TBM launch and retrieval operations for the southern end of the tunnelling works.

h. Precinct 8 – Eastern Portal construction site will be accessed via a construction vehicle access bridge that will be built off Osborne Street in South Yarra. The works will result in the William Street Bridge being closed to local traffic for the duration of the works.

i. Precinct 9 – Western Turnback is within the existing rail reserve in West Footscray. The works include a third platform and track at West Footscray Station.

15. An initial risk assessment for each impact pathway was undertaken, which describes the potential risk associated with the Melbourne Metro if project specific mitigations are not deployed. This assessment was undertaken for impacts during construction and operation.

    a. The majority of precincts had initial impact risk ratings of either medium or high during construction. Only two of the eight risk categories were rated as low.

    b. During operation, Precinct 4 – Parkville Station, Precinct 5 – CBD North, Prenict 6 – CBD South and Precinct 7 – Domain Station had a medium rating. All other precincts were rating as low or very low.

Construction Traffic Assumptions

16. Each of the precincts will generate a significant volume of construction traffic to and from the sites. A brief outline of the construction traffic for each precincts are provided in Table 1. These truck estimates include construction traffic related to the spoil handling, the concrete delivery and the associated materials and equipment.

Table 1 – Construction Traffic Estimate

Location	Average Daily Truck Movements	Peak Daily Truck Movements
Precinct 1 – Tunnels Linlithgow Avenue Shaft	20	21
Precinct 1 – Tunnels Fawkner Park Shaft	20	20
Precinct 2 – Western Portal	50	62
Precinct 3 – Arden Station	260	364
Precinct 4 – Parkville Station	100	140
Precinct 5 – CBD North	150	210
Precinct 6 – CBD South	150	210
Precinct 7 – Domain Station	170	224
Precinct 8 – Eastern Portal	50	62
Precinct 9 – Western Turnback	None stated	None stated

- This table is based on the volumes provided in the TIAR section 8, notably table 8-2, 8-7 and table 8-32. This assumes that the TBM operations are at Domain only and not at Fawkner Park.

17. While the overall construction truck traffic volumes are large (in the order of 1,300 truck trips per day in the peak construction phases) these numbers are dispersed across a number of the sites and across the day, thereby diluting the extent of impacts on most areas.

18. To undertake the assessment, the TIAR has collected a significant amount of base transport network data (contained in Appendix B of the TIAR). This data has been used to establish a base line of conditions and inform the development and calibration/validation of the range of transport models.

19. The data collected covers the range of transport modes available:

    a. On-road vehicles - cars and trucks, including an understanding of car parking etc;

    b. Public transport – Trams and Buses; and

    c. Active Transport – Pedestrians and Cyclists.

20. In my opinion the nature and quantity of the base line data was generally appropriate. However, there were two key areas where I have requested further base data, Franklin Street and for truck volumes in the Arden Precinct.

Transport Modelling of Construction and Legacy Scenarios

21. Four types of transport modelling have been undertaken for the project:

    a. VITM – Strategic modelling looking at broad changes across the metropolitan area. This model has been used to inform expected demands at each site.

    b. AIMSUM – A hybrid simulation modelling package that can assess a broad area, similar to a strategic model, or a more detailed area, similar to a microscopic model. This model has been used to evaluate the impacts of the project through travel time and delay assessments at the Parkville Precinct.

    c. VISSIM – Microsimulation that assesses individual vehicles or people in the network and their interaction with each other and traffic control devices, such as intersections and traffic signals. This model has been used to evaluate the impacts of the project through travel time and delay assessments at the Domain Precinct.

    d. SIDRA – An intersection assessment package that can assess intersection performance by lane and approach. This model has been used to assess the performance of individual intersections across the project, most notably in the CBD sites.

22. I support the use of these models and the ways in which they were used to analyse the impacts of the project. Care should be taken when reviewing specific and detailed outputs from VITM. Being a strategic model, it is best used for broad level assessments, higher level changes in demand and route choice.

23. Transport modelling has assessed the precincts prior to construction, during the peak activity of construction and post construction in the legacy state of the project.

Construction Impacts Summary

24. Different transport models were used at each precinct depending on the volume of construction vehicles generated by the precinct, existing traffic volumes and the area likely to be impacted by the works. An outline of the package used and the impacts for each precinct are provided:

a. Precinct 1 – Tunnels. Detailed modelling of this precinct was not undertaken due to low volumes of forecast construction vehicles and limited direct impacts on the transport network. The assessment of construction activities showed that the impact was likely to be minimal at both the Fawkner Park and Linlithgow sites.

b. Precinct 2 – Western Portal. Detailed modelling of this precinct was not undertaken due to the spare capacity in the surrounding network to accommodate the forecast volume of construction vehicles. The assessment of construction activities showed that the impact was likely to be minimal. Alternate access would need to be available to access the 50 Lloyd Street Business Estate, but this is anticipated to have a minimal impact on the capacity or functionality of the access roads.

c. Precinct 3 – Arden Station. Detailed modelling of this precinct was not undertaken. It is believed that there is sufficient capacity in the surrounding network to accommodate the forecast volume of construction vehicles and that the area already accommodates similar levels of trucks, many of which would be replaced with the construction related trucks. While the forecast construction volumes are the highest of all the construction precincts, a number of haulage routes to the Arden site are available and therefore construction vehicles should be dispersed reducing their impact. The assessment of construction activities showed that the impact was likely to be minimal.

d. Precinct 4 – Parkville Station. VITM and AIMSUN modelling packages have been used to assess the impacts of the construction activities at Parkville due to the proposed closure of Grattan Street and the need for diversion routes around the site. VITM was used to forecast the changes in traffic volumes due to the works, while AIMSUN was used to perform travel time and intersection assessments. The modelling showed that the diversion of traffic around the site would have impacts on a number of roads and intersections, with critical locations being College Crescent. Swanston Street and the Haymarket Roundabout. These locations would experience increased traffic volumes and delays due to the works. Public transport routes would also experience increased travel times due to the works.

e. Precinct 5 – CBD North. SIDRA modelling package has been used to assess the impacts of construction activities at the CBD North site. This package shows intersection performance and any increased delays due to the construction works. A number of diversion routes were assessed based on the likely redistribution of traffic around the closure of Franklin Street and the construction site. The modelling showed that the AM peak is the critical time period, with the intersection of Swanston Street and Victoria Street forecast to operate beyond its capacity, and the intersection of Swanston Street and La Trobe Street operating just over a degree of saturation of 0.9 due to the works. While these intersections will be operating beyond their optimal level, the forecast intersection delay is 34 seconds or lower, which is considered acceptable for an inner city signalised intersection.

f. Precinct 6 – CBD South. While SIDRA modelling has been performed to assess the existing conditions of the intersections surrounding the CBD South site, no detailed modelling has been performed of the construction impacts. The most significant impacts related to these works are the full or partial closures of Flinders Street. This is analysed further in Technical Notes 020 and 021.

g. Precinct 7 – Domain Station. VITM and VISSIM modelling packages have been used to assess the impacts of the construction activities at Domain due to the proposed closure of Domain Road, the reduction of capacity along St Kilda Road and the need for diversion routes around the site. VITM was used to forecast the changes in traffic volumes due to the works, while VISSIM was used to perform travel time and intersection assessments. The modelling showed that there is forecast to be high levels of diversion around the worksite due to the closures, as well as implementation of transport management measures. The modelling showed that that there was minimal impact on the road network due to the construction activities. The closure of Domain Road would also require the re-routing of tram route 8 along Toorak Road.

h. Precinct 8 – Eastern Portal. Detailed modelling of this precinct was not undertaken due to low volumes on construction related traffic and the minimal changes to the network. The works would require the closure of the William Street Bridge to traffic for the duration of the works, however suitable alternative routes existing. The assessment of construction activities showed that the impact was likely to be minimal.

i. Precinct 9 – Western Turnback. Detailed modelling of this precinct was not undertaken as the majority of the works occur within the rail corridor.

25. The methods of assessment and the modelling packages used at the precincts is considered appropriate. I generally agree with the findings of this analysis. I have outlined further consideration of these findings in Section 4.2.

26. The initial risk assessment during construction was reviewed taking into consideration of the Environmental Performance Requirements for each of the precincts.

a. The precincts that were initially rated as high have a residual risk of medium due to the Environmental Performance Requirements.

b. Due to the Environmental Performance Requirements for construction, four of the eight risk categories were rated as low.

Legacy Impacts Summary

27. The performance of the legacy state of the road network was undertaken for each precinct. An outline of the legacy network performance for each precinct is provided:

a. Precinct 1 – Tunnels. There is no legacy impact to the surrounding road network due to works within the tunnels precinct.

b. Precinct 2 – Western Portal. The overall performance of the surrounding road network is not forecast to be impacted by the works. There will be minor changes to car parking provision, and the shared path along Childers Street will be relocated.

c. Precinct 3 – Arden Station. There are no legacy impacts to the surrounding road network due to the works in the Arden Precinct.

d. Precinct 4 – Parkville Station. There will be some impacts around the Parkville Precinct, mainly due to the reduction of Grattan Street down to a single lane and the restriction of some turning movements along Royal Parade due to the proposed locations of new tram stops. This reduction in capacity results in extended queuing, which can block upstream intersections if not appropriately managed or mitigated.

e. Precinct 5 – CBD North. There will be some impacts around the CBD North Precinct, mainly due to the closure of Franklin Street between

Swanston Street and Victoria Street. The intersections of Swanston Street / La Trobe Street and Swanston Street / Victoria Street are forecast to operate slightly beyond their capacity in the AM peak period resulting in slightly longer delays and queues. I note from Technical Note 012 that there is now scope for Franklin Street to remain open in the Legacy phase. I have provided comment on this in Section 4.4.

f. Precinct 6 – CBD South. There are no legacy impacts to the surrounding road network due to the works in the CBD South Precinct.

g. Precinct 7 – Domain Station. There will be some impacts around the Domain Precinct, mainly due to the reconfiguration of St Kilda Road with only two lanes provided in each direction (and the potential for an additional lane in the peak hours with clearways). The modelling shows that St Kilda Road will operate with only minor increases in delays. Albert Road south will also be closed due to the location of the station. This closure will place additional pressure on Albert Street north and the reconfigured intersection with St Kilda Road. Modelling has shown that delays here will increase significantly in both peak periods without mitigation treatments or changes in travel patterns.

h. Precinct 8 – Eastern Portal. There are no legacy impacts to the surrounding road network due to the works in the Eastern Portal Precinct.

i. Precinct 9 – Western Turnback. There are no legacy impacts to the surrounding road network due to the works in the Western Turnback Precinct.

28. The initial risk assessment during operation/legacy was reviewed taking into consideration the Environmental Performance Requirements for each of the precincts.

29. The impacts for all of the precincts were rated as low or very low due to the Environmental Performance Requirements. I support this risk rating for the legacy phase of the project.

4.2 Summary of My Opinions

30. I have reviewed the reports and documents outlined above in preparing this expert witness statement.

31. Save where otherwise indicated I support the findings in the TIAR.

32. The majority of the references in my findings will relate to the TIAR, rather than Chapter 8 of the EES, as generally Chapter 8 is a summation of the TIAR. My commentary on the Environmental Performance Requirements is based on those listed in Chapter 8 of the EES.

4.2.1 Overview

33. In my opinion the Melbourne Metro Rail Project (**MMRP**) will provide significant benefit to Melbourne through the release of capacity in the City Loop, the provision of new and upgraded stations and the improved service reliability and frequency.

34. However, my evidence in this report is focussed on the impacts of the MMRP to the transport network, rather than the long term benefits of the project.

35. The transport related impacts of the MMRP are categorised into two phases:

a. The construction phase; and

b. The operational phase.

36. As outlined in the TIAR, the majority of the impacts of the MMRP occur during the construction phase. While there are a range of operational phase impacts, these can be managed to have a minimal impact on the transport network.

37. In my opinion the TIAR provides a good basis to understand and, where appropriate, quantify these potential impacts. In the following sections I have highlighted or discussed impacts as outlined in the TIAR where I believe they are worthy of further discussion.

4.2.2 Construction Phase Impacts

General

38. The TIAR states that the assessment and modelling has not considered the impact of the construction workforce. While this is not a typical approach for a TIAR, I agree overall with the comments and assessment presented in the TIAR about the implications of construction workforce vehicle movements.

39. While the total construction workforce is estimated at around 1,440 workers, they are expected to be dispersed across a number of worksites across the project. The Arden and Domain sites are expected to have the highest workforce number, with a peak of 421 and 289 workers respectively. The local transport impacts are not expected to be significant, as these workforce numbers are spread across the various shift arrangements at those two sites which typically avoid the transport network AM and PM peak periods to avoid the congestion. Every effort should be made to minimise the impact to car parking supply, and the workforce should not use on-street car parks wherever possible to limit the localised impacts.

40. Overall, I believe that the impact of the estimated workforce on the transport network is likely to be negligible.

Precinct 1: Tunnels

41. Section 8.4.5 outlines the Active Transport Impacts as a result of the emergency access structure construction. This section makes no reference to impacts on the Tan Track, a significant recreational running track around the Botanical Gardens in Melbourne. It appears that the track is likely to run through or adjacent to the construction site partially required for the alternative design option at Tom's Block. Special provision should be made to maintain ease of movement along this track or a suitable alternative alignment should be developed during construction. A change to the Environmental Performance Requirement is suggested to address this.

Precinct 2: Western Portal

42. As noted, there are two design options at this location. The Concept Design (Option A) positions the tunnel portal on the southern side of Childers Street, directly to the east of South Kensington Station, while the Alternative Concept Design (Option B) is located about 150 metres further West.

43. Option A has more road network limitations, in that it impacts on direct access to the 50 Lloyd Street Business Estate at the western end, due to the closure of Childers Street. Option B may allow for these movements to still occur. I am satisfied that the impacts of both options on the road network are acceptable if appropriately managed.

44. Technical Note 009 provides further information regarding over-height vehicles access into the business park at 50 Lloyd Street that would be required for Option

A to allow these vehicles to access the business park. The solutions offered at this location are appropriate in my opinion.

Precinct 3: Arden Station

45. The Arden site, as one of the main construction and staging sites for the project, is expected to experience the highest volumes of construction truck traffic across the precincts. The estimate is that the average daily truck volumes will be around 260, while it may peak at up to 364 trucks a day. While this number may appear significant, when spread across the day it is likely to have a minimal impact on the network. Although this site and the truck access is expected to be a 24/7 operation, even if these truck movements were limited to 12 hours per day, this is would equate to around 30 trucks per hour, one every two minutes. This impact could be further dispersed by using multiple routes to access the site.

46. One further consideration with respect to this site is that I understand that this area is subject to heavy truck traffic today due to the current range of truck dependent businesses within that site, which will be removed/relocated with these works. I have requested further truck traffic data to support my understanding.

47. There are a range of potential truck haulage routes identified in the TIAR. I do not support the selection of Route 1 as the circuitous nature and localised land use are not conducive to construction truck traffic.

Precinct 4: Parkville Station

48. The analysis for this precinct is appropriate and highlights several areas where congestion is likely to occur during the construction period. The TIAR includes the following commentary in section 8.7.3 under the heading intersection analysis:

> *"In the AM peak period, the closure of Grattan Street is predicted to cause the majority of the vehicles to reroute via Swanston Street and Queensberry Street. Swanston Street currently does not have the capacity to accommodate this increase in traffic, and thus would likely be a key congestion point. The congestion on Swanston Street may cause further congestion along College Crescent towards Royal Parade. With College Crescent already congested, the number of vehicles travelling along Royal Parade southbound is also expected to reduce, improving the performance of some of the intersections within the modelled area…..*
>
> *……..*
>
> *In the PM peak period, additional congestion is expected around the Haymarket roundabout. The congestion at Haymarket is expected to spread further south along Elizabeth Street and Peel Street northbound. Major delays are also predicted along College Crescent and Swanston Street because of a bottleneck in the general Swanston Street area."*

49. I support these comments, although further quantification of these impacts would be of value. This issue was raised in my Peer Review appended to the TIAR, and is addressed further in Technical Note 020. My comments about the Technical Note are set out in Section 4.4 of my statement.

50. In my peer review I also noted concerns around the impacts to the bus routes 401 and 402 in this area. This concern was related to the additional travel times for those services being in the order of 4 minutes. I believe this is a significant impact to those services and every effort should be made to minimise these impacts either through re-routing these services or other mitigation treatments. I have provided further commentary on this issue in Section 4.4 and 4.5.

Precinct 5: CBD North Station

51. For clarity, I believe that the second intersection in Table 8-24 should be labelled as Swanston Street / Franklin Street and the four approach rows should read Swanston Street (N), Franklin Street (E), Swanston Street (S) and Franklin Street (W). This appears to be a typographical error. The data in the table is correct, as can been seen when comparing this table with Tables 5-13 and 5-14 in Appendix D of the TIAR, the Transport Modelling Summary Report.

52. The TIAR suggests that to accommodate the closure of Franklin Street during construction, modifications will need to be made to provide for the increased volumes at the Swanston / Victoria Streets intersection and along La Trobe Street. Some modifications are as simple as signal phasing, while others such as clearways on La Trobe Street and turn bans may be more disruptive to existing users of the network. In my opinion, these changes are justified to accommodate the temporary construction impacts of a project of this scale. The information provided on the Sydney Light Rail project example in Section 4.2.4 is appropriate to consider in this context.

53. Existing traffic volumes for Franklin Street have been requested. These are provided in Technical Note 026. After reviewing the volumes provided in that technical note and the analysis provided in the TIAR, I am satisfied that these volumes can be accommodated through the various alternative routes and mitigation measures proposed.

Precinct 6: CBD South Station

54. Generally, the TIAR's analysis of the transport network related impacts due to the construction in the CBD South Precinct is sound and I believe that the impacts described are acceptable. I acknowledge there is a significant volume of pedestrian movements and public transport services which will need to be accommodated. I am confident that this can be appropriately managed pursuant to the Environmental Performance Requirements. However, one potential item of significance is the proposal for cut and cover techniques to be used across Flinders Street. The TIAR states that this would require the closure of Flinders Street, west of Swanston Street, in both directions for 4-6 weeks. Technical Note 020 contemplates a longer closure period of up to 12 weeks.

55. There is no analysis or quantification of this impact. This issue was raised in my previous Peer Review and is addressed further in Technical Note 020. My response to that document is set out in Section 4.4 of my statement.

56. Also Technical Notes 013 and 021 raise issues related to this location. My comments on these Technical Notes are presented in Section 4.4 of my statement.

Precinct 7: Domain Station

57. There are many changes at this precinct which will impact on the transport network, including the closure of the western end of Domain Road. Many of these impacts can be adequately managed with appropriate staging, alternative routes and the management of continued access for pedestrians, cyclists and public transport.

58. One of the more significant impacts in this precinct is the reduction in the St Kilda Road cross section down to one lane in each direction past the construction site for a period of 18 months. This will require very careful management during this construction phase, with a range of mitigation treatments likely to be required to ensure impacts are minimised.

59. It is understood that alternatives were considered at this location, such as keeping two lanes open, but these would have significantly extended the duration of the works and so drawn out the period of congestion and disruption. It is

understood that many stakeholders were consulted and it was determined that the most appropriate way to undertake these works was to get this phase of the construction over as quickly as possible. This requires the partial closure of St Kilda Road to one lane in each direction.

60. The TIAR has analysed this outcome and using the transport model VITM, the TIAR estimates that during the AM peak, around 1,000 vehicles an hour will divert away from this site. If this modelling assumption is correct, the travel time and delay analysis indicates that it would operate at satisfactory levels. It does also note that further works are required on the diversion routes to accommodate the displaced traffic.

61. A robust and comprehensive travel demand management strategy will need to be successfully implemented if that full volume of 1,000 vehicles per hour is to divert from this location.

62. However, if not all of that traffic can be diverted as the model predicts, then the delays through this area are likely to be more significant. In my peer review I suggested that sensitivity testing be undertaken to understand the impacts if less than the assumed 1,000 vehicles were to divert from St Kilda Road. This testing would assist in understanding what the congestion may be like if the anticipated levels of traffic do not divert, or if it takes a longer period of time for the travel demand management strategy to take effect (and therefore experience congestion in the short term).

63. I note that Technical Note 020 is intended to address these issues. My comments on this Technical Note are set out in Section 4.4 of my statement.

Precinct 8: Eastern Portal

64. It is noted in Section 7.9.1 that the William Street bridge would not be available for local traffic during the construction of the eastern portal works. While this closure may be inconvenient, there are reasonable diversion / detour routes available.

Precinct 9: Western Turnback

65. There is expected to be minimal construction related impacts to the transport network related to the construction of the Western Turnback.

4.2.3 Operational (Legacy) Phase Impacts

Precinct 2: Western Portal

66. Two options are provided at this precinct. Both are suitable outcomes, with the alternative option more preferable from a transport impact perspective as it moves any impacts further from the 50 Lloyd Street Business Estate and from South Kensington Station.

Precinct 3: Arden Station

67. There are no significant legacy issues at Arden. The project is expected to significantly change the transport characteristics of this area, however these are all expected to improve the transport network and connectivity.

Precinct 4: Parkville Station

68. The legacy state issue in the Parkville precinct is the permanent reduction of Grattan Street to one lane in each direction. As stated in the TIAR, this is likely to increase traffic on alternative routes. The increases are not expected to be significant and appropriate mitigation measures may be developed to further reduce these impacts. The Environmental Performance Requirement for the Road Transport (Operation Phase) appropriately requires “Optimal design of the

road network around Grattan Street associated with the changed demands and network changes on Grattan Street and Royal Parade / Elizabeth Street."

Precinct 5: CBD North Station

69. The only significant operational phase issue here is related to the closure of Franklin Street between Victoria Street and Swanston Street. I support the analysis and assessment in the TIAR that indicates this change is likely to be able to be readily accommodated in the network without significant impact. The intersection analysis does indicate that some movements are operating at a high degree of saturation, however this is to be expected at a central CBD intersection such as this.

70. Technical Note 012 is also related to this area and appears to mitigate these impacts. Commentary is provided on this below.

Precinct 6: CBD South Station

71. There are large changes to the pedestrian volumes and flows through this precinct as a result of the project. However, with appropriate design as required by the Environmental Performance Requirements, these should all be appropriately managed.

Precinct 7: Domain Station

72. The operational phase configuration at Domain Station reduces the current capacity from three lanes down to two lanes around the interchange. As noted in the TIAR and my peer review document, clearways can be implemented during peak periods to provide the additional third lane as required.

73. Albert Road south will also be closed due to the location of the station. This closure will place additional pressure on Albert Road north and the reconfigured intersection with St Kilda Road. Modelling has shown that delays here will increase in both peak periods.

Precinct 8: Eastern Portal

74. No issues of note

Precinct 9: Western Turnback

75. No issues of note

4.2.4 Other Relevant Examples – Sydney Light Rail

76. To further understand how the impacts of this project could be appropriately managed, I sought to understand how recent projects with similar impacts had been managed elsewhere in Australia.

77. I believe that the Sydney Light Rail project is an appropriate example in this respect. This project involves the development of a light rail network in the Sydney CBD extending from Circular Quay along George Street to Central Station and beyond.

78. The construction of this project has required the systematic closure of George Street in the Sydney CBD and given rise to a range of construction related impacts. It has a number of similarities to the MMRP in that:

    a. It will give rise to significant impacts and disruption expected on key CBD routes;

    b. It is a high profile project; and

c. It has implemented a focussed strategy to managed travel demand to limit impacts.

79. To assist in informing myself on this project I spoke to several people within the transport industry in Sydney to understand how this project was proceeding, I undertook limited onsite observations and I attended a conference where this topic was discussed.

80. The Australian Institute of Traffic Planning and Management (AITPM) held its national conference in Sydney in the last week of July 2016. I attended this conference and a Plenary session where key stakeholders in the Sydney Light Rail project spoke about the planning and execution of the construction of this project.

81. Key messages of note that I believe are pertinent to the assessment of the MMRP are:

    a. The benefits of establishing a central coordination office to bring together the State, Project and Council officers;

    b. The importance of launching a program of capacity improvements on the edge of the CBD to divert trips around construction sites and expected problem areas, and the need to get these works underway early in the project program;

    c. The benefits of developing and implementing a targeted and thorough Travel Demand Management program. In that case, key themes were Reduce, Reroute, Remode and Retime. It was noted that a result of that strategy they have observed a sustained reduction in CBD car travel both during the day and the peak periods;

    d. The need to develop a range of monitoring and contingency plans to deal with issues as they arose and to provide flexibility to changing issues.

    e. The potential benefits of implementing changes to the affected area. In that case the whole CBD was designated as a tow-away zone. This allowed them to quickly tow away vehicle parked in no-standing or clearway spaces as it only takes one car parked in the wrong spot to significantly impact a network.

82. The potential application of these types of measures to the MMRP, and their relationship to the proposed Environmental Performance Requirements, has informed of my statement.

4.3 Response to Submissions

83. I have reviewed the following submissions which raise issues concerning transport impacts: 4, 8, 9, 10, 16, 19, 21, 23, 25, 31, 38, 41, 48, 49, 52. 59, 61, 63, 67, 68, 70, 71, 73, 75-77, 81, 82, 84, 91, 93, 96, 97, 100, 101, 111, 123, 133, 135, 136, 140, 143, 154, 158, 164, 165,167-170, 175, 178-180, 182-184, 186, 189, 190, 195, 199, 201, 202, 204, 213, 214, 218, 220, 221, 226, 227, 229-232, 239, 243, 244, 246-250, 252, 254, 256, 257, 260, 263, 265-268, 272-274, 276-279, 282-284, 286, 288-290, 293-296, 303 – 306, 308-316, 318, 319, 325, 326, 328-330, 333, 339, 342, 344, 346, 347, 349, 352, 354, 356-358, 362, 364-368, 370, 371, 373, 377.

84. My detailed response to the matters raised in these submissions is set out in Appendix C.

85. There were some recurrent themes or issues raised in these submissions such as:

a. Concerns from residents regarding truck haulage down residential streets; and

b. Impacts of construction traffic on roads and their ability to accommodate these.

86. To address these concerns I have proposed a modification to the Environmental Performance Requirements as set out in Section 4.5. One of the recommendations highlights a need to consider minimising disruption to residents and for construction routes to avoid residential streets where possible, especially during night time haulage. My other recommendation is that monitoring be carried out of the related impacts on the network, and implementation of further mitigation treatments if required.

4.4 Review of MMRA Technical Notes

87. I have reviewed MMRA Technical Notes 001 – 021. I have focussed my review on the transport impact related notes, numbered 001, 002, 009, 012, 013, 015, 016, 018, 019, 020, 021 and 026.

Technical Note 001

88. No information of note.

Technical Note 002

89. The additional information is noted.

Technical Note 009

90. The additional information and revised approach is noted and considered an acceptable approach to provide access for these vehicles for the Concept Design (Option A) treatment at the Western Portal Precinct.

Technical Note 012

91. The revised operation phase condition of Franklin Street is noted. I believe that this provides an improved outcome for this area and is appropriate.

Technical Note 013

92. Further detail on this issue is provided in Technical Note 021.

Technical Note 015

93. These additional construction areas are noted. It should be reinforced that access to residents and businesses in these areas are to be maintained.

Technical Note 016

94. The revised construction methodology is noted. The TIAR and my assessment had already considered the ‘worst case’ scenario, so this change does not alter my findings or opinions.

Technical Note 018

95. The updated timeframes are noted.

Technical Note 019

Issue 1

96. This technical note states MMRA’s position that during construction, Grattan Street west of Royal Parade will be configured to operate as two lanes eastbound only, with no westbound movement provided for. The modelling provided

indicates that this will provide a slight improvement over the previously proposed configuration of one lane in each direction.

97. The configuration appears sensible and I believe that it will assist with some redistribution of traffic in the area.

Issue 2

98. A right turn ban is proposed from Royal Parade into MacArthur Road.

99. I have no objections to the proposal to ban the right turns into MacArthur Road. However, these vehicles turning at Walker Street may still impact on Tram operations and north-south movements, and therefore the benefits sought may be more limited than the Technical Note currently considers.

100. As the MacArthur Road / College Crescent route is a significant east-west road in Melbourne's inner north, any changes to the signal phasing or times at this intersection needs to ensure that east-west travel is not compromised.

Issue 3

101. The modelling analysis provided indicates that travel times along Swanston Street are expected to increase. These increases are in the order of 100 seconds in the short section north of Elgin Street. This is a considerable increase in travel time for this movement, in the order of 270%, and as such should not be dismissed lightly. Any traffic management plan or mitigating works for this area, should look to reduce this delay if at all possible.

Technical Note 020

Issue 1

102. In my peer review I had raised the issue of further analysis of the impacts to the key roads in the Parkville Precinct, as I have outlined above in Section 4.2.2. This Technical Note provides the further information that I sought.

103. Upon review of this data, it is apparent that there is expected to be additional delays along the three routes noted:

    a. Royal Parade is expected to increase travel times northbound in the PM peak by around 30%. I believe that this is an acceptable level given the range of construction activity ongoing along this route.

    b. College Crescent is expected to considerably increase in travel time by as much as 6 minutes (or 230%). This impact is significant, especially considering that this is one of the few east-west routes through the inner north of Melbourne. It is noted that mitigation works are proposed along College Crescent. These should include the intersections with Swanston Street and MacArthur Street to ensure that this full section of road is considered for mitigation. In my opinion this needs to be addressed in an Environmental Performance Requirement to provide surety that the modelled delays will be reduced.

    c. Swanston Street, these delays have been addressed in the comments provided on Technical Note 019.

104. I support the proposed mitigation works at intersections identified in this note.

Issue 2

105. In my peer review I had raised the issue of travel time delays to buses, as I have further outlined in Section 4.2.2.

106. It is noted that further work is ongoing to consider how best to mitigate these impacts through bus route diversions. The Technical Note attaches a copy of a

letter from Public Transport Victoria to the MMRA, dated 9th August 2016. This letter indicates that several alternatives are being considered to re-route these services. The letter also states a range of principles and factors that will considered in developing the alternative routes. I support the principles in this letter.

107. Further to any diversion of these routes, additional mitigation is recommended through the form of intersection treatments or bus priority phases to assist in reducing the impacts to these services.

Issue 3

108. It is noted that a staged construction of the cut and cover is possible. In my opinion this option should be pursued. No analysis of the impacts of these works has been provided at the time of submitting my expert witness statement. It is expected that further modelling and detailed analysis should be undertaken including further consideration of route alternatives and construction phase road configuration to optimise the final construction methodology and traffic management plans.

Issue 4

109. In my peer review I had raised the concept of undertaking sensitivity testing of the traffic volumes that are diverted around the Domain Station works when one lane is in operation beside the construction zone, as outlined in in Section 4.2.2.

110. The Technical Note includes a sensitivity test has been undertaken using the microsimulation model for this precinct. It indicated that MMRA sought to reallocate 30% of the previously diverted trips (1,000 vehicles per hour) back to St Kilda Road. This should equate to an increase in traffic volumes between the construction case and the Sensitivity case of around 300 vehicles per hour northbound, during the AM peak. However, in reviewing the tables provided it is apparent that only 85 additional vehicles across the two hour AM peak are able to cross the stopline on St Kilda Road at the Toorak Road intersection. This is apparently due to the downstream constraints around the construction site and localised congestion.

111. This information indicates that only around 5% of the original 1000 vehicles per hour that were diverted, were able to be accommodated on St Kilda Road northbound, north of the intersection.

112. This analysis heightens the need for a significant package of mitigation works on the surrounding network to accommodate this traffic, and it supports the need for a comprehensive travel demand management strategy to be implemented if this part of the network is to be able to function appropriately during this construction phase. I have not included any additional Environmental Performance Requirements to address this issue, as the exhibited Requirements address this issue. However, in my opinion this is a significant risk and if not managed appropriately could have extensive impacts to the network.

113. If those trips are successfully diverted away through either Travel Demand Management or other capacity enhancements, then the original analysis indicates that this construction zone will operate at satisfactory levels.

Technical Note 021

114. This note outlines a proposal to close Flinders Street, westbound at the approach to the Swanston Street intersection.

115. Several options to manage this closure have been put forward and considered, but no detailed modelling or analysis is provided at this stage. I understand that further model development is currently underway in this area.

116. The Technical Note states that Option 1 is the preferred option, however I believe that Option 2 should also be considered as it may provide a benefit to disperse the traffic load across multiple routes during this impact.

117. In my opinion, both of these options should be assessed using detailed microsimulation modelling.

118. With either of these options I have concerns that several of the intersections along Flinders Street and the intersection of Swan Street Bridge and Batman Avenue will struggle to accommodate the redirected traffic. Mitigation treatments will be needed at each of these intersections. These treatments would likely go beyond simple signal phasing and may require fairly significant civil works to accommodate the flows.

119. As there is currently not enough data or analysis to develop a conclusion on which option is preferable, I recommend an Environmental Performance Requirement that 1 lane in each direction is to be maintained until it can be demonstrated that an alternative option is suitable.

120. Despite the traffic focussed discussion provided in the Technical Note, I am very mindful that Flinders Street is a major road within the Melbourne CBD, and as it currently carries around 30,000 vehicles per day, its ongoing operation is critical. Any works should look to avoid any impacts to Flinders Street in this area if at all feasible. Closure of these lane should be considered as a last resort.

Technical Note 026

121. This document clarifies some queries in the TIAR and provides additional data.

122. There are no issues in this note that I believe warrant further commentary.

4.5 Environmental Performance Requirements (EPRs)

I have reviewed the EPRs relevant to Transport Impacts. The modified EPRs in Table 2 outline the proposed changes and recommendations that I believe are warranted to address issues that I have raised in this witness statement, and in response to some of the issues raised in the submissions.

Only those EPRs that warrant change have been replicated in Table 2.

Table 2 – EPR Recommendations

EPR No.	Original EPR	Recommended EPR	Reason for Modification
T1	Road Transport (Construction Phase) Develop and implement a transport management plan(s) in consultation with the relevant road management authorities to minimise disruption to traffic, car parking, pedestrian and bicycle movements during construction, including but not limited to:	Road Transport (Construction Phase) Develop and implement a transport management plan(s) in consultation with the relevant road management authorities to minimise disruption to **residents**, traffic, car parking, pedestrian and bicycle movements during construction,	I believe it is appropriate to highlight the need for these traffic management plans to not only consider the road users but also the adjacent residential areas.

		including but not limited to:	
T1	Road Transport (Construction Phase),	Insert the following text as another dot point in this section: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.	As noted above, a key concern from the community was the potential impact to residential streets. While this may not be able to be avoided, every effort should be made to minimise these impacts.
T1	Road Transport (Construction Phase)	Insert the following text as another dot point in this section: • Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to be developed and implemented.	The transport management plans should be monitored and if they are not meeting the intent or if there is unexpected/significant congestion then further mitigations should be provided.
T1	Road Transport (Construction Phase)	Insert the following text as another dot point in this section: • Flinders Street must be maintained with at least one lane and the tram services operating in	Detailed analysis and quantification of the impacts of Flinders Street closures have not been undertaken at this stage to provide confidence of the appropriate solution. Until that time, it should

		each direction unless it can be reasonably demonstrated that any further closures can be appropriately managed without severe disruption and congestion on the network.	be intended to keep at least one lane open.
T1	Road Transport (Construction Phase) • Provision of car parking for construction workers where possible	Modify the dot point to read: • Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to use existing on-street parking spaces.	Construction workers should not take up parking spaces intended for residents or businesses.
T1	Road Transport (Construction Phase)	Insert the following text as another dot point in this section: • Provision of complementary improvements to College Crescent, and other east-west roads in the Parkville Precinct, to accommodate additional traffic that may use these roads as a result of the Grattan Street closure.	This is to address the concerns raised in my comments responding to Technical Note 20.
T2	Public Transport (Construction Phase),	Insert the following text as another dot point in this section: • Investigate, and where appropriate, implement	Bus Routes 401 and 402 are significantly impacted by the works. The current EPRs only look for suitable diversions, I believe further work is needed to improve the network to

		intersection modifications, including bus priority treatments along the 401 and 402 Bus routes.	mitigate the expected delays to these services.
T3	*Active Transport (Construction Phase)*	Insert the following text as another dot point in this section: • Provide for ease of movement along the Tan Track in the Botanical Gardens near the Linlithgow Construction Sites, or provide a suitable alternative alignment should be provided during construction.	There is currently potential for the Tan Track to be disrupted during the works.

5 Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

Signed .....

Dated 11/08/ 2016

Annexure A – Response to PPV Guide to Expert Evidence

Expert's Qualifications

Bachelor of Civil Engineering, 2001.

VicRoads (2002) Traffic Management and Traffic Flow/Capacity, Understanding the Traffic Regulations, Road Design Criteria and Road Safety Awareness.

Professional Associations

Nil

Employment History and Achievements

- April 2015 to now - Director, Smedley Technical and Strategic
- September 2013 to March 2015 – Executive Director Technical Advisory Group, Linking Melbourne Authority
- June 2004 to September 2013 – various roles with GHD Pty Ltd, the most recent being the Leader, Traffic Engineering, Transport Planning and Transport Modelling across the organisation from May 2010 to September 2013.
- June 2002 to May 2004 – Traffic and Transport Engineer, Hyder Consulting
- December 2001 to June 2002 – Graduate Engineer, VicRoads

In late 2010, I was recognised by the Institute of Transportation Engineers Australia and New Zealand (ITE ANZ) as the Emerging Transport Professional for 2010.

Expertise to Make Report

Through my various roles as a technical leader in the transport industry I have directed, advised and reviewed a significant number of major transport infrastructure projects. This projects and this experience provide me the with adequate expertise to provide an independent expert opinion on the transport impacts of this project.

Other Significant Contributors to the Report (if any)

NIL

Instructions to Prepare Report

Instructions received from HSF 20 June 2016:

"We would like you to prepare a witness statement in accordance with the Planning Panel Victoria's *Guide to Expert Evidence* which prescribes the content and form of the expert witness statements. We enclose a copy for your reference. You are required to review and understand the Guide and to ensure your witness statement addresses all matters set out in the Guide in particular those matters listed under the heading content and form of expert's report. Please contact us if there is anything in this Guide which you do not understand, or if you have any questions in relation to it.

You should commence preparing your witness statement with the preliminary patters required as set out in the Guide.

In addition to these matters you should:

- Undertake a detailed review of Chapter 8 of the EES and Appendix D to the EES, and identify to what extent the material:
    - Addresses issues raised in your review of 15 April 2016; or

- Raises additional issues not identified in your review of 15 April 2016;

- Identify any relevant case studies concerning traffic management regimes established in respect of projects of a comparable scale and impact to the Melbourne Metro that have recently been or are presently being undertaken elsewhere within Australia; and
- Review the Environmental Performance Requirements set out in Chapter 8."

Instructions received from HSF 29 July 2016:

"Prepare a witness statement that:

1. addresses all matters set out in the Guide, in particular those matters listed under the heading 'content and form of expert's report';
    - describes any technical report that you reviewed or relied on in the preparation of your witness statement;
    - states whether you adopt the findings in the exhibited report, identifying any departure from the findings and opinions you express in your report exhibited with the EES;
    - includes any key assumptions made in preparing your report;
    - states whether the exhibited report is incomplete or inaccurate in any respect
2. Address or respond to each of the public submissions we forwarded to you or that you accessed via the online database in your witness statement;
3. Review the enclosed MMRA Technical Notes and consider whether they give rise to a need to modify proposed EPRs relevant to your area of expertise; and
4. Consider whether the EPRs relevant to your area of expertise establish an appropriate framework to govern the construction and operation of the Project if it ultimately differs from the Concept Design."

Identity of Persons who have Carried out Tests or Experiments upon which Reliance has been Placed (if any)

N/A

Reports Relied Upon to Prepare Expert Witness Statement

MMRP TIA unless stated otherwise.

I have also specifically relied in the transport modelling undertaken and presented in the TIAR. The TIAR in Section 2.7.2 of Appendix D states:

> *"All transport modelling undertaken for Melbourne Metro has undergone a rigorous calibration and validation process, and independently reviewed to ensure they are fit for purpose to test future year scenarios."*

I have relied on this statement that the modelling is fit for purpose.

SMEDLEY
TECHNICAL & STRATEGIC

Annexure B – Curriculum Vitae

SMEDLEY
TECHNICAL & STRATEGIC

Shaun Smedley

Director

Bachelor of Civil Engineering

Responsibilities and expertise

Shaun is the Director of Smedley Technical & Strategic, a consultancy business specialising in providing advice, support and direction, related to both transport infrastructure and transport related services. Smedley Technical & Strategic prides itself on its capability in providing advice on major transport infrastructure projects.

Prior to this Shaun was the Executive Director, Technical Advisory Group with the Linking Melbourne Authority (LMA). In that role, Shaun was the technical lead for the East West Link project, including development, planning, technical oversight and technical contract negotiations which led to the contract award of $5.3 billion AUD.

Before joining LMA, Shaun spent 12 years in the transport consulting business having worked for two high profile international firms. At GHD, Shaun was the Leader for Traffic Engineering, Transport Planning and Transport Modelling across the organisation globally.

In Shaun's time in consultancy he has worked on a wide variety of projects ranging from basic traffic engineering impact assessments to corridor planning for multi-billion dollar projects and state transport plan strategic advice. Shaun has managed or overseen over 80 transport modelling projects in his career.

Relevant experience

Western Distributor Proposal

Since mid-2015 Shaun has assisted the State Government by consulting into the role of Technical Director for the State team on the Western Distributor Proposal. This has involved review of the market-led proposal, ongoing negotiations and development of a State Concept and tolling structure.

The Western Distributor is a $5.5 billion project which involves widening the West Gate Freeway from 8 to 12 lanes between the M80 and Williamstown Road, a tunnel under Yarraville and a second river crossing over the Maribyrnong River. The project then extends through an elevated road along Footscray Road with direct links to the Port of Melbourne, CityLink and links to bypass traffic around the CBD.

Shaun has provided technical direction into the development of the Government reference business case, the development of an initial State Concept Design, the proposed tolling structure and the ongoing review and evaluation of the Market Led Proposal from Transurban.

East West Link, Linking Melbourne Authority

Shaun was the Executive Director of the Technical Advisory Group at the Linking Melbourne Authority; a Public Private Partnership focused government authority responsible for delivering some of Australia's largest transport infrastructure projects.

For the East West Link, Shaun led the development of the Reference Design for the project, oversaw the development of the technical requirements, led the transport modelling, led the technical workshops with the bidding consortia and chaired the technical evaluation panels.

Shaun oversaw the development of the Transport Impact Assessment for the Comprehensive Impact Statement for East West Link and was responsible for coordinating and developing the appropriate response to issues raised through the planning panels process.

Shaun was LMA's lead for establishing tolling pricing structures and was LMA's appointment on the Department's Melbourne Tolling Strategy Steering Group and subsequent working group.

Prior to joining LMA, Shaun was seconded to act as technical advisor providing advice on traffic modelling, traffic impacts, reference design and innovation workshops. Shaun was also heavily involved in the technical aspects of the East West Link business case. During this time, the modelling used for the patronage forecasts, the VLC Zenith Model, was independently reviewed. Shaun coordinated and managed this review process.

WestLink Planning and Consultation Study, Linking Melbourne Authority

Shaun was the leader for the traffic component of this project for the AGA joint venture team. Shaun was responsible for transport planning, interchange concept development and overseeing the Transport Impact Assessment and operational analysis aspects of the study. This included developing microsimulation models for key interchanges of the project.

Victorian Transport Plan Strategic Advice, Department of Premier and Cabinet

Shaun was the Project Manager for this undertaking in which he lead a team to prepare several reports to assist in developing the $38 billion Victorian Transport Plan (VTP). Shaun and his team provided key technical advice to the Department of Premier and Cabinet through scoping up potential alignments and options for several projects; North East Link, East West Link and Hoddle Street improvements

The East West Link aspect focussed on the western section of the project, WestLink.

Microsimulation Modelling Guidelines, Calibration and Validation, Roads and Maritime Services (RMS)

Shaun managed the development of the microsimulation modelling guidelines for the RMS in NSW. In developing the guidelines, the team undertook literature reviews and various workshops to develop the most appropriate set of inputs and criteria for the calibration and validation of transport models.

South Morang Rail Extension, Department of Transport

As part of this study, Shaun undertook strategic modelling using the Melbourne Integrated Transport Model (MITM), a multi-modal four-step model, to test alternative scenarios and produce bus and train patronage forecasts for the South

Morang Rail extension. This involved testing a range of scenarios including a potential further extension. As part of this project, passenger diversion from adjacent rail lines was also considered as well as the boarding and alighting patterns of buses at the new interchanges.

Microsimulation models were then undertaken of key precincts to determine impacts and to optimise operations.

Victorian School Bus Strategy, Department of Transport/Department of Education and Early Childhood Learning

Shaun was the project lead in a study jointly engaged by DOT and DEECD. The purpose of the project was to investigate current utilisation of the existing school bus system and consider broad opportunities to use these services to benefit rural and regional communities

This project involved consultation workshops with each of the regions, issues analysis based on the findings of the workshops, desktop research and appraisal of national and international examples of school bus systems, demand analysis using a GIS mapping and statistical data. This provided a solid foundation upon which initiatives and options could be developed to address specific issues, incorporate learnings from other jurisdictions, and meet community needs. The Transport Integration Act heavily influenced the options.

Southland Station Planning Study, Department of Transport

Shaun was the Project Director for this study to develop concept plans and cost estimates for Southland Station. The investigations included identifying appropriate supporting land use and transport solutions to ensure effective integration with the surrounding urban fabric.

Geelong Bus Interchange, Public Transport Victoria

Shaun was the project director for this project in which microsimulation models of the on-road bus interchange in the City Centre were developed. This modelling took into account issues with occupancy of bus stands, access to the stops and associated traffic congestion. The modelling incorporated the broader road network from Ryrie Street through to the Rail station to understand and find solutions for the bus delays that were occurring on Mooroobool Street.

Annexure C – Detailed Response to Submissions

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Reduction to one traffic lane along St Kilda Road causing delays and gridlock for 3-5 years • Relocation of tram tracks along St Kilda Road adding to traffic problems and exposing passengers to risk of collision with vehicles • Construction traffic along St Kilda Road due to excavations	MM004	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. Monitoring of the traffic performance is a requirement of the project.	Road Transport (Construction Phase), the transport management plan must include: • Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to be developed and implemented.
• Concerned that the site in Fawkner Park will create traffic congestion and impact on parking in the area	MM008	Section 8.4.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Fawkner Park site. Construction volumes are forecast to be low as such there are not anticipated to be any major impact to roads surrounding Fawkner Park .	Road Transport (Construction Phase), the transport management plan must include: • Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
			be developed and implemented. • Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to use existing on-street parking spaces.
• Parkville Station (Grattan Street) does not show an access on the southern or south-eastern side of Grattan Street. A connection here would improve access for staff and students and remove the need to cross the road and therefore have less impact on traffic	MM009	Section 7.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the station design at Parkville. The proposed design does not provide an access point on the southern side of Grattan Street, with the proposed access points linking the key pedestrian destinations. Safe pedestrian connections across Grattan Street will need to be provided as part of the redesign of Grattan Street.	
• Concerned about the traffic impacts on Osborne Street	MM010	Section 8.11.2 of the Technical Appendix D – Transport Impact Assessment shows that Osborne Street is one of the possible construction routes to the eastern portal with up to 62 trucks a day accessing the site.	Road Transport (Construction Phase), the transport management plan must include:

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	• Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Concerned that turn bans may be implemented on Toorak Road from Hope Street due to the construction of a new tram stop. • Hope Street is a one way street (southbound) and therefore there is no suitable alternate route if bans are in place	MM016	Section 8.10.4 of the Technical Appendix D – Transport Impact Assessment provides details on the impacts to public transport, including the rerouting of tram services along Toorak Road. There are currently no details on the proposed location of the temporary tram stops along Toorak Road when tram route 8 is diverted due to the closure of Domain Road. The Environmental Performance Requirements require a transport management plan to minimise disruption to traffic, which should address this submitters concern.	
• Install traffic restrictions on Arthur Street to prevent rat-running once Williams Street is	MM019	The Environmental Performance Requirements require a transport management plan to minimise	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
closed for 12 months – potentially convert parking to permit only		disruption to traffic, which could if necessary address this submitters concern.	
• No transport issues	MM021		
• No assessment on how Metro will impact the patronage of trams • Will trams be removed to improve the utilisation of Metro	MM023	Section 9 of the Technical Appendix D – Transport Impact Assessment provides details on the performance of the network after the opening of the Melbourne Metro Project, which does include discussion around the potential changes in tram patronage and travel times. As far as I am aware it is not proposed to remove any tram routes due to the introduction of the Melbourne Metro Project.	
• Ensure that parking in North Melbourne (mainly concerned with area around the club and oval) is not impacted during construction. Construction parking should be within its own newly created area and not use existing spaces • Concerned with increased traffic on Arden Street, particularly trucks. Wants traffic management plans, particularly during family open days or	MM025	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, which includes Arden Street past North Melbourne oval. The Environmental Performance Requirements require a transport management plan which includes provision of alternate parking where possible to replace parking lost on Laurens Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
training days for the North Melbourne Football club		receptors. This would include those special event days mentioned by this submitter.	
• Concerned about traffic impacts and disruption to access to South Kensington Station • Wants the alternative design to be constructed	MM031	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• Access to their property in North Melbourne is required along Barwise Street throughout the day. Any impact to the utilisation of Barwise Street will impact their business • Parking around Arden Street and Laurens Street is already very congested. Off-street parking for Metro construction workers must be provided – no on-street parking to be used	MM038	Figure 7-9 of the Technical Appendix D – Transport Impact Assessment provides details of the Arden Station precinct construction work site, which shows that Barwise Street will remain open during construction. The contractor is required to provide car parking for construction workers where possible.	
• Concerned about haulage route along Anderson Street and	MM041	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
Miller Street in West Melbourne • Miller Street is two way and too narrow for construction vehicles • Arden Street or Queensbury Street would be better routes		haulage routes that may be used to access the Arden station precinct, which includes Miller Street. There are a range of alternative routes to the route of concern to this submitter that could be selected if appropriate (having regard to the road network functionality, noise, amenity and practical considerations).	
• Concerned about disruption to access to South Kensington Street due to design. Would prefer the alternate design to be implemented • Truck routes for works near South Kensington need further work	MM048	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• Concerned about the southern truck route in the Arden Precinct travelling along Laurens Street, Miller Street and Anderson Street • Will bring a significant number of trucks close to residential properties and impact access and on-street parking	MM049	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, which includes Miller Street. Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route and that route 2 would be more	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Proposes that construction vehicles travel via Arden Street and that route 1 should not be used		likely for vehicles travelling to and from Dynon Road.	Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Closure of Bowen Crescent will place additional pressure on Queens Lane, requiring more traffic to turn out onto Kings Way to access St Kilda Road • Has any consideration been given to temporarily signalising this intersection	MM052	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and is the appropriate tool to address this submitter's concern.	
• The closure of Domain Road will direct more traffic along Toorak Road, increasing congestion in an already congested location. Construction trucks will only add further to this congestion • Traffic lanes along Toorak Road will be reduced to	MM059	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site.	Road Transport (Construction Phase), the transport management plan must include: • Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
accommodate the relocated tram line, halving capacity for traffic and impacting car access to properties and some streets on the northern side of Toorak • Closure of tram services on Park Street and Domain Road will result in increased pedestrian congestion and safety risks crossing Toorak Road • Replace tram route 8 with a bus service, similar to when this was in place during the Toorak Road/Glenferrie Road super stop works during construction		The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users. The re-routing of tram route 8 will need to include the provision of new tram stops that are designed to be safely accessed by pedestrians. It is unlikely that this tram service will be replaced with a bus service.	due to network changes, mitigating measures are to be developed and implemented.
• Concerned about congestion at the tram stop near Mac Robertson Girls High School and the increases in traffic flow and the risks to pedestrians • Would like to have a 40km/h zone out the front of the school on Kings Way and Albert Road, a drop off zone constructed at the school, be provided a supervisor for pedestrian	MM061	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site. 40km/h speed limits are restricted in the locations where they can be provided, such as shopping strips and school crossings. As there is a	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
crossings, E-class trams to provide more capacity and an entrance to the southern end of the station constructed		pedestrian overpass at Kings Way and no school crossings on Albert Road, it is not supported that a 40km/h zone should be implemented.	
• Objects to haulage routes 1 and 2a as they travel through residential areas in West Melbourne which would require trucks to make multiple turns to reach their destination • Access via Laurens Street and Arden Street would be more direct	MM063	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct. Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route and that route 2 would be more likely for vehicles travelling to and from Dynon Road.	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Does not want route 1 to be used for haulage through West Melbourne as it requires trucks to make too many turns. Requests that a more direct route be used	MM067	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct. Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route and that route 2 would be more	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		likely for vehicles travelling to and from Dynon Road.	used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Concerned about traffic management, closure of roads, emergency vehicle access, pedestrian access and removal of tram stops	MM068	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site.	
• The loss of parking on Childers Street which will displace parking onto the surrounding streets, which will include construction worker parking in these areas • The new rail bridge over Kensington Road will reduce sight distance at the intersection with Hobsons Road. This will be compounded with increased traffic at this intersection during construction	MM070	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which includes provision of alternate parking where possible to replace parking lost on Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users. The new bridge over Kensington Road for the Alternative Design Concept will be designed to	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• The closure of Grattan Street during construction displacing traffic onto other east-west streets • Increased pedestrian conflicts on Grattan Street due to the new station. Will require a new pedestrian crossing to provide access from the south to the station entry. An entry on the southern side of Grattan Street would solve this problem • Closure of Franklin Street reduced access to Queen Victoria Market		meet safety standards, which includes sight distance to reduce the likelihood of crashes. Section 7.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the station design at Parkville. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed due to the closure of Grattan Street. Safe pedestrian connections across Grattan Street will need to be provided as part of the redesign of Grattan Street. Section 8.8.3 shows the impact of the closure of Franklin Street on traffic performance around the CBD North site. It shows that the closure will not have a significant impact on the performance of the intersections surrounding the construction site. In an event, Technical Note 012 contemplates the re-opening of Franklin Street in the legacy phase.	
• Significant loss of parking and access on Ormond Street and Childers Street • Routing of construction trucks through Kensington • Supports alternative design which reduces impacts	MM071	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which includes minimized disruption to car parking and which outlines a provision of alternate parking	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		where possible to replace parking lost on Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• This submission is regarding the overall project scope. No transportation impact issues to address	MM073		
• EES did not provide enough detail on the amount of truck and traffic congestion in Tennyson Street, Kensington • Prefers the alternate design as this will reduce the impacts on their property	MM075	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the number of trucks currently travelling along Childers Street which will need to divert during its closure for construction. This will result in approximately 36 trucks being diverted. It is likely that some of these will use Tennyson Street, as they cannot utilise the access point on Lloyd Street to the Bakehouse Drive industrial precinct.	
• Owner of a business in the Lloyd Street business park. Concerned about restricted vehicle access, particularly large vehicles • Needs large vehicle access throughout the day, but	MM076	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed changes to access to the Bakehouse Drive industrial precinct, including the need for large trucks to divert to Tennyson Street as Lloyd Street may not be suitable.	

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particularly between 6am and 2pm • Wants a requirement on contractors that vehicle access must be maintained • Also concerned about the current high levels of congestion at the access to Lloyd Street, meaning that the Chalmers Street access is the only serviceable entrance		The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users. Technical Note 009 may also address these concerns.	
• Traffic along Derby Street in Kensington is already heavy, with no signals at the Kensington Road intersection • Construction trucks using Derby Street will have a major impact • Heavy construction traffic around JJ Holland Park will have a major impact • Supports the alternative design	MM077	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed haulage routes to and from the Western portal site. This section does not identify Derby Street as a potential haulage route. However other general traffic may be diverted via Derby Street due to the closure of Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users.	
• Park Street will be a major access road for the Domain site, however this road is congested during peak periods	MM081	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management,	

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• Using Park Street as a construction route will block access to residential buildings • It is suggested that parking on Park Street be removed and signals installed at the intersection with Wells Street and that queuing of trucks not be permitted on Park Street at any time		congestion could be managed surrounding the construction site. Park Street is one of multiple construction routes identified to the Domain Site. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• The EES provides no assessment of the impact on emergency access to The Alfred, despite the significant traffic congestion that will likely occur on St Kilda Road. St Kilda Road is a vital north-south emergency access route for The Alfred • The EES should quantify the risk to emergency vehicles and ensure that access is not compromised • St Kilda Road access must be maintained for patients, staff and visitors to The Alfred. Public transport along this corridor also needs to be	MM082	The Environmental Performance Requirements require a transport management plan which includes suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites. Section 8.10.3 provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site.	

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maintained for access to the hospital • Consideration should also be given to the routes that vehicles will be displaced to due to the works on St Kilda Road			
• Owns car yard at the corner of Arden Street and Laurens Street. Concerned that construction traffic will impact their business • Laurens Street is also used by their business for vehicle deliveries and customer parking	MM084	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes for the Arden station precinct which includes Arden Street and Laurens Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	Road Transport (Construction Phase), the transport management plan must include: • Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to use existing on-street parking spaces.
• Deliver the Park Street tram link and bicycle network prior to construction beginning to improve alternate travel choices during construction • Resource the transport demand management strategy appropriately to manage construction impacts	MM091	The construction sequencing has not been determined at this stage of the planning process. The Environmental Performance Requirements require the development of transport management plans to minimise the disruption to all road users. This also may include the scheduling of projects to assist in the development of the transport demand strategy. The transport management plans are to	

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• Ensure council involvement in the TDM • Work with Council to manage impacts to the transport network • Maintain St Kilda Road cross section throughout construction • Minimise closures of St Kilda Road • Commit to delivering complementary bicycle network improvements on routes parallel to St Kilda Road • Minimise parking impacts at Domain • Integrate strategic bicycle routes into station design • Provide 200 bicycle parking spaces and allow space for additional expansion – half should be secure and undercover • Provide for legacy transport network outcomes surrounding Domain Station • Upgrade Domain-Spencer Street tram route		be developed in consultation with the relevant road authorities, which includes Council. Given the required construction footprint in the Domain Precinct, it is unlikely that St Kilda Road will be able to maintain its current cross section. It is not proposed to fully close St Kilda Road during construction. Bicycle connectivity will be maintained through the construction site throughout the project. It is not proposed to deliver bicycle network improvements on alternate parallel routes. Bicycle facilities will be provided at Domain Station. The layout and number of spaces should be discussed with Council, but ultimately reflect current practice and anticipated demand for bicycle parking at train stations. I have not considered additional legacy transport network upgrades outside of the scope of the Melbourne Metro Project assessed in the TIAR.	

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• Prefers the alternate design in Kensington as it means that there will not need to be a roundabout at the station entrance, the shared path south of Childers Street is retained and more car parking is provided • The current design will mean extended closure of the Sunbury Line, making it harder to get on a train at South Kensington • Rerouting traffic from the Backhouse Drive industrial area will significantly increase traffic in residential areas	MM093	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• Concerned that emergency vehicles will not be able to access their building during construction • Road closures will make it impossible to exit their building via Queens Lane • Reducing St Kilda Road down to a single lane will create traffic chaos	MM096	The Environmental Performance Requirements require a transport management plan which includes suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites. Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		transport and travel demand management, congestion could be managed along St Kilda Road. The transport management plans also need to demonstrate management of any temporary or permanent full or partial closures to St Kilda Road. This would include access to this road.	
• The project will bring trucks into Kensington after the local residents have fought to have them removed • Supports the alternative design as it retains the shared path south of Childers Street	MM097	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• Concerned that early works will disrupt Leicester Street entrance to Melbourne University • Would like detailed traffic management plans to be developed to address increase congestion • Maintain pedestrian and cyclist access along Leicester Street	MM100	Section 7.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the station design at Parkville. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed due to the closure of Grattan Street. Safe pedestrian connections across Grattan Street will need to be provided as part of the redesign of Grattan Street. Appendix F of the Transport Impact Assessment shows the pedestrian routes impacted by the	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Wants advanced notice (6 months) of work schedule to assess impacts due to construction vehicles • Wants construction trucks banned from Leicester Street. Bouverie Street should be used • Wants no delays to vehicles on Leicester Street, Malvina Place and Church Street		construction phase. This shows that pedestrian access along Leicester Street will be maintained throughout construction. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	
• Rerouting the Bakehouse Drive industrial traffic will have an impact on surrounding residential streets • Rat running due to the closure of Childers Street • Loss of parking on Childers Street • Supports the alternate design which limits the above impacts	MM101	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed changes to access to the Bakehouse Drive industrial precinct, including the need for large trucks to divert to Tennyson Street as Lloyd Street may not be suitable. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of alternate parking where possible to replace parking lost on Childers Street. The transport management plans also need to make provision for alternative access to the industrial site.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Traffic diversions with the closure of Childers Street during construction. The alternative design will limit the impact of the diversion • Ormond Street and Altona Street are not suitable for heavy vehicle traffic. • The relocation of the shared path along Childers Street into the park will cause a conflict between cyclists and dogs (as the park is an off leash park)	MM111	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street.	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• The changes to the intersection of St Kilda Road and Albert Road should address the current deficiencies for bicycles, with a major flow of bicycles from Albert Street • A continuous separate bicycle lane should be provided on Albert Road between Kings Way and St Kilda Road with better connections to St Kilda Road	MM123	Section 7.8.2 of the Technical Appendix D – Transport Impact Assessment provides details on the layout of the area surrounding the Domain station after construction is completed. It states that there will be a station entrance at the corner of Albert Road and St Kilda Road which may potentially limit the provision of a continuous separate bicycle lane from Albert Road to St Kilda Road. The intersection layout here will be developed in consultation with VicRoads, Councils and other stakeholders.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• The development plan should be extended to include traffic management plan • The closure of Domain Road creates a barrier to existing access patterns • Disruptions to businesses around Domain due to the changed traffic conditions • Traffic congestion due to the reduced capacity on St Kilda Road • Closures of St Kilda Road need to be carefully planned and managed using transport demand management processes. Council expects to be worked with in the development of closures • TDM strategy to be resourced appropriately and any adverse impacts addressed • Further work is required to understand the impacts to St Kilda Junction and Canterbury Road	MM133	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site and impacts would be minimal across the broader road network. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths • Management of any temporary or permanent full or partial closures to St Kilda Road and Domain Road. The transport management plans would be developed in consultation with the relevant road authorities which would include Council.	Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to be developed.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• The loss of parking and the rerouting of tram route 8 down Toorak Road may be an impact to the Hebrew Congregation	MM135	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site and impacts would be minimal across the broader road network.	
• Supports the alternate design in Kensington as it will provide more car parking and will have less impact on traffic. There are no issues raised to address.	MM136	There are no issues for me to comment on	
• Supports the alternate design in Kensington as the concept design will create traffic disruption and diversions, permanent loss of car parking and disrupt access to Kensington • The alternate design provides safer traffic management and parking outcomes	MM140	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Parking for construction workers be provided so that residents are not impacted		• Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. • Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	
• No information in submission	MM143		
• Supports the alternate design • The concept design will result in substantial disruption of accessing to South Kensington • The closure of Childers Street would result in traffic diverting through residential roads	MM154	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM158	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. • Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	
• Construction works at the Eastern portal should not impact access	MM164	The Environmental Performance Requirements require a transport management plan to minimise	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Accessibility to South Yarra Station is not impacted during construction • Pedestrian vehicle access is reinstated as soon as possible after construction		the disruption to pedestrian movements during construction, including: • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM165	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of alternate parking where possible to replace parking lost on Childers Street. The transport management plan must also include: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		The Environmental Requirements also require the following in relation to station access: . Provide suitable routes for pedestrians to maintain connectivity, including DDA access for users of South Kensington station,	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM167	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. • Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM168	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. • Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park	MM169	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street.	Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to be developed.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Disrupted access to South Kensington Station and major rail disruption during closures		The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. • Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	Road Transport (Construction Phase), the transport management plan must include: • Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to use existing on-street parking spaces.
• Concerned at the lack of clarity of the number of people required for construction and the impact this will have on traffic and car parking around the Arden Street precinct • Additional information is required around the traffic movements in the Arden Precinct and the types of vehicles expected • Concerned that modelling of the impacts was not undertaken at the Arden Precinct.	MM170	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, however the proposed haulage routes do not include Fogarty Street. Contractors will not be permitted to utilise roads for haulage that have not been approved by the relevant road authority. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
Modelling should be undertaken as traffic volumes are high with many heavy vehicles • Concerned that Fogarty Street will be used for haulage, which is a major route into the owners site • Traffic and parking impacts will effect owners business			
• No specific transport issues to address.	MM175		
• Concerned about the diversion of pedestrians around Fed Square and the impact this will have on business • Would like to see more detailed modelling to assess the impacts of construction on site access	MM178	Section 7.7.1 of the Technical Appendix D – Transport Impact Assessment shows the proposed worksite at the CBD South station precinct which includes works along the northern edge of Federation Square. The Environmental Performance Requirements require a transport management plan to minimise the disruption to pedestrian movements during construction, including: • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access The Environmental Performance Requirements also require implementation of active control at	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		construction work site access points to maintain safety by avoiding potential conflicts between trucks, pedestrians and cyclists. As far as I am aware, it is not proposed to undertake detailed pedestrian modelling of the construction site.	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM179	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. • Outlines a provision of alternate parking where possible to replace parking lost on Childers Street.	

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• Concerned about pedestrian traffic across Swanston Street near RMIT. Between 5,000 to 10,000 movements each day • Emergency vehicle access to CBD campus. Emergency exits from buildings in close proximity to worksites • Construction activities including trucks will increase the risk of pedestrian/vehicle incidents • Main bicycle facilities are locations in Cardigan Street and at the corner of Swanston and A'Beckett Streets . Access must be maintained • Wants to be involved in the development of the travel demand management strategy • Pedestrian and bicycle access to the campus must be maintained, including footpath widths, lighting, bicycle paths • Access along Franklin Street is required until March 2017 as works have already been contracted which required heavy vehicle access	MM180	Section 8.8.5 of the Technical Appendix D – Transport Impact Assessment provides details on the impact to active transport which includes walking and cycling around the CBD North station precinct. Pedestrian access will be closed along A'Beckett Street as footpath widths cannot be maintained. Access across Swanston Street will not be restricted during construction. All existing bicycle paths will be maintained. The Environmental Performance Requirements require: • A transport management plan which includes suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites. • A transport management plan which provides suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • Implementation of active control at construction work site access points to maintain safety by avoiding potential	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Supports alternate design for the partial pedestrianisation of Swanston Street between La Trobe Street and A'Beckett Street		conflicts between trucks, pedestrians and cyclists. The plans will be developed in consultation with the relevant road authorities.	
• Consistent pedestrian access is required at all times to 247 Flinders Lane for vision impaired visitors. Any changes would need to be given 10 days' notice • Vehicle access to Flinders Lane is required to be maintained	MM182	Section 7.7.1 of the Technical Appendix D – Transport Impact Assessment shows the proposed worksite at the CBD South station precinct which shows that it is not proposed to close Flinders Lane as part of the works. Appendix F of the Transport Impact Assessment shows the pedestrian routes that will be impacted during the construction phase. This also shows that Flinders Lane will not be impacted as part of the works, nor will Flinders Lane be used as a truck route.	
• One lane operation of St Kilda Road will result in significant congestion. Will also impact emergency vehicle access to their building	MM183	The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes management of any temporary or permanent full or partial closures to St Kilda Road. The Environmental Performance Requirements also require a transport management plan which includes suitable measures to ensure that	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		emergency service access is not inhibited as a result of the construction work sites.	
• The closures of A'Beckett and Little La Trobe will have a negative impact to their business due to reduced foot traffic • Request that any closures occur in a staged manner to reduce impact • Do not want heavy vehicles to park permanently on A'Beckett Street as this will reduce visibility and foot traffic to their shop. This will also impact deliveries • No details whether the car lifts at 19-37 A'Beckett Street will still be accessible	MM184	Section 8.8.5 of the Technical Appendix D – Transport Impact Assessment provides details on the impact to active transport which includes walking and cycling around the CBD North station precinct. Pedestrian access will be closed along A'Beckett Street as footpath widths cannot be maintained. Staging of the works will be dependent on the successful contractor. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users. This plan will be developed in consultation with the relevant road authorities. Figure 7-13 of the Transport Impact Assessment shows the proposed construction zone along A'Beckett Street. This shows the construction zone between Stewart Street and Swanston Street which should not impact access to the car lift at 19-37 A'Beckett Street, as it is appears that this access point is located west of Stewart Street.	

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• Hoardings due to demolition of buildings adjacent to Young and Jackson will have an impact on pedestrian traffic	MM186	It is unlikely that the hoardings placed around the Young and Jackson site will have an impact on pedestrian traffic along Swanston Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access including Swanston Street.	
• The rerouting of tram route 8 away from the Botanic Gardens will impact the accessibility for tourists and will also impact the businesses along Domain Road	MM189	The rerouting of tram route 8 from Domain Road to Toorak Road will have an impact on the accessibility to the southern edge of the Botanical Gardens and businesses along Domain Road. Access to the Botanical Gardens and the Shine via public transport will still be possible by tram stops along St Kilda Road, which will also be accessed by the rerouted tram route.	
• Believes that the traffic impact assessment due to the Domain Station works are optimistic. Believes that there will be traffic congestion throughout the day • Has no confidence in the traffic modelling and impacts presented in the EES. Kings Way does not have the spare	MM190	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. I understand additional work is underway to assess the impacts on Kings Way to be able to	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
capacity to accommodate the diverted traffic from St Kilda Road • Construction traffic on local roads is unfair on local residents • Truck access should be kept away from residential streets as much as possible. Deliveries should be via the same routes as spoil removal to reduce the overall area impacted by construction vehicles. • Albert Road should not be used for construction vehicles due to the high density residential development • Construction site should be minimised and all public parking in Albert Road be retained		accommodate the diverted traffic. These additional tasks are listed below Table 8-38 in the Transport Impact Assessment. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors. The Environmental Performance Requirements also require a provision of alternate parking where possible to replace parking lost on St Kilda Road and Albert Road during construction.	
• No specific transport issues to address.	MM195		
• Opposed to truck route 1 in the Arden Precinct	MM199	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct,.	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route and that route 2 would be more likely for vehicles travelling to and from Dynon Road.	along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Emergency vehicle access to 416 St Kilda Road will be reduced during construction • Closure of Bowen Crescent will require access to off-street car parks from Toorak Road which is unsafe • On-street parking on St Kilda Road will be removed which will impact access to the building • Proposes to shift Domain Station north, will result in Bowen Crescent staying open, St Kilda Road stays open and no need to relocate trams	MM201	The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • The management of any temporary or permanent full or partial closures to St Kilda Road and Toorak Road. • Provision of alternate parking where possible to replace parking lost on St Kilda Road and Albert Road. • Suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites. Section 8.10.3 provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		combination of traffic diversions, public transport and travel demand management, congestion could be managed on the roads surrounding the construction site.	
• Emergency vehicle access to 416 St Kilda Road will be reduced during construction • Closure of Bowen Crescent will require access to off-street car park from Toorak Road which is unsafe • On-street parking on St Kilda Road will be removed which will impact access to the building • Proposes to shift Domain Station north, will result in Bowen Crescent staying open, St Kilda Road stays open and no need to relocate trams	MM202	The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • The management of any temporary or permanent full or partial closures to St Kilda Road and Toorak Road. • Provision of alternate parking where possible to replace parking lost on St Kilda Road and Albert Road. • Suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites. Section 8.10.3 provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed on the roads surrounding the construction site.	

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• Concerned about the rerouting of trams along St Kilda Road during construction • Concerns about the loss of parking during construction and contractors parking on-street • The closure of Bowen Crescent will limit access to their building. Will need to turn right off Kings Way which is difficult	MM204	Section 8.10.4 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct on public transport. It shows that tram travel time along St Kilda Road would be slightly improved during construction due to the reduced traffic volumes. However, travel times for route 8 will be slightly longer due to changed traffic signal phasing at the intersection of Toorak Road and St Kilda Road.	Road Transport (Construction Phase), the transport management plan must include: • Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors • Provision of alternate parking where possible to replace parking lost on Domain Road, St Kilda Road and Albert Road during construction • Provision of car parking for workers where possible. Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access	use existing on-street parking spaces.
• Cut and cover method at Domain will cause significant long term disruption	MM209	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan which	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		manages any temporary or permanent full or partial closures to St Kilda Road.	
• Removal of on-street parking on Toorak Road will have an impact on the local residents • New tram stops along Toorak Road will have a negative impact on traffic flow. Will also create a safety risk for children and elderly due to increased number of trams and traffic congestion • Rerouting of tram route 8 impacts access to the Botanical Gardens and schools along Domain Road •	MM213	The removal of parking along Toorak Road is required due to the rerouting of tram route 8 and the closure of Domain Road. The Environmental Performance Requirements require provision of alternate parking where possible to replace parking lost on Toorak Road, Domain Road and Albert Road. The proposed new tram stops along Toorak Road will be designed to minimise the impacts to traffic and meet the safe design standards suitable for both students and the elderly. Public transport access to the Botanical Gardens and schools along Domain Road will be via St Kilda Road during the construction phase.	
• Rerouting of tram route 8 will impact elderly pedestrians and also impact Toorak Road with reduced capacity	MM214	The removal of parking along Toorak Road is required due to the rerouting of tram route 8 and the closure of Domain Road. The Environmental Performance Requirements require provision of alternate parking where possible to replace parking lost on Toorak Road, Domain Road and Albert Road. The proposed new tram stops along Toorak Road will be designed to minimise the impacts to traffic	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		and meet the safe design standards suitable for both students and the elderly. Public transport access to the Botanical Gardens and schools along Domain Road will be via St Kilda Road during the construction phase.	
• Domain Station is not required as travel demand is currently met by tram services • Traffic along St Kilda Road is currently heavy and parking is limited. The project will further impact this during construction and reduce capacity along St Kilda Road once complete	MM218	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users, and includes management of any temporary or permanent full or partial closures to St Kilda Road.	
• Additional access point should be provided at Parkville Station, located north of Grattan and west of Royal Parade which will provide better access to the hospitals and bus services	MM220	Figure 7-12 of the Technical Appendix D – Transport Impact Assessment shows the proposed access points to the Parkville Station on the southern side of Grattan Street, west of Royal Parade. The locations of the access points are limited due to the available space along Grattan Street. A wide pedestrian crossing across Grattan Street will be provided at the signalised intersection with	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		Royal Parade (refer layout drawings in Appendix E) to provide access to the hospitals and bus services from the Parkville Station.	
• Pedestrian and tram access to 222-224 Flinders Street will be impacted due to construction activities • Loading via lane way beside property will need to be maintained	MM221	Pedestrian access will be maintained along Flinders Street during the construction works at the CBD South station. Appendix F of the Transport Impact Assessment shows the pedestrian routes impacted by construction, with all roads maintaining their pedestrian paths, except through City Square that will be closed during construction.	
• Permanently closing Albert Road south will place additional pressure on Albert Road north. • Concerned about disruptions to trams including the rerouting of tram route 8 • Use of Albert Road by heavy construction vehicles 24/7 • Maintaining access to building at 16-18 Albert Road at all times • Durations of full closure of Albert Road for construction activities • Location of proposed bicycle loops near building	MM226	Section 9.10.1.2 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the ultimate road layout once construction is complete, including the closure of Albert Road South. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • The management of any temporary or permanent full or partial closures to Albert Road. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Pedestrian access around construction site and DDA access to building • Loss of parking spaces along Albert Road due to construction.		safety for roads and shared paths to provide continued access • Provision of alternate parking where possible to replace parking lost on Albert Road The re-routing of tram route 8 will need to include the provision of new tram stops that are designed to be safely accessed by pedestrians.	
• Laurens Street is currently at capacity. Cannot accommodate additional construction traffic • Concerned that construction vehicles with block or use the common driveway to Naturelinks site • Construction workers parking on-street, preventing use by visitors • Concerned about cyclists and pedestrians travelling to work and potential conflict with construction trucks • Haulage routes travelling south along Laurens Street (route 1)	MM227	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, which includes a number of possible routes including along Laurens Street. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • Provision for construction routes to be developed recognising sensitive receptors • Provision of alternate parking where possible to replace parking lost on Laurens Street • Provision of car parking for workers where possible.	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
will impact operations of this business • Wants traffic lights installed at the intersection of Laurens Street and Queensberry Street		• Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths and to provide continued access to Laurens Street. Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route and that route 2 would be more likely for vehicles travelling to and from Dynon Road.	
• Only one lane in each direction along St Kilda Road will create significant congestion • Loss of parking on St Kilda Road will have a big impact	MM229	The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes management of any temporary or permanent full or partial closures to St Kilda Road.	
• Prefers the alternate design for the Western portal • Concerned about trucks travelling on residential streets	MM230	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Does not really raise any transport concerns with the project • Notes that there will be disruption to Swanston Street and La Trobe Street tram services, but does not raise an issue with this • Notes that there will be additional construction traffic in and around the CBD north site, but does not raise an issue with this	MM231	No comments are warranted from me.	
• Concerned with the effects of having only one lane in each direction along St Kilda Road with not parking • This will create significant congestion • Concerned about emergency services access to their building	MM232	The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes management of any temporary or permanent full or partial closures to St Kilda Road. The Environmental Performance Requirements also require a transport management plan which includes suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites.	

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• Concerned about construction traffic on Arden Street, Fogarty Street and Laurens Street • Their business generates 10 truck movements a day which will need continual access	MM237	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, however the proposed haulage routes do not include Fogarty Street. Contractors will not be permitted to utilise roads for haulage that have not been approved by the relevant road authority. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users. I do not believe that the Chep trucks referred to in the submission will be affected.	
• Want the alternate option at the Western Portal • Concerned at the loss of parking on Childers Street • Diversion of trucks through local roads to access 50 Lloyd Street industrial area • Loss of shared path on the southern side of Childers Street	MM238	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. I agree that many of the concerns raised in the submission can be reduced with the Alternative Concept Design. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of alternate parking where possible to replace parking	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		lost on Childers Street. The transport management plan must also include: • Provision for construction routes to be developed recognising sensitive receptors. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street. During construction the shared path along Childers Street will be removed, although an alternate route may be provided through JJ Holland Park.	
• Supports the alternate design for the Western portal • Closure of Childers Street will divert trucks into residential roads • Alternate design will provide more parking • Not happy that Metro does not upgrade South Kensington Station	MM239	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of alternate parking where possible to replace parking lost on Childers Street. The transport management plan must also include: • Provision for construction routes to be developed recognising sensitive receptors.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street.	
• Supports the alternate design for the Western portal • Should transport spoil from tunnel via conveyor to the Maribyrnong River rather than trucks	MM243	Section 8.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed haulage routes to/from the Western portal precinct. Constructors could identify alternate methods of haulage, such as a conveyor to the Maribyrnong River which would be assessed during the tender evaluation (provided that these comply with the Environmental Performance Requirements).	
• Construction activities at Domain will impact access to their building • No provision for emergency services • No provision for visitor access • Proposed works on Punt Road and Kingsway will not solve congestion issues created on St Kilda Road	MM244	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise	Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to be developed.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access. • measures to ensure that emergency service access is not inhibited as a result of the construction work sites. • management of any temporary or permanent full or partial closures to traffic lanes.	
• Concerned that construction works at Fawkner Park will impact pedestrians and remove parking near this business	MM246	Section 8.4.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Fawkner Park site. Construction volumes are forecast to be low, as such there are not anticipated to be any major impact to roads surrounding Fawkner Park.	
• Supports the alternate design for the Western portal • Should transport spoil from tunnel via conveyor to the Maribyrnong River rather than trucks	MM247	Section 8.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed haulage routes to/from the Western portal precinct. Constructors could identify alternate methods of haulage, such as a conveyor to the Maribyrnong River which would be assessed during	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		the tender evaluation (provided that these comply with the Environmental Performance Requirements).	
• Supports the alternate design for the Western portal • Should transport spoil from tunnel via conveyor to the Maribyrnong River rather than trucks	MM248	Section 8.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed haulage routes to/from the Western portal precinct. Constructors could identify alternate methods of haulage, such as a conveyor to the Maribyrnong River which would be assessed during the tender evaluation (provided that these comply with the Environmental Performance Requirements).	
• No parts of the Shrine Reserve, outside of the agreed works area, is to be used for vehicular movements • Needs to consider the impact of parking around the Shrine, especially during ceremonial events – parking is not available within the Shrine reserve • Access to sufficient coach parking along Birdwood Avenue must be maintained during construction	MM249	Section 7.8.1 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed construction work site outline which does not include any works outside of the agreed works area. As far as I am aware, it is not currently proposed to remove parking along Birdwood Avenue. Changes to parking provision may occur along St Kilda Road and Domain Road.	

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• EES underestimates the impact due to traffic closures in North Melbourne • Effects of the closure of Grattan Street are underestimated, especially with the combined impacts of Western Distributor	MM250	It is acknowledged that limited analysis of the impact of construction has been undertaken on the roads surrounding the Arden station site. The Environmental Performance Requirements require a transport management plan to: • minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors. • include management of any temporary or permanent full or partial closures to Grattan Street • be developed recognising other projects operating concurrently, where relevant At the time of writing this EES, there were no details available regarding the Western Distributor to enable a detailed assessment of any impacts due to the closure of Grattan Street during construction. The combined impacts of the Melbourne Metro Rail Project and the Western Distributor will be assessed as part of the Western Distributor EES.	

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• One lane operation of St Kilda Road will result in significant congestion. Will also impact emergency vehicle access to their building	MM252	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. This operation is expected to last for 18 months and will require considered and ongoing management to ensure congestion does not get excessive. The Environmental Performance Requirements require a transport management plan which includes suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites.	
• Would like a Domain station access point on Birdwood Avenue between the Shrine and the Observatory Gate Precinct • 24 hour access is required to the Botanical Gardens • Reinstate tram route 8 as soon as possible after construction • Provide additional signage between tram stop 23 (Hope Street) and E Gate of the	MM254	It may not be possible to provide an additional station access on Birdwood Avenue due to restricted areas around The Shrine. Access around the Botanical Gardens will be maintained throughout the construction period. There may be limited access off Domain Road, however alternate access would be possible via Birdwood Avenue. It is assumed that tram route 8 will be reinstated along Domain Road once construction activities are complete at Domain Station.	

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Botanical Gardens for pedestrians		All diversions or works will need an appropriate signage and wayfinding strategy to assist users in understanding the changes and how to reach their intended destination.	
• Concerned about the impacts of construction at Domain including traffic congestion and loss of car parking	MM256	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • The management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access Provision of alternate parking where possible to replace parking lost on Domain Road, St Kilda Road and Albert Road.	

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• Believes that there should be an interchange with South Yarra Station • South Yarra Station should be upgraded • Project should build a shared path through South Yarra Siding Reserve along the Sandringham line • Improve rail and tram connectivity at South Yarra Station • It is unclear is tram route 8 is to go back to its original route once works are complete	MM257	The drawings provided in Appendix E of the Traffic Impact Assessment show the ultimate layout of the intersection of Domain Road and St Kilda Road. This shows the tram tracks along Domain Road being reinstated for the use of tram route 8. It also shows the ultimate layout of Toorak Road West which does not include any tram tracks. South Yarra Station is not part of the MMRP as assessed in the EES and TIAR, so I have no comment to provide on this matter.	
• Deep cavern mining will reduce the impact on roads and trams • Loss of car parking impacting visitors and businesses • The closure of Domain Road creates a barrier to existing access patterns • Traffic congestion due to the reduced capacity on St Kilda Road • Construction traffic transporting materials	MM260	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed surrounding the construction site and impacts would be minimal across the broader road network. The Environmental Performance Requirements require a transport management plan to minimise	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		the disruption to all road users during construction, including: • The management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • Provision of alternate parking where possible to replace parking lost on Domain Road, St Kilda Road and Albert Road. The pedestrian access referred to in the requirements above would include connections across Domain Road. The transport management plans would be developed in consultation with the relevant road authorities which would include Council where appropriate.	
• Concerned about the loading of goods due and collection of waste to works at CBD North • Vehicle and pedestrian access to business	MM263	Section 8.8.3 of the Technical Appendix D – Transport Impact Assessment provides the transport impacts of the proposed works at the CBD North site, including details around the closure of the eastern end of Franklin Street. It is not	Road Transport (Construction Phase), the transport management plan must include:

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• Must maintain access to car park and loading dock at 8 Franklin Street • Trucks must not stop at the front of ALDI • Off-street parking for construction workers should be provided • Pedestrian access must not be restricted during the day		proposed to close Franklin Street west of Swanston Street and access to businesses will be maintained. The Environmental Performance Requirements require a transport management plan to minimise the disruption to pedestrian movements during construction, including: • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access. • implementation of active control at construction work site access points to maintain safety by avoiding potential conflicts between trucks, pedestrians and cyclists. Provision of car parking for construction workers where possible.	• Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to use existing on-street parking spaces.
• The closure of William Street in South Yarra will reduce access to their property in Albert Street • The closure will produce excessive traffic in Albert Street	MM264	It is acknowledged that the closure of William Street will reduce access to Albert Street as direct access from Toorak Road will not be possible during construction. Alternate routes via Chapel Street are available. It is possible that this alternate route via Chapel may lead to additional traffic on the eastern end of Albert Street. However the catchment of properties that are likely to make this movement are	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		limited to the full length of Albert Street and is therefore considered to be low.	
• Raises an alternative station location at Domain. Little further detail is provided	MM265		
• Concerned about the construction of a bridge opposite 119 Osborne Street South Yarra and construction vehicles using Osborne Street for access • No consideration of worker vehicles in traffic assessment • Osborne Street is a narrow residential street, not suitable for construction vehicles • The use of Osborne Street for construction access will result in the loss of on-street parking • There will be restricted access for residential properties along Osborne Street • Increase of traffic in Osborne Street will reduce safety	MM266	Section 8.11.3 of the Technical Appendix D – Transport Impact Assessment provides a forecast of the number of construction vehicles accessing the site. The overall truck volumes accessing this construction site are expected to be 62 trucks per day, during the peak of the constriction. These trucks would operate during standard working hours. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures to Osborne Street and William Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		These plans, when developed should alleviate some of the concerns raised.	
• Loss of parking on St Kilda Road and Albert Road • Impacts of road closures such as Albert Road, St Kilda Road and Domain Road • Disruption to tram services • Construction traffic and their use of Albert Road	MM267	Section 9.10.1.2 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the ultimate road layout once construction is complete, including the closure of Albert Road South. These results do show an increase in delays along Albert Road in both peak periods due to the proposed changes to the road network. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • The management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. • Provision of alternate parking where possible to replace parking lost on Domain Road, St Kilda Road and Albert Road.	
• Construction zone around Domain Station should be kept to a minimum to avoid impacts on Albert Road and associated car parking	MM268	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public	Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Construction traffic should not be allowed to use Albert Road between Kings Way and St Kilda Road due to residential land use • Access to residential buildings should be maintained throughout construction • Safe pedestrian access should be maintained throughout construction • Construction vehicles should not be allowed to use on-street car parking • Existing on-street disabled parking should be maintained		transport and travel demand management, congestion could be managed along St Kilda Road. Albert Road is one of multiple construction routes identified to the Domain Site. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • The management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access Provision of alternate parking where possible to replace parking lost on Domain Road, St Kilda Road and Albert Road.	network changes, mitigating measures are to be developed. Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Concerned about traffic generated by construction at the CBD North site • Closure of Franklin Street will have adverse outcomes and	MM272	Section 8.8.3 of the Technical Appendix D – Transport Impact Assessment provides the transport impacts of the proposed works at the CBD North site, including details around the closure of the eastern end of Franklin Street. It is not	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
restrict access to their buildings parking • Permanent closure of Franklin Street will result in grid-lock along Victoria Street		proposed to close Franklin Street west of Swanston Street and access to businesses will be maintained. Traffic modelling of the closures both due to construction and in permanent operation show that the roads surrounding the CBD North site will operate successfully in both peak periods. Pedestrian and cyclist access will be maintained.	
• Concerned about truck haulage routes at CBD North site. Not enough details provided • No details as what is referred to as 'peak periods' • Concerned about vehicle deliveries to the two automotive dealers at Swanston/Victoria • Closure of lanes on Franklin Street will create logistical difficulties to business • Truck routes to/from the Arden precinct are not clear. More details required • Closure of Franklin Street will make it harder for vehicles to access Audi	MM273	Figure 8-14 of the Technical Appendix D – Transport Impact Assessment provides details of the prosed haulage routes to and from the CBD North site. Appendix C of that report provides greater details on the construction traffic routes, including how the sites connect together, such as haulage routes along Victoria Street between the Arden Precinct and the CBD North Precinct. Peak periods are typically the AM and PM peaks on the road network. In the modelling they can often be represented as two hour peaks from 7am to 9am and 4pm to 6pm. Practically they can extend beyond those times. Section 8.8.3 of the Technical Appendix D – Transport Impact Assessment provides the transport impacts of the proposed works at the CBD North site, including details around the closure of the eastern end of Franklin Street. It is not	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		proposed to close Franklin Street west of Swanston Street and access to businesses will be maintained. Traffic modelling of the closures due to construction show that the roads surrounding the CBD North site will operate successfully in both peak periods.	
• Should consider construction routes to CBD South via Alexandra Gardens • Pedestrian access to be maintained to St Paul's during construction • Consider extending the pedestrian crossing on the east approach of Flinders Street once construction is complete	MM274	A number of construction access routes have been considered for the haulage of materials for the Metro Project. The objective of the proposed construction routes is to access the arterial network as soon as possible and minimise the usage of non-arterial roads. Appendix F of the Transport Impact Assessment shows the pedestrian routes impacted by the construction phase. This shows that it is not proposed to alter pedestrian access around St Paul's during construction. It is unlikely that the pedestrian crossing on the eastern approach of Flinders Street can be extended to align with the southern access point of St Paul's. The intersection of Flinders Street and Swanston Street is already constrained and extending the crossing will likely result in further delays for bicycles, trams and cars at this critical intersection.	
• Access to building is via Queens Lane from either Kings	MM276	The contractor is required to develop transport management plans to minimise the disruption to all	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
Way or Bowen Crescent. Access off Kings Way is dangerous and will be the only point of access once Bowen Crescent is closed • Emergency vehicle access will be limited to buildings along St Kilda Road • Construction traffic will increase congestion in the area		road users and surrounding residents. This will include the management of existing access to properties and car parks. This travel plan will also need to consider the safety of proposed diversion routes. The Environmental Performance Requirements require a transport management plan which includes suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites. Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road.	
• Concerned that heavy vehicle routes along Arden Street will impact capacity for deliveries to business • More details are required on truck volumes along Arden Street • Further information is required on the number of workers at the Arden Street site. EES only	MM277	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, however the proposed haulage routes do not include Fogarty Street. Contractors will not be permitted to utilise roads for haulage that have not been approved by the relevant road authority. Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment indicates the peak	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
discusses whole of project numbers • Concerned that trucks will use Fogarty Street to access Arden Site		daily truck volumes in this area are expected to be 364 trucks per day. In a worst case scenario, Arden Street would cater for all of these trips. This is likely to result in less than 30 trucks per hour. Section 8.2 of the Technical Appendix D – Transport Impact Assessment, table 8-1 indicates a possible workforce of 421 workers at Arden.	
• Areas surrounding station entries should be fully pedestrianized	MM279	Given the location of the stations adjacent to some major roads carrying high volumes of vehicles throughout the day, it is unlikely that the areas surrounding the stations entries will be fully pedestrianized. Pedestrian access and safety will need to be considered as part of the ultimate design of the stations.	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM282	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of alternate parking where possible to replace parking lost on Childers Street. The transport management plan must also include:	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• Provision for construction routes to be developed recognising sensitive receptors. Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths including Childers Street.	
• There will be reduced access to the Botanical Gardens due to the rerouting of tram route 8 • Domain Station is not required. Any public transport demand here could be met with larger trams • Access is required 24/7 to the buildings off-street car park • On-street parking needs to be maintained for visitors • Details need to be provided on relocated bus and tram services • No confidence in the traffic forecasts • Access routes to the construction site needs more detail • Needs to be restriction on the hours of truck movements	MM283	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The rerouting of tram route 8 will reduce access to the Botanical Gardens along Domain Road. However, access will still be possible via all other accesses. Plans for relocated public transport services will be agreed with the relevant authorities and presented at a suitable time. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Does not want a significant amount of bicycle storage at Albert Road reserve		safety for roads and shared paths to provide continued access • Provision for construction routes to be developed recognising sensitive receptors. The provision of bicycle storage at Albert Road will be discussed with key stakeholders which includes Council.	
• Wants cavern construction at Domain to reduce the congestion on roads, no further discussion required.	MM284	There are no relevant issues for me to provide comment on.	
• Supports the alternate design for the Western portal • Should transport spoil from tunnel via conveyor to the Maribyrnong River rather than trucks	MM286	Section 8.5.2 of the Technical Appendix D – Transport Impact Assessment provides details on the proposed haulage routes to/from the Western portal precinct. Constructors may identify alternate methods of haulage, such as a conveyor to the Maribyrnong River which would be assessed during the tender evaluation.	
• Concerned that the closure of Domain Road will impact their business • Concerned about access along St Kilda Road during construction.	MM288	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Concerned about emergency vehicle access to building • Concerned about lack of guest drop off area when St Kilda Road is reduced to one lane. Currently there is an indent on St Kilda Road. Also impacts valet parking • Concerned about access to loading dock. Only sufficient space for one vehicle at a time. What happens if multiple deliveries occur at once. Overflow currently uses on-street parking. • Concerned about the loss of on-street parking and impacts to conference venue and restaurant • Wants traffic signals installed at St Kilda Road and Bowen Crescent to allow access from the south to hotel • Does not like the separated bicycle path out the front of their hotel in the ultimate layout and the loss of on-street parking		transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • measures to ensure that emergency service access is not inhibited as a result of the construction work sites • management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. It is unlikely that traffic signals could be provided at the intersection of St Kilda Road and Bowen Crescent as this is in the middle of the construction zone.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		The provision of bicycle facilities along St Kilda Road will be discussed with key stakeholders which includes Council and VicRoads.	
• There will be reduced access to the Botanical Gardens due to the rerouting of tram route 8 • Domain Station is not required. Any public transport demand here could be met with larger trams • Access is required 24/7 to the buildings off-street car park • On-street parking needs to be maintained for visitors • Details need to be provided on relocated bus and tram services • No confidence in the traffic forecasts • Access routes to the construction site needs more detail • Needs to be restriction on the hours of truck movements • Does not want a significant amount of bicycle storage at Albert Road reserve	MM289	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The rerouting of tram route 8 will reduce access to the Botanical Gardens along Domain Road. However, access will still be possible via St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		The provision of bicycle storage at Albert Road will be discussed with key stakeholders which includes Council.	
• Concerned that the reduced lanes on St Kilda Road will cause traffic congestion • The closure of Bowen Crescent will disrupt access to their building. Requiring them to access via Queens Lane which is unsafe • Concerned about the loss of on-street parking along St Kilda Road • Emergency service access will be restricted • Amount of construction traffic along St Kilda Road	MM290	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • measures to ensure that emergency service access is not inhibited as a result of the construction work sites • management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• a provision of alternate parking where possible to replace parking lost on Domain Road, St Kilda Road and Albert Road.	
• Supports the alternate design • The concept design will result in traffic diverting through residential streets and have a permanent loss of parking near JJ Holland Park • Disrupted access to South Kensington Station and major rail disruption during closures	MM293	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of alternate parking where possible to replace parking lost on Childers Street. The transport management plan must also include: • Provision for construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access.	
• Does not agree that Gatehouse Street is included as a key link. This road is under the control of CoM and should not be considered a key link	MM294	The consideration of Gatehouse Street as 'key link' in a strategic model does not make it an arterial route. The model will be set up with different road capacities to reflect the purpose and nature of each	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Concerned that limited growth in AADT does not address peak period growth • Concerned about the loss of parking in and rat running in South Parkville during construction and in the ultimate layout • Concerned that the closure of Grattan Street will result in additional traffic along Gatehouse Street. Tables 8-14 and 8-15 show 20% increase in traffic volumes • Wants transport management plans discussed with the local association in Parkville • Construction workers should not be allowed to park in residential streets • Need to prevent rat running and reinforce traffic calming measures • Does not agree with the statement that the reduction to one lane in each direction along Grattan Street will not have a		road. There is no proposal to increase the capacity of Gatehouse Street. The forecast traffic diversion on Gatehouse Street is extracted from the strategic model. While the forecast increases of 20% in each direction in the PM peak appear high, this is only 100 vehicles an hour each way which can be accommodated in the current capacity of Gatehouse Street. The contractor is required to develop transport management plans to minimise the disruption to all road users and surrounding residents. The Environmental Performance Requirements require a transport management plan which minimises disruption to all road users and includes: • management of any temporary or permanent full or partial closures to Grattan Street. • a provision of alternate parking where possible to replace parking lost on Grattan Street. • Provision of car parking for construction workers where possible.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
major increase on Gatehouse Street •			
• Concerned about the amount of heavy vehicle traffic in the vicinity of Albert Road and the impacts to pedestrian access • Concerned that construction will disrupt vehicle access to their business and on-street parking • Concerned about emergency vehicle access during construction	MM295	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access measures to ensure that emergency service access is not inhibited as a result of the construction work sites.	
• Concerned that the rerouting of tram route 8 will be permanent	MM296	The drawings provided in Appendix E of the Traffic Impact Assessment show the ultimate layout of the intersection of Domain Road and St Kilda Road.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		This shows the tram tracks along Domain Road being reinstated for the use of tram route 8. It also shows the ultimate layout of Toorak Road West which does not include any tram tracks.	
• Need to consider the design of tram stops in the vicinity of the stations to ensure good connectivity • It is critical that trams continue to provide high capacity connections for passengers • Safe access to tram stops must be maintained throughout construction	MM303	The design of tram stops has not been undertaken at this stage in the project. Tram stops will be designed to meet the requirements of Yarra Trams, VicRoads and Councils which will consider connectivity, traffic operation and pedestrian safety.	
• The proposed access points to the CBD South station will require pedestrians to cross Collins Street to access the station – an access point north of Collins Street would be better	MM304	It may not be possible to place a station entrance on the northern side of Collins Street due to width constraints. Pedestrian currently cross Collins Street successfully and with the signalised crossings continued to be provided with the ultimate design of the CBD South station.	
• Haulage route 1 for the Arden precinct is not safe due to pedestrian activity • Miller Street might not be able to accommodate the weight of a construction truck. It is also	MM305	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, which includes Miller Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
too narrow for construction vehicles • Route 2b is a more suitable route given the cross section of the roads along that route		Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route. In my opinion, route 1 is not appropriate and that route 2 would be more likely for vehicles travelling to and from Dynon Road.	
• Domain Station is not required as travel demand is currently met by tram services. It is unlikely that residents will travel underground to get a train when trams are available • Domain Station should be a cavern to reduce impacts on St Kilda Road	MM306		
• Concerned that the location of station accesses has the potential to impact on public safety due to increased pedestrian traffic in the vicinity of the Parkville station • Concerned that emergency vehicle access around Parkville station will be impacted due to construction and closure of Grattan Street • Concerned that the ultimate layout of Grattan Street will	MM308	The ultimate layout of the stations, pedestrian crossings and road network will be discussed with key stakeholders which would include emergency services and would be designed taking into consideration pedestrian safety. A performance requirement of the constructor is to develop, in consultation with emergency services, suitable measures to ensure that emergency service access is not inhibited as a result of the construction work sites.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
restrict emergency vehicle access			
• Prefers the alternate design for the Western Portal • Concerned with the trucks travelling along Altona Street and Tennyson Street • Does not want any traffic changes on Altona Street and Tennyson Street due to works	MM309	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street.	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.
• Not enough information about how City Square car park will be treated after construction • No information as to how many temporary car parking spaces will be provided to residents at 201 Collins Street • Concerned about the high level of truck movements associated	MM310	The detailed construction methodology has not yet been determined for the CBD South Precinct. This includes the identification of temporary parking spaces for residents. Section 8.9.3 the Technical Appendix D – Transport Impact Assessment provides on the traffic disruptions associated with the CBD South works. It	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
with construction around City Square • Concerned that no road closures have been discussed for the CBD South site • Proposed access points are south of Collins Street, requiring pedestrians to cross this road. Access should be provided north of Collins Street • During construction, pedestrians are required to cross Collins Street on the western side of Swanston Street. This location is already congested. • Concerned about heavy traffic on Collins Street and Swanston Street. These roads are not suitable for heavy vehicles		does identify the potential closure of Flinders Street due to the proposed staging of the works. It may not be possible to place a station entrance on the northern side of Collins Street due to width constraints. Pedestrian currently cross Collins Street successfully and with the signalised crossings continued to be provided with the ultimate design of the CBD South station. The haulage routes identified in Figure 8-16 do include Collins Street and Swanston Street. The sections identified are suitable for heavy vehicles as there is sufficient width for these vehicles to use these roads.	
• Believes that Domain Station should be in a different location, which would reduce traffic impacts and not require road closures	MM311	I have not reviewed or provided opinion on the suitability of the location of the Domain Station.	
• Domain Station is in the wrong location, resulting in significant numbers of pedestrians	MM312	I have not reviewed or provided opinion on the suitability of the location of the Domain Station.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
crossing roads and the removal of 200 parking spaces • Wants additional pedestrian access points to realigned station			
• Domain Station is not required as travel demand is currently met by tram services. It is unlikely that residents will travel underground to get a train when trams are available • Domain Station should be a cavern to reduce impacts on St Kilda Road	MM313	I have not reviewed or provided opinion on the suitability of the location of the Domain Station.	
• Commuter parking along the rail corridor needs to be improved • No construction routes in West Footscray are provided	MM314	It is acknowledged that there is no construction haulage routes provided for the Western Turnback site. It is expected that volumes accessing this site will be minimal.	
• Permanently closing Albert Road south will place additional pressure on Albert Road north. • Concerned about disruptions to trams including the rerouting of tram route 8 • Use of Albert Street by heavy construction vehicles 24/7	MM315	Section 9.10.1.2 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the ultimate road layout once construction is complete, including the closure of Albert Road South. These results do show an increase in delays along Albert Road in both peak periods due to the proposed changes to the road network.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Maintaining access to building at 16-18 Albert Street at all times • Durations of full closure of Albert Street for construction activities • Location of proposed bicycle loops near building • Pedestrian access around construction site and DDA access to building • Loss of parking spaces along Albert Road due to construction.		The re-routing of tram route 8 will need to include the provision of new tram stops that are designed to be safely accessed by pedestrians. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • measures to ensure that emergency service access is not inhibited as a result of the construction work sites management of any temporary or permanent full or partial closures to Albert Road.	
• Concerned impact of road closures, both temporary and permanent, on access in and around proposed construction sites • There is insufficient detail in the EES to inform planning	MM316	At this stage of the planning process, there is not sufficient detail to enable planning of emergency access. The Environmental Performance Requirements require a transport management plan which includes suitable measures to ensure that	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
requirement for emergency access		emergency service access is not inhibited as a result of the construction work sites.	
• Not enough detail around how pedestrians and traffic congestion will be managed around Melbourne University during construction • No details on access arrangements for large vehicles to Melbourne University • No details on the operational requirements for construction vehicles such as holding areas • Parkville Station should have access to the south of Grattan Street • Increased pedestrian demand across Grattan Street once the station is open will increase the risk of pedestrian/vehicle conflict • Grattan Street should remain permanently closed	MM318	Appendix F of the Transport Impact Assessment shows the pedestrian routes that will be impacted during the construction phase. It shows that all pedestrian access and footpaths will be maintained around Melbourne University. It also shows the proposed hoarding around the construction site, with a gap provided through the construction site from Leicester Street into Melbourne University. It is acknowledged that there is insufficient details on the locations of construction vehicle holding areas, these will need to be developed by the contractor. Grattan Street will be reduced to a single lane in each direction in its ultimate state. This will make it easier for pedestrian to cross and reduce the risk of pedestrian/vehicle conflict.	
• Closure of Bowen Crescent will place additional pressure on Queens Lane, requiring more traffic to turn out onto Kings Way to access St Kilda Road	MM319	The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction,	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		including management of any temporary or permanent full or partial closures of traffic lanes.	
• Trucks accessing the South Yarra Siding will need to use Osborne Street, which is currently a critical route for local residents. Construction traffic using Osborne Street will create traffic chaos • On-street parking is already difficult for residents along Osborne Street. This will be made worse with construction activity	MM325	Section 8.11.3 of the Technical Appendix D – Transport Impact Assessment provides a forecast of the number of construction vehicles accessing the site. The overall truck volumes accessing this construction site are expected to be 62 trucks per day, during the peak of the constriction. These trucks would operate during standard working hours. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures to Osborne Street and William Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		These plans, when developed should alleviate some of the concerns raised.	
• Concerned about the reduced access to Young & Jackson during construction • 24/7 access is required to Young & Jackson via Cocker Alley	MM326	Appendix F of the Transport Impact Assessment shows the pedestrian routes that will be impacted during the construction phase. It shows that all pedestrian access and footpaths will be maintained around Young & Jackson. The construction work site outline shown in Figure 7-15 of the Technical Appendix D – Transport Impact Assessment shows the area proposed to be used for construction. It is difficult to determine from this drawing if Cocker Lane will still be available during construction.	
• Sufficient accommodation for the forecast pedestrian volumes at the stations must be provided • All pedestrians will need to cross Grattan Street to get to developments on the southern side • Underground pedestrian connections should be provided at CBD North and South Stations to reduce at-grade pedestrian crossings	MM328	The layout of the footpaths surrounding the stations will need to take into account the safe movement of pedestrians, which will include the additional pedestrians forecast due to Metro. Safe pedestrian connections across Grattan Street will need to be provided as part of the redesign of Grattan Street. The reduction of Grattan Street down to a single lane in each direction will make it safer for pedestrians to cross the road. It is acknowledged that there has not been an assessment performed on the capacity of footpaths surrounding the stations.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• No analysis has been provided of footpath capacity			
• No transport issues raised	MM329	There are no issues to be commented on here.	
• Construction works at Domain will make it difficult for elderly to access nearby health services • Construction work will also restrict access to on-street parking for visitors and deliveries • Concerned about emergency access to their building	MM330	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • measures to ensure that emergency service access is not inhibited as a result of the construction work sites • implementation of active control at construction work site access points to maintain safety by avoiding potential	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		conflicts between trucks, pedestrians and cyclists.	
• Closure of Bowen Crescent will limit access to their building • Reduced on-street parking for visitors during construction • Does not want bicycle lanes in vicinity of their building	MM333	The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • implementation of active control at construction work site access points to maintain safety by avoiding potential conflicts between trucks, pedestrians and cyclists. • management of any temporary or permanent full or partial closures to traffic lanes.	
• Osborne Street is very busy and narrow. Mixing local traffic with construction traffic is impractical • Traffic lights at Toorak Road and traffic calming will be needed • Construction workers not allowed to park on-street • Residents provided with full time access to their driveways	MM339	Section 8.11.3 of the Technical Appendix D – Transport Impact Assessment provides a forecast of the number of construction vehicles accessing the site. The overall truck volumes accessing this construction site are expected to be 62 trucks per day, during the peak of the constriction. These trucks would operate during standard working hours. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including:	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures to Osborne Street and William Street. These plans, when developed should alleviate some of the concerns raised.	
• Does not support truck route 1 in the Arden precinct • Route 1 travels along residential roads and will create a safety hazard for pedestrians	MM342	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, which includes Miller Street. I agree that route 1 is not appropriate.	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Concerned about the multiple construction projects across Melbourne and the combined impacts • Public transport network changes to support the construction of Metro need to be committed to before construction starts • It is not clear if bicycle facilities at the stations include Melbourne Bike Share Stations • Drawings do not indicate changes to the footpaths surrounding the stations. This is a concern given the large number of pedestrians that the stations will generate. • Pedestrian connections between the Arden Station and North Melbourne Station need to be considered • Concerned about the closure of Grattan Street during construction given limited alternative east-west routes. Queensbury Street should be	MM344	The Melbourne Metro EES was not able to assess other projects occurring at the same time, such as Western Distributor, as there was limited information available. The Western Distributor EES will undertake a combined analysis of construction impacts. The Environmental Performance Requirements require that traffic management plan(s) must be developed recognising other projects operating concurrently, where relevant. Details on bicycle facilities have not been fully developed as yet. Detailed drawings of the areas surrounding the stations have not been produced as yet. However, these drawings will take into consideration the safe and efficient movement of pedestrians. Section 8.7.3 of the Technical Appendix D – Transport Impact Assessment provides the traffic assessment of the proposed temporary closure of Grattan Street. It shows that the surrounding road network is forecast to operate successfully during construction, however Queensberry Street and Swanston Street will see increases in traffic volumes due to diversions. The mitigation treatments noted in this submission are worthy of consideration in the range of further	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
used for diversion with on-street parking banned • Clearways on La Trobe Street should be in place during construction of CBD North • A construction methodology should be developed to minimise the closure of Flinders Street • The closures on St Kilda Road will divert traffic to Punt Road, Queens Way, Kings Way – all of which are already heavily congested – Details should be provided on additional investigations • Turn restrictions should be considered along St Kilda Road during construction to improve traffic flow • On-street parking should be removed from St Kilda Road in its ultimate layout		mitigation treatments and the development of the traffic management plans. I understand that additional work is underway to assess the impacts on Kings Way to be able to accommodate the diverted traffic. These additional tasks are listed below Table 8-38 in the Transport Impact Assessment.	
• Reductions in traffic lanes on St Kilda Road will restrict access from building. Will need to use Kings Way which is already congested	MM346	The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including:	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road; and • Provision of complementary improvements to Kings Way and other roads to accommodate additional traffic that may use these roads, and to assist traffic flow in St Kilda Road for the duration of the works.	
• It is not clear how passengers from Frankston and Sandringham lines would access Parkville Station prior to reaching Flinders Street Station or Melbourne Central Station	MM347	Figure 5-4 of the Technical Appendix D – Transport Impact Assessment provides the new rail network configuration with Melbourne Metro. It shows that passengers from the Frankston Line could access Parkville Station via a transfer at Caulfield Station. However passengers on the Sandringham line will need to change at Flinders Street Station in order to access Parkville Station.	
• Concerned about emergency vehicle access to buildings along St Kilda Road • Closure of Bowen Crescent will require residents to enter/exit car park via Queens Lane which is unsafe due to poor sight distance • On-street parking along St Kilda will be removed during construction	MM349	The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road; • alternate parking where possible to replace parking lost on St Kilda Road; and	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• Provision of complementary improvements to Kings Way and other roads to accommodate additional traffic that may use these roads, and to assist traffic flow in St Kilda Road for the duration of the works.	
• Concerned about new bridge in Osborne Street for construction access • Concerned about the number of trucks accessing the site each day • Concerned about reduced on-street parking for visitors • No details on locations of construction worker parking	MM352	Section 8.11.3 of the Technical Appendix D – Transport Impact Assessment provides a forecast of the number of construction vehicles accessing the site. The overall truck volumes accessing this construction site are expected to be 62 trucks per day, during the peak of the constriction. These trucks would operate during standard working hours. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• management of any temporary or permanent full or partial closures to Osborne Street and William Street. These plans, when developed should alleviate some of the concerns raised.	
• Concerned about reduced access to parking during construction. On-street parking should be maintained for residents only • Osborne Street will be used for construction access. This will disrupt residents who also use this route • Resident off-street parking will be hindered due to construction	MM354	Section 8.11.3 of the Technical Appendix D – Transport Impact Assessment provides a forecast of the number of construction vehicles accessing the site. The overall truck volumes accessing this construction site are expected to be 62 trucks per day, during the peak of the constriction. These trucks would operate during standard working hours. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures to Osborne Street and William Street.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		These plans, when developed should alleviate some of the concerns raised.	
• Traffic assessment of impacts along St Kilda Road are overly optimistic • The reduction in lane capacity combined with additional construction vehicles will create congestion throughout the day • No confidence in the transport modelling that shows an increased delay of only 60 seconds • Kings Way cannot be a suitable alternative route as it is already full • Construction traffic utilising Albert Road, Bowen Crescent and Park Street will have an unacceptable impact on residents • Construction zone around Domain Station should be kept to a minimum to avoid impacts on Albert Road and associated car parking	MM356	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. Turn bans could further improve the operation of St Kilda Road during construction. Additional work is underway to assess the impacts on Kings Way to be able to accommodate the diverted traffic. These additional tasks are listed below Table 8-38 in the Transport Impact Assessment. Albert Road is one of multiple construction routes identified to the Domain Site. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		• measures to ensure that emergency service access is not inhibited as a result of the construction work sites • management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. Provision of complementary improvements to Kings Way and other roads to accommodate additional traffic that may use these roads, and to assist traffic flow in St Kilda Road for the duration of the works.	
• Concerned about increases in traffic in North Melbourne due to construction vehicles and the impact this will have on access to their business along Laurens Street • Loss of access to the weighbridge could result in trucks having to reverse across Laurens Street which would increase congestion and reduce safety. This change to operation has not been considered in the EES • Construction traffic should not be allowed to use Laurens Street south	MM357	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Arden station precinct, which includes Laurens Street. Only one route travels along Laurens Street south of Queensberry Street, but due to its indirect alignment it is possible that this will not be used for construction haulage reducing the impact on this business. I do not believe that haulage route 1 is appropriate. The Environmental Performance Requirements require a transport management plan which includes minimised disruption to all road users and car parking and which outlines a provision of	Road Transport (Construction Phase), the transport management plan must include: • Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Haulage routes 1 and 2a should not be utilised • Parking of all construction vehicles should take place off-street • Business must be allowed to review and comment on any management plans in the area		alternate parking where possible to replace parking lost on Lauren Street.	
• Rerouting of tram route 8 will require students to walk further to school • Concerned with safety of students walking along Park Street, potentially at night • Wants confirmation that tram route 8 will be reinstated along Domain Road once construction is complete • Upgrade the tram stop at the corner of Toorak Road and Park Street to accommodate increased passenger numbers • Confirm that a tram stop will continue to be available at or near the existing Domain Interchange	MM358	It is acknowledged that students will need to walk further due to the relocation of tram route 8 to Toorak Road. All works impacting on the transport network will need to consider the safe movement of all users. Tram stop design has not been considered as yet in this stage of the planning for Melbourne Metro. The drawings provided in Appendix E of the Traffic Impact Assessment show the ultimate layout of the intersection of Domain Road and St Kilda Road. This shows the tram tracks along Domain Road being reinstated for the use of tram route 8. It also shows the ultimate layout of Toorak Road West which does not include any tram tracks.	

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• Wants confirmation that Birdwood Avenue will remain open throughout the day • Improvements to Park Street to facilitate increased traffic flow, including intersection upgrades • Does not want Anderson Street used as haulage route • Does not want any parking changes on Anderson Street or Clowes Street		No closures of Birdwood Avenue are currently proposed. Section 8.10.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Domain station precinct, however the proposed haulage routes do not include Anderson Street. Contractors will not be permitted to utilise roads for haulage that have not been approved by the relevant road authority. No changes to parking on Anderson Street or Clowes Street are currently proposed.	
• Concerned that the loss of a rail station on the Dandenong line serving South Yarra is unacceptable and will adversely impact the local community • Concerned about the construction impacts along St Kilda Road	MM362	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road.	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• An interchange at South Yarra is very important to maintain public transport accessibility			
• An underground connection between the north-east corner of La Trobe Street to Melbourne Central should be provided • A single platform stop in Royal Parade north of Grattan Street is unacceptable. Should be separated stops either side of Grattan Street. A single stop would be overloaded with pedestrians • An underground connection from Parkville Station to Melbourne University should be provided • Does not support the diversion of tram route 8 • Does not believe that Metro will reduce tram travel along St Kilda Road	MM364	Pedestrian access across the intersection at La Trobe Street and Melbourne Central will be maintained at ground level to provide access to surrounding facilities such as RMIT and State Library via existing signalised intersections. A single platform stop is not proposed north of Grattan Street on Royal Parade. The drawings provided in Appendix E of the Traffic Impact Assessment show the ultimate layout of the tram stop, which provides two platforms. The downgrading of Grattan Street to a single lane in each direction will provide improved pedestrian safety and access across Grattan Street. Tram route 8 is required to be relocated due to the closure of Domain Road. This route will be reinstated once construction activities have completed on Domain Road.	
• Access during construction of the Western Portal requires further consideration to maintain safe access to South	MM365	Section 8.5.3 of the Technical Appendix D – Transport Impact Assessment provides details on the traffic disruptions due to works at the Western Portal, including the closure of Childers Street.	Road Transport (Construction Phase), the transport management plan must include:

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
Kensington Station and the business park • Does not support the relocation of the shared path along Childers Street • Concerned about the impacts to residents around the Arden Precinct due to construction traffic 24/7 operation • Construction routes in Arden should not use residential roads • The impacts of the closure of Grattan Street will require mitigating measures on other roads such as Queensberry Street • The impacts of the closure of Grattan Street is underestimated, particularly when combined with the impacts of the Western Distributor Project • The permanent closure of Franklin Street is not supported • Design modifications are required to facilitate improved pedestrian safety at Swanston Street and La Trobe Street		During construction the shared path along Childers Street will be removed however an alternate route will be provided through JJ Holland Park. Given that route 1 is not as direct as other haulage routes, it is considered unlikely that heavy vehicles will take this route and that another route would be more likely for vehicles travelling to and from Dynon Road. The Traffic Management Plans could look to minimize night time truck movements to the non-residential routes where possible. The Metro EES was not able to assess other projects occurring at the same time, such as Western Distributor, as there was limited information available. The Western Distributor EES will undertake a combined analysis of construction impacts. The environmental requirements do require that traffic management plan(s) must be developed recognising other projects operating concurrently, where relevant. Details on bicycle facilities have not been fully developed as yet.	• Construction routes should look to minimise haulage along residential streets, especially for night time haulage, where possible. Direct routes should be used where possible to limit the amount of accelerating and braking of heavy vehicles in residential areas.

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• The location of the secondary entrance at City Square must allow for vehicle access to the Square • The potential impacts of the Domain Road closure on local traffic movements has not been fully assessed • Does not satisfactorily address impacts from the diversion of tram route 8		Pedestrian access across the intersection at La Trobe Street and Melbourne Central will be maintained at ground level to provide access to surrounding facilities such as RMIT and State Library via existing signalised intersections. Additional work is underway to assess the impacts on Kings Way to be able to accommodate the diverted traffic. These additional tasks are listed below Table 8-38 in the Transport Impact Assessment. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures of traffic lanes including along Grattan Street. The permanent closure of Franklin Street has been addressed in Technical Note 012 and it is now	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
		expected to be reopened after construction for one lane in each direction. The Environmental Performance Requirements require • Develop and implement measures to minimise disruption to the tram and bus networks resulting from the construction of Melbourne Metro in consultation with the relevant road management authorities and to the satisfaction of PTV, including (but not limited to): o Tram operations on Toorak Road and the diversion of the No. 8 tram route	
• Temporary closures will have an impact on local traffic patterns and public transport • Construction traffic will add to existing local traffic that could affect the surrounding road network	MM366	Additional work is underway to assess the impacts on Kings Way to be able to accommodate the diverted traffic. These additional tasks are listed below Table 8-38 in the Transport Impact Assessment. Further assessment and analysis will be undertaken for all expected impacts to the transport	

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• Further analysis needs to be undertaken to assess the impacts of the permanent closures at Grattan Street, Franklin Street and the reconfiguration of St Kilda Road		networks to inform the development of the required transport management plans. VicRoads will be consulted on the development of these plans.	
• Schools will be significantly affected due to the closure of Domain Road and lane restrictions along St Kilda Road. Impacts include restricted access and loss of parking for parents and visitors • Concerned about construction haulage routes and vehicle storage • Insufficient attention has been paid to significant disruption and delays due to construction • Should be a stronger requirement that alternate parking be provided to replace lost parking • Should be a stronger requirement that construction parking be provided	MM367	Section 8.10.3 of the Technical Appendix D – Transport Impact Assessment provides the results of the transport modelling of the impacts of construction in the Domain Precinct. This showed that with a combination of traffic diversions, public transport and travel demand management, congestion could be managed along St Kilda Road. Monitoring of the traffic performance is a requirement of the project.The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • management of any temporary or permanent full or partial closures of traffic lanes	Monitoring of all modes of transport to be undertaken throughout the construction period. If adverse impacts occur due to network changes, mitigating measures are to be developed. Road Transport (Construction Phase), the transport management plan must include: • Provision of sufficient off-street car parking, or alternative parking arrangements, for construction workers so that they do not need to use existing on-street parking spaces.

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• No discussion about maintaining access for waste collection or off-street car parks • Additional analysis needs to be undertaken to assess travel time delays, included sensitivity tests, extension of the microsimulation model to provide travel time analysis of all possible routes (including diversions) and include construction vehicles in the microsimulation model • Parking along school frontages on St Kilda Road should be maintained • Relocation of tram route 8 significantly alters existing access arrangements • No assurance that tram route 8 will be reinstated after construction • No consideration of capacity of public transport services • No confirmation that public transport services will run as currently scheduled		• provision of alternate parking where possible to replace parking lost on St Kilda Road and Albert Road. • Provision of car parking for construction workers where possible Additional work is underway to assess the impacts on Kings Way to be able to accommodate the diverted traffic. These additional tasks are listed below Table 8-38 in the Transport Impact Assessment. The drawings provided in Appendix E of the Traffic Impact Assessment show the ultimate layout of the intersection of Domain Road and St Kilda Road. This shows the tram tracks along Domain Road being reinstated for the use of tram route 8. It also shows the ultimate layout of Toorak Road West which does not include any tram tracks. The transport management plans will provide details on pedestrian access through and around the construction zone..	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
• Plans do not currently show pedestrian access routes across St Kilda Road in construction zone • Plans do not ensure that pedestrian access will be maintained along all school frontages • Existing traffic studies are insufficient and overly optimistic • No details provided on roads other that St Kilda Road • On-street parking should be provided along St Kilda Road in the ultimate layout			
• Concerned that Bowen Crescent is identified for haulage to the Domain site is this is the only entry to their building. • Bowen Crescent is narrow and not appropriate for significant truck traffic	MM368	Section 8.10.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed haulage routes that may be used to access the Domain station precinct, which includes a number of possible routes along Bowen Crescent. The suitability and viability of construction haulage routes will be considered in the development of the traffic management plans.	
• Concerned that passengers from the Cranbourne/Pakenham line will	MM370	It is likely that passengers travelling from the Cranbourne/Pakenham line would transfer at	

Issue	Submission No.	Response	Any Recommended New or Modified Environmental Performance Requirement
get off at Domain and head back to South Yarra – tram corridor impacts • It is critical that traffic management plans are properly implemented • Any options to enhance the transport network during the works at Domain should be investigated • Local roads should not be used as diversion routes during construction • Residents must be able to access Albert Road at all times. Residents on Albert Road must be able to access St Kilda Road during construction and not divert via Kings Way • Construction deliveries should not use residential roads. Deliveries should use the same route as spoil haulage • Safe and convenient pedestrian movement across and along St Kilda Road should be maintained throughout construction		Caulfield Station to access South Yarra Station, rather than backtrack from Domain Station. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users during construction, including: • construction routes to be developed recognising sensitive receptors. • management of any temporary or permanent full or partial closures to St Kilda Road, Domain Road and Albert Road. • Provision of complementary improvements to Kings Way and other roads to accommodate additional traffic that may use these roads, and to assist traffic flow in St Kilda Road for the duration of the works • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access	

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• Construction workers should park in designated locations only			
• It is critical that the contractor comply with the performance requirements relating to the impact of construction on traffic	MM371	Agreed	
• Greater investigation should occur with the aim of achieving positive traffic management outcome for the Parkville Precinct • Current traffic management plans do not take into consideration off-street car parks in the surrounding the Parkville Precinct • The removal of the right turn from Royal Parade into Grattan Street means traffic must use the Haymarket roundabout which is already saturated • Supports the closure of Grattan Street to all vehicles, excluding local, public transport and emergency services	MM373	Section 9.7.12 of the Technical Appendix D – Transport Impact Assessment shows the future legacy conditions surrounding the Parkville station. It does show that the road network surrounding the Parkville station operating slightly worse when compared to no project. This is due to the relocation of road space such as the downgrading of Grattan Street and the removal of turning movements to allow for new tram stops. A range of mitigation treatments will be explored for all precincts to minimise impacts. These will be considered in the development of the traffic management plans.	
• Concerned about access restrictions to Laurens Street	MM377	Section 8.6.2 of the Technical Appendix D – Transport Impact Assessment shows the proposed	

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from their site during construction		haulage routes that may be used to access the Arden station precinct, which includes a number of possible routes including along Laurens Street. The Environmental Performance Requirements require a transport management plan to minimise the disruption to all road users and for construction routes to be developed recognising sensitive receptors.	