BACKGROUNDBACKGROUND

Introduction

1. This submission is made on behalf of Public Transport Victoria (PTV) to the Inquiry and Advisory Committee (IAC) convened to consider public submissions in relation to the Melbourne Metro Rail Project (Project).

2. The key purpose of this submission is to:

   • reinforce PTV's support for the Project in the form it was publicly exhibited, subject to any amendments to the Project concept design advised during the course of the IAC hearing;

   • to outline the public transport system enhancements that are enabled by the Project and will be delivered in conjunction with it and highlight the importance of the Project to the development of Melbourne's public transport system;

   • explain the role that PTV will perform, through the Traffic and Transport Working Group (TTWG) and working with the Melbourne Metro Rail Authority (MMRA) and tram and train franchisees, in managing the construction phase impacts of the Project on the public transport network;

   • respond to a number of issues raised by submitters and in the evidence to assist the IAC in its consideration of the environmental effects of the Project, and in particular to respond to the submissions made by the City of Stonnington insofar as they argue for the inclusion of a new underground South Yarra station in the Project concept design; and

   • present a table which provides a summary response to key issues raised by submitters that are relevant to PTV.
About PTV

3. PTV is the trading name of the Public Transport Development Authority, a statutory authority established by section 79A of the Transport Integration Act 2010 (Act).

4. The primary objective of PTV is set out in section 79AD(1) of the Act, and is:
   to plan, coordinate, provide, operate and maintain a safe, punctual, reliable and clean public transport system consistent with the vision statement and the transport system objectives.

5. PTV’s primary object is elaborated upon in section 79AD(2) of the Act and includes (amongst other things):
   • ensuring, in collaboration with other transport bodies and public entities, that the public transport system operates as part of an integrated transport system which seeks to meet the needs of all transport system users;
   • managing the public transport system in a manner that supports a sustainable Victoria by seeking to increase the share of public transport trips as a proportion of all transport trips in Victoria and actively promoting public transport as an alternative to car travel; and
   • promoting economic prosperity through efficient and reliable movement of public transport users while also supporting rail freight services.

6. In seeking to meet its legislative objective, PTV’s core functions include:
   (a) acting as the public face of the public transport network and as an advocate for the public transport system;
   (b) constructing, maintaining or varying, or assisting other persons or bodies to construct, maintain or vary, public transport infrastructure;
   (c) managing operational public transport infrastructure by (amongst other things) auditing the condition of and setting standards for and setting asset management strategies for the maintenance and condition of rail infrastructure and transport assets;
   (d) planning for the development of public transport networks as part of an integrated transport system, including by undertaking feasibility studies;
   (e) managing the co-ordination of trams, trains and buses including by setting standards and parameters for timetabling and connectivity of passenger services;
(f) developing and implementing operational and service policies, plans, guidelines, standards, limits and practices for the public transport system;

(g) providing and operating, or facilitating the provision and operation of, public transport by entering into and managing contracts for passenger services and other ancillary or incidental services (such as ticketing systems) and operating passenger services, procuring, putting into service and maintaining rolling stock;

(h) developing and implementing effective environmental policies, strategies and management systems under the Department's planning framework to support a sustainable transport system including minimising any adverse environmental impacts from the public transport system.

7. In practical terms, PTV acts as a system authority for the Victorian public transport system and an advocate for the public transport system. PTV aims to improve public transport in Victoria by ensuring better coordination between modes, facilitating expansions to the network and promoting public transport as an alternative to the car. PTV manages the contracts with rail, tram and bus operators.

8. PTV seeks to plan services and networks to meet forecast demand and ensure that public transport networks are not compromised and that they evolve to meet community needs and expectations in a way that represents “value for money” for the State of Victoria.

PTV's interest in the Melbourne Metro Rail Project

9. The MMRA is the delivery authority with responsibility for the Project, and the Project proponent for purposes of the assessment of the Environment Effects Statement (EES) for the Project. While PTV is not responsible for the delivery of the Project, the Project will have significant implications for PTV's role as the public transport system operator. The key implications for PTV are that:

- the infrastructure provided by the Project will form part of the public transport network that is operated by PTV. This means that PTV will have operational responsibility for the Project works following their completion;

- the construction of the Project will necessitate some temporary and permanent alterations to the physical configuration of, and the operation of services on, the public transport network;
the construction of the Project is part of PTV's long term vision for the broader metropolitan rail network as outlined in the Network Development Plan – Metropolitan Rail (December 2012) (Network Development Plan); and

complementary changes to the tram network will improve access to the western parts of the CBD, South Melbourne and Southbank with Domain Station being a key interchange. The Project augments public transport capacity and for many will provide a more attractive travel option through better travel times between Domain and Parkville, which will result in some passengers choosing to shift from tram to train. This will enable some trams to be reallocated across other parts of the tram network, particularly services to the western end of the CBD. PTV is responsible for the design and implementation of the broader public transport system changes that will be enabled by the Project.

PTV’s involvement in the Melbourne Metro Rail Project

10. As would be expected given PTV's statutory objectives and functions, PTV has played a role in the development of the concept design and the Business Case for the Project. PTV has consulted with MMRA and has provided input into a number of facets of the Project, including:

- **Strategic justification for the Project**: PTV was involved in undertaking the transport system analysis that informed the Business Case underpinning the Victorian Government's decision to proceed with the Project;

- **Delivery requirements for the Project**: PTV was involved in contributing to the development of the Project requirements to which the Project concept design responds. PTV has specified the rolling stock and is managing the process to select the rolling stock manufacturer;

- **Demand forecasting for the Project**: PTV has shared data and expertise in relation to public transport network wide demand modelling to forecast likely future demand as a consequence of the delivery of the Project;

- **Integration of the Project into the public transport network**: PTV's public transport service plans will determine how the public transport network can be optimised once the Project is in operation; and

- **Participation in the TTWG**: PTV participates in the TTWG's work of reviewing and providing feedback on Transport Management Plans, transport modelling and proposed transport network upgrades to mitigate the transport effects of
constructing the project. PTV has participated in the TTWG since its inception and will continue to do so.

Demand Forecasting and project assessment

11. PTV holds expertise in areas such as public transport network wide demand forecasting and modelling, economic assessments of public transport infrastructure and operations, and engineering and technical standards for public transport infrastructure.

12. PTV prepared the public transport network wide demand forecasts for the Business Case, and has an interest in ensuring that when the Project is completed, the final outcome meets PTV's long term objectives to grow and improve the public transport network.

13. The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) has responsibility on behalf of the Victorian Government for the development, improvement and maintenance of the state-wide Victorian Integrated Transport Model (VITM) which is used for demand forecasts. The Transport Demand (Modelling) Steering Committee is a key mechanism for managing demand forecasting activities.

14. The forecasts in the Business Case were prepared using the DEDJTR Reference Case, which provides a common set of inputs about such matters as demographic and land use projections, road and public transport networks and parking costs and vehicle operating costs. The Reference Case has been created with the intention of providing a consistent set of inputs to be used when undertaking transport demand modelling, including for the assessment of major transport infrastructure projects. The use of the Reference Case is intended to ensure that the results of different transport modelling exercises for different projects can be compared as they rely on a set of common core inputs.

15. Assessment of Melbourne Metro in the Business Case involved comparison of a Melbourne Metro Program and Extended Program against a "Base Case" which assumes a public transport network where Melbourne Metro and its related projects have not been built using VITM and checked by using the Zenith model.

16. In general terms, the forecasting approach has four key steps that involve:

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1 In the Business Case the Melbourne Metro Program was defined to mean (tunnels, stations and Wider Network Enhancements) the Extended Program was defined to include a series of Enabled Investments see p 136 and para 105 of this Submission for further information.

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• Trip generation to identify the number of trip origins at a particular location;
• Trip distribution to identify where these trips are destined;
• Mode choice to identify what proportion of trips use car, public transport, etc.; and
• Service selection to identify what combination of services are used to complete public transport trips.

17. The "ClicSim" model was used to produce station and interchange demand forecasts as well as to undertake some crowding analysis, to help predict how train passengers will move around the network. ClicSim is a mesoscopic model that aims to predict how train passengers will move around the network with a particular focus on central Melbourne. It provides insight at a level of detail that the four-step models cannot provide. ClicSim relies on outputs from VITM to provide growth rates, which it then applies to a station to station matrix of observed passenger behavior at stations and on trains.²

18. PTV ran base case scenarios without the Extended Program for 2011, 2021, 2031 and 2046. Project case forecasts were then undertaken for the Melbourne Metro Program and the Extended Program. ClicSim forecasts were prepared for the Melbourne Metro Program only. The results of these demand forecasts are summarized in Appendix 5 to the Business Case. These forecasts were generally approved in a peer review by ATMC, which is contained in The Transport Modelling for Melbourne Metro – Peer Review of Forecasting Reports – Addendum (February 2016).

19. PTV provided its public transport network demand forecasts to MMRA so that it could use them to inform the design of the Project, and to develop localised forecasts such as street-based forecasts in precincts around proposed stations. The modelling undertaken by PTV provided a rigorous technical basis for understanding current and future public transport demand and travel behaviour, within a broader context of economic, demographic and land use factors. This modelling has been very important to developing the Project scope and thus forms a strong foundation for the delivery of the Project and its associated benefits. It also ensures that the final outcome will meet the long term objective of improvement and growth for the public transport network.

²Appendix 5, p 37. For more details about the transport demand modelling methodology see Appendix 5 to the Business Case in general and Part 4 “Methodology” of Appendix 5 in particular.
The Environmental Performance Requirements

20. PTV supports the Environmental Performance Requirements (EPRs) proposed by MMRA (in IAC Version 2). In general terms, PTV supports the drafting of EPRs which set outcome based performance standards rather than specifying prescriptive compliance limits, particularly in relation to matters such as noise and vibration.

21. In particular, PTV submits that:

a) It supports the TTWG as a highly effective mechanism for managing the transport and traffic impacts of the Project. PTV has been a participant in the TTWG since its inception and regards it as an appropriate forum for relevant stakeholders to meet and discuss matters relating to the management of transport, including public transport and traffic matters, and to inform the co-ordinated decisions to be made by relevant decision makers (led by MMRA, it includes agencies such as PTV, VicRoads, councils and others) about transport routes, road closures, traffic calming and other similar matters during the construction phase of the Project (EPR New TA);

b) It is inappropriate for the EPRs to dictate particular traffic routes or alignment options that public transport services should or should not adopt during the construction phase. To do so would second guess the deliberation of the TTWG in these matters and would undermine the statutory decision making responsibility of relevant authorities. In particular, the IAC should not adopt the recommendation of the Melbourne City Council that public transport services be prohibited from using Gatehouse Street, Parkville, during the construction phase. Concerns about the use of Gatehouse Street will be considered by the TTWG of which the City of Melbourne is a member;

c) PTV supports the development of transport management plans to manage and mitigate the traffic and transport impacts of the construction of the Project and considers that such transport management plans should prioritise traffic management solutions that best facilitate the operation of the public transport system (EPR T1);

d) PTV supports the development and implementation of measures to minimize the disruption of the construction of the Project on the tram and bus networks and will continue to work with MMRA and through the TTWG in this regard (EPR T2);
e) PTV supports the need for a review, in the lead up to and during the operational phase of the Project, of tram and bus services in areas proximate to the Project, or where the Project may be likely to alter demand patterns for other public transport modes and notes that it undertakes reviews of this type as an ordinary part of its service planning process (EPR T8);

f) PTV endorses the use of the Victorian Passenger Rail Infrastructure Noise Policy as the appropriate guidance document in relation to the management of noise arising from the operation of the rail network and submits that the adoption of prescriptive compliance limits would unduly prejudice the efficient operation of the rail network and would create a regulatory patchwork whereby parts of the rail network were required to be operated subject to different noise management regulatory frameworks (EPR NV 15);

g) PTV endorses the use of the Rail Infrastructure Noise Guideline, 17 May 2013, as the appropriate source of ground-borne noise guideline targets and regards it as appropriate that exceedences of the levels specified in this guideline trigger an assessment of reasonable mitigation measures. Again, PTV does not support the adoption of prescriptive compliance limits for ground-borne noise (EPR NV 17);

h) PTV endorses the use of the values in Table 1 in BS6472-1:2008 or background levels (whichever are higher), as the appropriate source of operational vibration targets and regards it as appropriate that exceedences of these levels trigger an assessment of reasonable mitigation measures. Again, PTV does not support the adoption of prescriptive compliance limits for vibration (EPR NV 18); and

i) PTV supports the adoption of necessary and appropriate flood management measures to protect the Project, informed by a flood risk immunity assessment. PTV notes the recommendation of Mr McRann that flood gates, or similar, be installed at the Jolimont portal to the Melbourne Underground Rail Loop, in order to protect the interconnect between the Melbourne Underground Rail Loop and the Project from flooding. PTV will participate in the flood risk immunity assessment but at this stage does not consider there is sufficient evidence upon which the IAC could recommend the Project include flood gates at the Jolimont portal of the Melbourne Underground Rail Loop (EPR SW 1).
PROJECT BENEFITS

22. PTV refers to its opening submission which dealt with the project benefits.

23. PTV wishes to build upon that submission by making the following further submissions regarding the project benefits.

Increased capacity to meet demand and respond to a growing and changing Melbourne

24. The Project provides a significant increase in capacity on a number of lines in the metropolitan rail network. Importantly the Project makes it possible to operate more trains through the inner core of the network, and for High Capacity Metro Trains trains to run from Sunbury to Cranbourne/Pakenham. These key changes respond to the rapid growth in demand for travel being driven by Melbourne's growth and development (as described in PTV's opening statement). The Project is expected to meet demand and therefore reduce crowding compared to what would otherwise occur without the Project on a number of lines. The Project will:

(a) enable more trains able to run in and out of the city on the Sunbury, Cranbourne and Pakenham lines as well as the Werribee, Craigieburn, Upfield, Sandringham and Frankston lines;
(b) provide capacity for 39,000 more passengers to travel into the city during each peak period from the first day of operation;
(c) lay a foundation for further development of the rail network, providing capacity for the further construction, extension and electrification of rail lines across Melbourne and introduction of longer trains, as outlined in PTV's Network Development Plan – Metropolitan Rail (December 2012). This is further exemplified by the Extended Program described in the Business Case; and
(d) provide increased station capacity to handle city-bound passengers through the construction of five new station in inner-Melbourne and redistribution of key interchange locations.

25. Without the Project demand pressures would be expected to build on lines that are currently travelling through North Melbourne Station, particularly the Sunbury, Werribee and Craigieburn lines from the early 2020s. Prior to the time Melbourne
Metro is due to open, all these four lines through North Melbourne will have reached capacity.³

26. The Melbourne Metro Program delivers sufficient capacity to meet the longer term needs of many of these corridors. The Melbourne Metro Program will enable demand to be met on the Upfield corridor into the 2040s, and an additional 10 years of demand growth on the Werribee/Williamstown and Craigieburn lines and demand to be met on the Sunbury corridor until the late 2020s at which time the Extended Program will then be needed.

27. The Extended Program will deliver further capacity uplifts on the Sunbury corridor, and the Ballarat/Melton corridor together with the precursor upgrade of the Cranbourne/Pakenham line.⁴

28. Beyond the capacity uplifts provides by the Melbourne Metro Program and the Extended Program, PTV has a pipeline of projects that will be implemented in years to come to provide further capacity. While these projects remain subject to final funding approval from Government, the current pipeline of projects is outlined in its Network Development Plan. The Network Development Plan contemplates a range of further network expansions and system upgrades including the electricification of track to expand metropolitan train services to places currently only served by less frequent V/Line services, the continued rollout of HCMTs across the network, signaling upgrades to enable more services to run on the network and the associated timetable changes consistent with the evolution of the network towards a metro-style "turn-up-and-go" service model.

Increased independence of operation for greater reliability

29. The Project will deliver a dedicated tunnel through the city for the Sunbury and Cranbourne/Pakenham lines. This will reduce the complexity of the interrelated network, and the associated management of complex interactions between services operating across multiple lines (as described in PTV’s opening statement). By creating a new inner city line, and removing the need for planned interactions to work around congestion on other routes, the Project will improve the resilience, punctuality and overall reliability of the network.

30. Currently the metropolitan train network is broadly assembled into five groups, serving geographical areas across Melbourne:

³ Business Case, Appendix 5, p 46.
⁴ Business Case, Appendix 5, p 46.
• Northern Group (Craigieburn, Sunbury and Upfield lines);
• Cross-city Group (Werribee, Williamstown, Frankston and Sandringham lines);
• Dandenong Group (Pakenham and Cranbourne lines);
• Clifton Hill Group (South Morang and Hurstbridge lines); and
• Burnley Group (Glen Waverley, Alamein, Belgrave and Lilydale lines).

31. The ability to increase capacity on the current train network is limited as its configuration includes a number of constraints, in particular line convergences resulting in multiple lines sharing the same track alignment. The Regional Rail Link and other projects such as the Cranbourne/Pakenham line upgrade, the Melton duplication as part of the Ballarat line upgrade and the Hurstbridge Line upgrade, all play a role in addressing constraints, but further work is required.

32. The Project addresses the constraints on trains that currently travel through North Melbourne, as well as from the Cranbourne/Pakenham, Sandringham and Frankston lines by allowing a reconfiguration of the network to run:

• Sunshine – Dandenong Line (through the new Metro Tunnel);
• Cross-City Line Sandringham – Werribee and Williamstown (through Flinders St and Southern Cross);
• Frankston Loop Line (round the Melbourne Underground Rail Loop)); and
• Northern Loop Line (Craigieburn and Upfield lines round the Melbourne Underground Rail Loop).

33. Significantly this reconfiguration together with the infrastructure improvements that are part of the Melbourne Metro Program will enable metropolitan rail lines to operate independently, and so enable further improvements to be implemented on an individual corridor basis.

Improved access to and within central Melbourne and along corridors upgraded by the Project

34. The Project will directly deliver improved access to Central Melbourne, and along the growth corridors upgraded by the Project. The Project also has a series of network benefits which will improve access on other rail and tram lines and achieve broader network connectivity benefits.
35. The Project's improvements to access will include:

(a) constructing 5 new stations and accommodating more people travelling to the CBD through these stations;

(b) opening up direct heavy rail access to Arden, Parkville and Domain, increasing public transport capacity and mode share at these locations (as shown in Appendix 5 to the Business Case); 

(c) providing better connected, more frequent and more reliable trains for residents and activity centres along the lines upgraded by the Project;

(d) providing a heavy rail link from Domain to Parkville, which provides an alternative to the well-travelled Swanston St-St Kilda Rd and Elizabeth St-Parkville tram corridors. This will alleviate the pressure on the tram network to accommodate the growing numbers of passengers travelling to the Parkville and St Kilda Road precincts compared to what would otherwise have occurred without the Project. It will also enable a re-configuration of the tram network to respond to changing travel demand patterns and better connect busy precincts in the west and south of the CBD; and

(e) establishing Domain station as an important new interchange between the rail and tram networks, and provide better access to destinations to the south of the CBD, such as the Alfred Hospital and Southbank.

The Project is a city-shaping project that will support growth and urban renewal

36. As Melbourne grows and changes, it needs a public transport network that grows and changes with it. PTV's demand modelling and network planning seeks to ensure that the network responds in appropriate ways to growth and changes in travel patterns. Conversely, public transport networks have the ability to support and enable growth and urban renewal. The Project has enormous potential to shape and support the growth and expansion of Central Melbourne, the growth corridors to the south east and north west of Melbourne directly served by the Sunshine-Dandenong line, and broader metropolitan Melbourne (given the connectivity benefits and capacity uplifts that are enabled on a significant number of rail and tram services as a result of the Project).

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5 Business Case, Appendix 5.

7 Metropolitan Melbourne Structure Plan, Department of Planning and Local Infrastructure, 2014.
Melbourne Metro aligns with key components of the strategic planning direction set by Plan Melbourne, and due to its scale has a wide-reaching city-shaping influence. It will influence Melbourne's long-term urban form and agglomeration outcomes by supporting growth and demand for travel to key destinations including by:

(a) upgrading rail capacity to an expanding Central Melbourne, providing new stations and enabling more efficient travel to and across the CBD;

(b) upgrading rail capacity on lines that service:

(i) Melbourne's growth corridors in the south east (Dandenong Line) and north west (Sunbury line), as well as the south west (Werribee line) and north (Craigieburn line), and enables upgrades to the west as part of the Extended Program (Melton line);

(ii) five out of six existing and emerging national employment and innovation clusters (Parkville, Monash, Dandenong South, Sunshine, East Werribee); and

(iii) six out of nine existing metropolitan activity centres (Sunshine, Footscray, Broadmeadows, Dandenong, Fountain Gate/Narre Warren, Frankston).

The Project will also catalyse and support urban renewal in and around Central Melbourne. Arden Station will be integral to the success of the Arden Renewal Precinct, which is recognised as supporting the expansion of the central city and builds on links to the west, Parkville and the CBD.

The Project will deliver greater productivity and economic growth for Melbourne, by increasing capacity and improving access to the CBD and the west. PTV submits that efficient public transport has a strong role in encouraging jobs growth.

Greater transport capacity along rail corridors will also support urban renewal and development in inner Melbourne and along those corridors. These urban renewal areas will provide opportunities to grow employment, provide greater housing choice and diversity, and help to relieve pressure for housing on Melbourne's fringe.

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8 The inclusion of Melbourne Metro in the updated Plan Melbourne was foreshadowed in the "Plan Melbourne Refresh" Discussion paper which was released for comment in October 2015.

9 Business Case, p66

10 See Document 132, VPA submission "Planning the Arden Precinct".

11 Business Case, p 65
Maintaining and improving Melbourne's liveability

41. PTV submits that the Project is an integral and necessary step to improving and growing the public transport network. The Project and its associated network benefits will maintain and improve Melbourne's liveability. PTV submits that without the Project, Melbourne's liveability will be detrimentally affected.

42. The Project will support Melbourne's growth areas by delivering high-quality transport connections that provide access to employment, education, health and cultural opportunities, fostering social inclusion, liveability and development of a skilled and productive workforce to grow human capital.

43. The Project will deliver benefits that maintain and improve Melbourne's liveability. Social welfare benefits include:
   • improving personal wellbeing and societal welfare by improving access to goods and services, sport, cultural and recreational activities; and
   • improving social inclusion by increasing the availability and reach of the public transport network, thus minimising barriers to access for people to social and economic opportunities to support individual and community wellbeing.12

The Project must be delivered within the proposed timeframe

44. A question was raised by RMIT during its submission about the need for urgency in relation to the delivery of the Project. RMIT's point was that unlike other major projects such as the Desalination Plant, the Project is not being delivered to meet an externally defined deadline and that consequently there is no rush.

45. PTV does not accept the submission that there is no urgent need for the Project such that its delivery should be delayed. As was highlighted during PTV's opening statement, the public transport system has in recent years experienced strong demand growth which is projected to continue. As the diagram below illustrates by 2021 a number of train lines are at or nearing their capacity, meaning that without the Project the customer experience for users of these lines will continue to degrade. The Project will increase capacity on a number of lines across the network, distribute passengers across more stations which will address station congestion and separate lines into a "metro-style" network with improved service reliability.

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12 Business Case p 67
Given the demand forecasts, the benefit the Project will deliver is immediate and so it is just not correct to say there is no urgency for the Project to be delivered. Further, as the Project will generate a positive economic return for the State of Victoria, given its BCR of 1.1 - 1.5 taking into consideration of "conventional" transport benefits only and a BCR of 1.5 to 3.3 if wider economic benefits are included\(^\text{13}\), any delay in the delivery of the Project will delay the realization of these economic benefits for the Victorian community.

For these reasons the IAC should be satisfied that the proposed delivery timeframe for the Project is appropriate and that no basis exists for slowing this process down.

IMPACTS ON THE PUBLIC TRANSPORT NETWORK DURING CONSTRUCTION

PTV makes the following further submissions regarding the impacts of the Project on the public transport network during construction and the management of those impacts.

As the MMRA has noted through the course of this hearing, the construction of the Project will inevitably be the cause of some disruption to public transport and road

\(^{13}\) Business Case, p 4.
users, and to those that live or work along or near the Project alignment. Such disruptions are part of the delivery of major infrastructure projects in urban settings and a degree of forbearance and patience on the part of the people of Melbourne will be required as the price of this City re-shaping project.

**Diversion of passengers by rail from the south east during construction of the Project**

50. One of the groups of people that will be impacted during the construction are users of the Pakenham/Cranbourne Line who will experience service disruptions, including service outages, while works are performed within and immediately adjacent to the rail corridor. PTV, MMRA and Metro Trains Melbourne have already commenced planning for these disruptions.

51. Rail infrastructure requires ongoing maintenance and upgrade works to keep it in safe and effective operating condition. The Melbourne metropolitan rail network routinely experiences planned disruptions for routine maintenance activities. These planned disruptions are usually scheduled to occur on weekends and late at night. More significant works may result in a major planned disruption to services.

52. PTV and its rail franchisees have procedures and standards for managing these planned disruptions. For example PTV and Metro Trains Melbourne have a *Planned Disruption – Weekend and Late Night and Major Planned Disruption strategy* (*Planned Disruption Strategy*). This Planned Disruption Strategy includes Operations and Customer Impact standards which include requirements that:

- all customers are to be provided with at least one alternative transport option to satisfy their travel need (train replacement bus service is the minimum); and
- for major disruptions, adjacent running lines must be protected to ensure continuity of travel by way of shuttle service to other lines where practicable

53. The standard also includes customer information requirements such as:

- a communications plan must be developed for all major occupations;
- for major occupations, all stakeholders must have access to the disruption and communication plans at least four weeks prior to the disruption occurring;
- use of the internet and social media is essential to keep customers updated throughout a major disruption; and
• community advisory services for vulnerable groups (ie disability awareness and aged care groups and the like) must be engaged to assist with providing support/information on travel pattern changes.

54. In recent years a number of examples of major planned disruptions have occurred in order to facilitate the Level Crossing Removal Project. This project included a 37 day closure of the Frankston Line between Caulfield and Moorabbin from June to August in 2016, and involved the simultaneous removal of 3 level crossings.

55. PTV and MMRA will draw on the learnings from recent large scale closures arising from the Level Crossing Removal Project (including the Frankston line closure in 2016) to inform management of planned closures for the Project.

56. PTV has an Occupations Committee which will liaise with MMRA to assist MMRA and Metro Trains Melbourne to manage planned disruptions that occur as part of construction of the Project, in accordance with PTV's Planned Disruption strategy.

Public transport changes in the Domain Precinct during construction

57. Due to the construction of the Domain Station in the St Kilda Road reserve adjacent to Domain Road the No. 8 tram will be redirected along the continuation of Toorak Road West. New tram tracks will be laid along Toorak Road West between St Kilda Road and Park Street.

58. While this route change is an unavoidable consequence of the Project, PTV recognises that the diversion of the tram route away from the Park Street/Domain Road precinct will have an impact on the accessibility of the public transport network from this precinct. However, PTV submits that the impacts of this route change are acceptable in the circumstances.

59. The walking distance between Domain Road and Toorak Road is approximately 400m. This would take an average person walking at 4km/h 6 minutes to walk.

60. There is a high concentration of housing located in the area bounded by Toorak Road, Park Street, Domain Road and St Kilda Road. These people will remain within 400m of a tram service, and many of these people will be closer to tram services on Toorak Road.

61. PTV is also currently examining options to provide a bus service that will stop at or near to the intersection of Domain Road and Park Street. The precise route, schedule and frequency of this bus service is yet to be determined but PTV will have regard to the particular needs of travellers to and from this precinct, in making this decision. For instance, services will be timed to coincide with school start and finish.
times to ensure that students at Melbourne Girls Grammar School maintain a level of public transport accessibility. This bus will also provide an option for those passengers for whom it may be difficult to walk to Toorak Road.

62. The realignment of the No. 8 tram along Toorak Road West will also generate benefits for the users of this service. The new tram track will likely occupy a dedicated travel lane in the centre of Toorak Road West, between St Kilda Road and Park Street. New disability accessible stops will also be built along this section of road, which is relatively wide. These accessible stops will mean that boarding and alighting tram services will be easier and faster for everyone and the dedicated tram alignment in Toorak Road West will reduce the travel time for this service in comparison to the existing alignment which can be prone to delays arising from its interaction with vehicular traffic along Domain Road, particularly during peak travel times.

63. PTV is aware that the City of Stonnington has requested that the No 8 tram not be returned to its current alignment following the completion of the Project. This is because Stonnington regards the Toorak Road West alignment as providing better connectivity between the No 8 tram with the Domain Interchange, and South Yarra. PTV accepts that the connectivity of the No 8 tram and the Domain Interchange is enhanced by the Toorak Road West alignment, and the other benefits noted above, may provide support for retaining the Toorak Road West alignment. However, PTV is also aware that the adoption of the Toorak Road West alignment on a permanent basis will have permanent implications for the public transport connectivity of the Domain Road/Park Street precinct.

64. PTV acknowledges that both route options have their advantages and disadvantages but does not consider that this is a question that requires resolution in 2016. In the period following the Toorak Road West diversion, PTV will be in a position to gather data about tram network performance and customer experience concerning the diverted route. PTV will also be able to assess the impacts of the diversion on the Domain Road/Park Street precinct and to engage with the range of stakeholders, including the City of Stonnington, that have an interest in this decision. PTV will then be able to make an informed and considered judgment about which of the two routes delivers superior public transport outcomes. While no timing has been set for this decision, PTV would expect to have come to a final view well before the re-opening of Domain Road. PTV will communicate its decision with stakeholders in accordance with its usual practice for network changes of this type.
65. Tram services will continue to run along St Kilda Road throughout the construction period and PTV will work with MMRA to ensure that these services remain largely unaffected by the construction works. It is PTV’s expectation that the only service outages along the St Kilda Road tram route will be short (no more than a few days) and largely limited to weekends.

66. The patronage along both the St Kilda Road Tram routes and bus routes in the area will be monitored throughout the construction period to indicate where additional capacity may be needed to meet demand.

67. During the construction of the Domain Station traffic along St Kilda Road will be limited to a single lane in each direction. The Travel Demand Management Strategy being prepared by MMRA will aim to encourage those who use St Kilda Road to use different routes, transport modes or travel at different times. PTV recognises one of the strategies that will be implemented will be to encourage some travellers to switch onto trams. PTV is working with MMRA on this strategy as part of the TTWG.

68. A question arose during the evidence of Shaun Smedley on behalf of MMRA about the capacity of the St Kilda Road tram corridor to cater for the increase in tram patronage that may arise during the construction of the Project.

69. Whilst trams operating along St Kilda Road are currently at capacity or close to it during peak hour, trams are able to cater for additional trips before or after the peak hour. PTV will constantly monitor demand and capacity on this part of the network and has a number of means by which it can increase capacity along this route if required. Currently, 70 new high capacity E-Class trams are being delivered to the network which can carry 180 passengers each. As these come into service, B-Class articulated double carriage trams that can carry 120 passengers, are currently proposed to be transferred to the St Kilda Road corridor. They in turn, will replace older and smaller single carriage A-Class and Z-Class trams that carry 65 and 70 passengers, respectively. A number of St Kilda Road tram services currently utilise A-Class and Z-Class trams.

70. PTV monitors tram loadings and adjusts available capacity and frequency across the network to meet the passenger demand, and will continue to do this in consultation with the TTWG and with Yarra Trams throughout the construction period.
Domain precinct bus services during construction

71. During the construction of the Project the one-lane operation of St Kilda Road around the Domain precinct will impact on the movement of all road traffic along this route, including PTV’s bus services.

72. PTV will continue to operate at least one bus service along St Kilda Road to ensure the important connection along St Kilda Road to the CBD Southbank is retained. It is likely that due to the increased traffic along St Kilda Road that travel times will increase, and those travelling into the CBD may decide to transfer to tram services. Bus priority measures will be implemented where possible.

73. Due to the construction activity it will be necessary for PTV to relocate tram and bus stops within the construction zone to other locations north and south of their current location. These locations will be chosen to be as close as possible to their current location along St Kilda Road.

Tram services during construction of the Project

74. The adoption of cavern mining as the proposed construction methodology for the construction of the CBD South and CBD North station boxes will significantly reduce the extent of surface level disturbance within the CBD in comparison to those precincts where a cut and cover methodology is adopted. This has the effect of significantly reducing the impacts of the construction of the Project on the operation of the tram network where it intersects with the Project in the CBD. That is, trams will be able to operate essentially continuously along Swanston Street during the entire construction program as will the trams which run along Latrobe, Collins and Bourke Streets.

75. There will be occasions during the construction program when tram service interruptions will be necessary but they are likely to be limited in duration (hours or a few days at the most), will where possible be timed to minimize disruption to tram system users (weekends and other relatively low demand periods) and will be limited in geographical impact (impacting only a discrete part of the CBD tram network at any one time).

76. PTV expects that the interruptions to the CBD tram network will be similar in impact to the types of interruptions that occur from time to time when PTV undertakes routine tram network infrastructure maintenance and upgrade works to keep it in safe and effective operating condition.
PTV and its current tram franchisee Yarra Trams have a planned disruption standard that works in a similar manner to the corresponding train network Planned Disruption Strategy noted in paragraph 52.

One example of a recent planned disruption is the track renewal works on and around Flemington Road and the intersection of Abbotsford Street which were carried out between 2 July to 11 July 2016. Management of this disruption included extensive consultation with a range of Government and institutional stakeholders. Three tram routes were disrupted during the 9 day works program and impacts on tram passengers were managed using a bus replacement strategy to ensure passengers could still access key facilities and institutions in the precinct (such as hospital, University of Melbourne, Melbourne Zoo and sporting facilities).

The impacts of the construction of the Project on CBD tram routes will generally reflect the type of interruptions that tram network users already experience from time to time. However there will be impacts on the operation of the trams that run along Flinders Street between Swanston and Elizabeth Streets, which are likely to extend for a period of several weeks. This interruption will arise during the construction, using a cut and cover construction methodology, of the underpass that will connect the CBD South Station with Flinders Street Station. PTV will work through the options for management of this issue with MMRA and the TTWG before the ultimate management strategy is determined.

**Diversion of bus services in the Parkville Precinct during construction of the Project**

The closure of Grattan Street to traffic between Royal Parade and Leicester Street and the one-way operation of Grattan Street between Flemington Road and Royal Parade during the construction of the Parkville Station will impact on the bus routes that currently use Grattan Street. Bus routes 401, 402, 403, 505 and 546 will be affected. These bus routes will need to be re-routed as a consequence. PTV will work through the options for management of this issue with MMRA and the TTWG before the temporary routes are finally determined.

The 401 bus is Melbourne’s busiest bus route, with buses every three minutes during peak times. Over 6,000 people a day use this route, with around 4,000 people a day using the 402 bus. Around 1,000 people a day use the 505 and 546 routes. The 403 is an off-peak service with approximately 80 people a day.

A number of bus rerouting options are being considered for rerouting the 401 and 403 services. These include (but are not limited to):
• Travelling eastbound via Arden St, Wreckyn St, Grattan Street West, left at Royal Parade and then an anti-clockwise loop back to rejoin the original route through North Melbourne to Arden Street; or

• Travelling eastbound via Arden St, Wreckyn St, Grattan Street West, right at Royal Parade, and then clockwise returning along Wreckyn Street, which could include passing through Haymarket roundabout.

83. The location of the bus stop for the rerouted 401 and 403 is still being considered, but will be located as close as possible to the corner of Grattan Street and Royal Parade to allow access to the University of Melbourne and the Hospitals.

84. Likewise, multiple options for the rerouting of the 402, 505 and 546 buses are being considered.

85. Traffic conditions in the whole of the Parkville Precinct will be changed during construction of the Project. These altered conditions are very likely to cause some increases in travel time on bus services. Public transport will be given priority in MMRA’s Travel Demand Management Strategy. The travel time increases on buses are estimated in the Transport Impact Assessment in the EES to be in the range of a few minutes, depending on the location and bus routes involved. In most cases this additional time will only be a very small proportion of a public transport user’s entire journey from the point of origin. For example, a 401 bus passenger whose entire journey extends from St Albans to Melbourne University would currently take 48 minutes to complete the trip.

86. The decision on which new routes the buses will take has not yet been finalised due to the ongoing and developing work being undertaken on:

• Understanding traffic impacts arising from the construction of the Project;
• Finalising construction road closures;
• Investigations into maximising the capability of the Haymarket Roundabout;
• Feasibility of bus priority measures along the routes under consideration; and
• Community engagement.

87. The options for rerouting the buses will be further considered following completion of this work through the TTWG. In the letter attached to Technical Note 20 from Huw Millichip of PTV to Alister Campbell of MMRA dated 9 August 2016, PTV identified two general options for potentially rerouting the buses. Under cross-examination by Mr Lynn, Mr Poulson agreed that neither of these options should be ruled out
although he would "look at the westbound option first" (ie passing through the Haymarket roundabout). Under cross-examination by Ms Osborn, Mr Sellars agreed that it was too early to rule out either of these options and that the work would need to be done on the matters set out in the letter (and repeated in the above paragraph) before deciding on the ultimate option.

88. In determining the most appropriate route diversions for these buses, PTV will have regard to the following general principles and factors:

- The construction plans to be developed by the successful station construction proponent;
- Minimise additional travel time for bus users compared to the regular timetable where possible;
- Minimise disruption to the normal running of services;
- Allow route flexibility as construction assumptions and traffic conditions may change;
- Avoid areas of high congestion or unpredictable travel times where possible;
- Avoid areas of main construction activity;
- Consideration of local impacts;
- Ability to relocate bus stops near places of interest/existing stops;
- Maximise efficiency of diverted routes by not extending route length or travel time unnecessarily;
- Bus trafficability along the route and ride quality for public transport users;
- Need for temporary infrastructure works for the diverted route- consider impact on roads, kerbs and trees;
- Impacts on parking;
- Safety of pedestrians and other road users;
- Preference to run buses on main roads rather than local roads where possible;
- Ability to put bus priority on a route;
- Legibility of routes for public transport users; and
• Complementarity with other public transport services (tram, train, unaffected bus services).

89. The final routes for buses during construction of the Project will be chosen by PTV in consultation with MMRA based on a consideration of these principles and factors. Under cross-examination, both Mr Poulson and Mr Sellars agreed that these were considerations or useful general principles that should be considered in deciding on the re-routing of buses and that the TTWG would be an appropriate mechanism for discussing these various factors.

OTHER CHANGES TO THE LEGACY NETWORK AFTER CONSTRUCTION OF THE PROJECT

90. PTV makes the following further submissions regarding planned changes to the public transport network which will be made as part of the Melbourne Metro.

91. The changes to the legacy network described in this section are fully funded and will be delivered by MMRA. Apart from the new transport interchange at Domain, these changes are not part of the Project and have not been part of the exhibited EES process that the IAC is currently considering. PTV sets these changes out for the IAC’s information, and to assist the IAC in viewing the Project within the context of a broader program of works that will build on and work with the Project to deliver significant network benefits.

New train/tram interchange at Domain

92. Passengers accessing Domain station will be able to conveniently interchange with a relocated Domain Tram Interchange, which will sit directly on top of the station on St Kilda Rd, between Domain Road and Bowen Crescent.

93. The relocated Domain interchange will include a direct entry from the tram platform into the Domain station concourse. Tram passengers will also be able to take advantage of Domain station’s pedestrian underpass under St Kilda Rd, making this busy area safer for pedestrians. There will also be pedestrian crossings at street level.

94. The Domain interchange is integral to the planned running of increased services to the western CBD, and to provide a connective hub that allows access to tram services to South Melbourne, Southbank, Docklands and the western CBD.
Wider Network Enhancements

95. The Melbourne Metro Program includes a series of wider network enhancements including track, signaling and other small to medium scale works across the train network to support the initial service plan. 14

Melbourne Metro Enabled Tram Network Enhancements

96. The Project provides the opportunity to reconfigure the Melbourne Tram Network to better service Melbourne, in particular the west end of the CBD, Southbank and South Melbourne. The Project provides extra public transport capacity and choice along Swanston St/St Kilda Rd, reducing the need for as many trams to service the same corridor than would otherwise be needed if the Project did not proceed. This contributes to a complementary, connected transport network for Melbourne.

97. The Melbourne Metro is funding some complementary enhancements to the network, such as a new Park Street Link between Kings Way and Moray Street.

98. Once complete Melbourne Metro will provide travellers with a choice of faster, higher-capacity rail option as well as tram services that continue to operate along the St Kilda Rd corridor. With some travellers expected to use trains on this corridor and the new Domain Station providing a new interchange point, a new service plan for tram services to complement Melbourne Metro will be developed. PTV will be able to improve services where there is increasing growth and demand for trams particularly in Melbourne CBD's west and north-west, Southbank and South Melbourne.

Park Street Link

99. As part of the Melbourne Metro, new tram track will be installed along Park Street, between Kingsway and Moray Street in South Melbourne. This link of approximately 250 metres will connect existing tracks and allow some tram services to be diverted from the St Kilda Road corridor onto the Clarendon Street corridor through South Melbourne.

100. The Park Street link will provide important strategic benefits to the Melbourne CBD because it will improve:

services to meet demand in the Western end of the CBD, South Melbourne and Southbank; and

14 Business Case, for example p 1 and p 131..
• provide additional capacity to the Clarendon Street tram corridor to meet growing demand.

101. These works will be undertaken to coincide with the commencement of services through the Project. The City of Port Phillip has submitted that the Park Street Link should be delivered as soon as possible. PTV has considered whether these works could be delivered ahead of the Project's completion of construction but has concluded they cannot be brought forward as they are directly enabled by the Project. The precondition of diverting some tram services to the Park Street Link is a mode shift of passengers from the St Kilda Road tram network to the rail network which will generate tram network capacity which can then be redeployed through South Melbourne. At present, the demand on the St Kilda Road tram route, particularly during the morning peak hour outbound (passengers travelling from the CBD towards Domain), is such that no spare capacity exists to increase services through South Melbourne.

Elizabeth St improvements

102. As part of the Melbourne Metro, the Elizabeth St tram terminus will be replaced by a new tram terminus, currently anticipated to be at Jolimont. The current Elizabeth St terminus is inadequate to facilitate 3 high frequency tram routes. The new terminus facility will enable the turn-back of Elizabeth St services at this new terminus. This connection is needed to maintain the operability of Flinders and Elizabeth services.

103. New turning track connecting Elizabeth St and Flinders St will allow trams heading westbound on Flinders St to go right onto Elizabeth St and trams heading south down Elizabeth St to turn east onto Flinders St. This will aid in delivering more tram services east and north-west of the city and to the sports and entertainment precinct and Jolimont Station.

104. The Elizabeth St tram extension will:

• connect the Inner North West tram routes to Melbourne Metro and the Sports and Entertainment Precinct;
• enhance tram capacity on Wellington Parade (Jolimont);
• remove an operational performance bottle-neck (Elizabeth St terminus); and
• provide another connection between the Clifton Hill Rail Group at Jolimont Station, the CBD and Parkville.
OTHER PUBLIC TRANSPORT NETWORK ENHANCEMENTS

105. PTV submits that it is also important to understand that the Project will enable a series of other public transport network enhancements.

106. The Extended Program comprises subsequent investments (presented in the Business Case but not yet committed investments) on the Sunshine-Dandenong corridor that are enabled by the Project, and that are anticipated to be required soon after the Project is delivered, including:

- extended High Capacity Metro Trains to use the full length of the new stations;
- introduce metropolitan train services to Melton; and
- additional tracks between Sunshine and Deer Park to improve service quality for commuters on the Geelong, Ballarat, Wyndham Vale and Melton lines.\(^{15}\)

107. The additional capacity delivered by the Melbourne Metro Program will be sufficient to meet the forecast demand on the Werribee and Craigieburn lines until the mid-2030s and on the Frankston line beyond the mid-2040s. The Extended Program, which includes extended HCMT trains is expected to provide capacity to meet forecast demand on the Sunbury and Cranbourne/Pakenham lines until the 2040s.\(^{16}\)

108. The Project will provide capacity for an additional 39,000 passengers in the morning peak, of which it is forecast that an additional 16,000 passengers will use the metropolitan train network in the morning peak as a result of the Melbourne Metro Program compared to the modelling case without it (with a further 21,000 using it in the Extended Program) in 2031. Once the Extended Program has been completed, an additional service capacity of around 80,000 passengers in the morning peak will have been delivered since the opening of the Melbourne Metro.

109. The Project is also an essential foundational step in the network towards enabling further projects such as potential service improvements to Wallan and extensions potentially to Melbourne Airport.\(^{17}\)

\(^{15}\) App 5, p5
\(^{16}\) App 5, p8
\(^{17}\) App 5, p12.
The Project and the Level Crossing Removal Project

110. PTV submits that the Project and the Level Crossing Removal Project in combination will deliver significant benefits on the Sunbury to Cranbourne/Pakenham line, and on a network wide basis.

111. Over the next eight years the Level Crossing Removal Authority will oversee the removal of 50 level crossings across Melbourne.

112. The Victorian Government allocated 2.4 billion dollars in its 2015-2016 budget to remove at least 20 level crossings by 2018.

113. Construction is underway at several sites, while planning and early consultation has started across Melbourne on the delivery of the full program of 50 level crossing removals.

114. PTV submits that the Level Crossing Removal Project has and will serve as a source of learnings for both PTV and MMRA in regard to this Project.

The Project and the Cranbourne/Pakenham Line Upgrade

115. The Cranbourne/Pakenham line upgrade is a current project that is in its delivery phase. It delivers a separate and significant capacity uplift to the Cranbourne/Pakenham line and includes 9 of the 50 level crossing removals.

116. PTV submits that the Project will work with the Cranbourne/Pakenham line upgrade to deliver a combined significant improvement.

117. The package of works to transform the Cranbourne Pakenham corridor will upgrade Melbourne’s busiest train line. This project has been factored into the base case for the demand forecasting for the Melbourne Metro Project. The Cranbourne/Pakenham Upgrade will work with the Melbourne Metro Program and Extended Program to deliver increased capacity on the Cranbourne/Pakenham line and benefits to the broader network.

118. The upgrade will boost capacity by up to 42 per cent on the Cranbourne-Pakenham line every day, accommodate an extra 11,000 passengers in the morning peak and boost capacity across the network by freeing up existing trains to be redeployed to other lines.

119. The upgrade includes:

- the purchase of High Capacity Metro Trains 37 of which are required to run the Cranbourne-Pakenham line services;
- the removal of all nine level crossings between Dandenong and Caulfield;
- four rebuilt stations at Clayton, Carnegie, Murrumbeena and Hughesdale;
- extending platforms to support the new High Capacity Metro Trains;
- new and upgraded rail infrastructure in the corridor including power and signaling upgrades; and
- a new train depot and maintenance facility in Pakenham East.

120. Major works to remove level crossings on the Cranbourne-Pakenham Line commenced in July 2016; and are expected to be complete by 2018.

**ROLLING STOCK**

121. In order to deliver significant public transport network improvements and capacity uplift, and to maximize the benefit of the Project and other associated works there is also a need for new and improved rolling stock to run on the network.

122. The Victorian Government ten-year Rolling Stock Strategy outlines a plan for 100 new next-generation metropolitan trains, 100 new trams, and a massive expansion of our regional rail fleet. The strategy includes

- 65 High Capacity Metro Trains (and supporting infrastructure):
- Comeng Life Extension $75m;
- 5 New X'Trapolis Trains $90m;
- 21 VLocity Carriages (and supporting infrastructure) $257m;
- B-Class Tram Life Extension $21m; and
- 20 E-Class Trams (and supporting infrastructure) $274m.

**High Capacity Metro Trains**

123. Funding for 65 High Capacity Metro Trains was provided for in the 2015-16 and 2016-17 State Budgets. This investment is estimated at around $2.2 billion.

124. High Capacity Metro Trains will be longer than existing trains with 20 per cent more space to carry passengers than existing models of trains operating on the network. They will also be internally configured to create less congestion around doorways.

125. High Capacity Metro Trains accommodate average loads of 1,100 passengers.\(^\text{16}\)

\(^{16}\) Planning load, which is based on a rolling average of 1,100 passengers. See *Trains Trams Jobs 2015-2025: Victorian Rolling Stock Strategy*, p 20.
126. As demand grows, potential expansion of these trains to 230 metre High Capacity Metro Trains would allow average loads of up to 1,570 passengers to be carried.\(^3\) The first High Capacity Metro Train is due to be delivered and in testing by November 2018. All of the 65 High Capacity Metro Trains are due to be delivered by 2026.

127. The new rolling stock will more generally provide improved passenger amenity (e.g. information systems, improved lighting, CCTV, smoother ride) and access for people with restricted mobility.

E-Class trams

128. PTV proposes introducing 150 new E-class trams over the next decade to allow for the retirement of Z- and A-class trams. These will be introduced primarily on the routes with the highest passenger demand.

129. The E-class trams will form the base of the new tram fleet of 240 trams which will be needed over the next decade.

130. E-class trams provide additional capacity and better reliability than all previous tram types.

131. Older trams generally have a high floor (and are difficult to access by people in wheelchairs, with restricted mobility, when using strollers or carrying luggage) and are also not air-conditioned. The Strategy states that new and upgraded rolling stock is required to meet the minimum standards for access outlined by the Commonwealth Government in the *Disability Standards for Accessible Public Transport* (2002)\(^6\).

132. 20 E-class trams are included in the 2015-2016 State budget (at a cost of $274m).

SUBMISSIONS REGARDING STRATEGIC JUSTIFICATION FOR DOMAIN STATION

133. Some submitters have questioned the strategic justification for the inclusion of Domain Station in the concept design. The position of these submitters seems to be that the asserted benefits of the Domain Station are unsupported and that the rail capacity between Domain and the CBD is unnecessary as the passenger demand could be met by increased tram services.

134. Significant office development in St Kilda Road and Domain commenced in the 1960s and 1970s, and was spurred on by the need for more office space to supplement the CBD. By the 1970s many of the residential mansions that previously

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\(^6\) p15.
lined St Kilda Road had been demolished and office buildings erected. Proximity to the Hoddle Grid and good access by car underpinned this office development. Heritage controls were introduced in the 1980s to protect surviving mansions and preserve the 'boulevard' nature of the area. A combination of heritage controls, the redevelopment of Southbank and increasing traffic congestion slowed the office growth in this area of during the 1980s and 1990s.

135. The area's proximity to the CBD and significant growth in the demand for apartment living in recent years has resulted in increased residential development at the expense of the office market. This has included a number of conversions of office buildings to residential use.

136. With the introduction of the Melbourne Metro and realigned tram network the Domain Station precinct and surrounding area is expected to undergo a further re-balancing of its land use mix. While the built form of new development is expected to remain broadly unchanged with and without the Project, the Project is likely to result in a higher proportion of commercial offices locating close to the station. This will be driven by improved access to labour, and business to business interactions provided by the Melbourne Metro and realigned tram network. By 2031, once the Project is delivered, forecasts indicate that there will be 33,000 jobs and 17,000 residents within 800 metres of Domain station. For these reasons PTV does not agree with those submitters that argue the long term trend for the Domain precinct is toward residential over commercial development.

137. Domain station will be an important place to change to the tram network to access nearby precincts, and 110,000 jobs will be within a short tram ride from the station. A number of tram routes in the south east converge at Domain. There are a diverse range of businesses along St Kilda Road (Professional services), in South Melbourne (Creative industries), Southbank (Financial services) and the medical hub around The Alfred Hospital.

138. According to the forecast station use, Domain Station will see approximately 40,000 entries and exits each day in 2031, making it about as busy as Flagstaff Station is today. The combined use of Domain and South Yarra stations with Melbourne Metro will be around 70,000 entries and exits each day in 2031, compared to 39,000 at South Yarra without Melbourne Metro, showing the overall increase in connectivity to the area due to the project.

139. The Domain Station will be a destination in its own right providing access to a range of employment and health, secondary education and recreation opportunities by tram
or on foot. The improved connectivity resulting from the Domain Station and the improved tram capacity along St Kilda Road will help to expand future CBD development along St Kilda Road, around the Domain and towards The Alfred Hospital and into South Melbourne. This is in line with the aspirations described in Plan Melbourne, the St Kilda Road North Precinct Plan and the South Melbourne Structure Plan. All of which plan for increased development with a mix of jobs and residential land uses in the area served by the Domain Station and tram networks. The desirability of Domain as a destination, and its connectivity to a range of other nearby precincts, would not be achieved in the absence of a Melbourne Metro station at Domain.

SUBMISSIONS IN RESPONSE TO PROPOSED INCLUSION OF A SOUTH YARRA INTERCHANGE STATION

140. PTV provides the following submissions in response to City of Stonnington's submission regarding the inclusion of a new South Yarra station.

Public transport investment must deliver significant benefits and value for money

141. PTV submits that any public transport investment of $700 million to $970 million, must have a large benefits driver such as capacity relief or a significant improvement in travel times and accessibility for a large number of people. PTV submits that adding a South Yarra interchange station to the Project would not achieve this kind of benefit, and that the City of Stonnington's submission does not make this case.

142. The headline conclusions of the assessment of a new South Yarra station, as summarised in the Ministerial briefing note dated 30 June 2015 (Document 104) were that:

*The updated assessment of including a new interchange station at South Yarra as part of the MMRP has confirmed that the station:

(c) would add in the order of $700-$970 million to MMRP cost;

(d) would significantly increase land acquisition in the South Yarra area;

(e) would result in a net increase in public transport use across the metropolitan network of only 1000 customers per day (by comparison, Southland Station is a much smaller investment but would result in a net increase in public transport use across the network of 4000 customers per day);*
would leave over 100,000 customers per day 1 minute worse off, compared to less than 14,000 customers who would be between 1 and 10 minutes better off. The net effect of this is an overall increase in travel time for public transport customers;

has a Benefit Cost Ratio (BCR) of 0.2. When the negative impact of the 100,000 customers per day who are 1 minute worse off is removed from the economic analysis, the BCR only rises to 0.3, reflecting the low level of benefits compared to the costs; and

adding the station has an economic impact of -$535 million (net present value), and its addition would reduce the overall economic case for the MMRP.

A key reason for low benefits is that public transport passengers have a number of alternative public transport services to get to and from South Yarra or are able to interchange elsewhere.

While the Transport Integration Act 2010 (Vic) requires consideration of connectivity benefits, it also requires consideration be given to value for money. Section 16 provides that

The principle of triple bottom line assessment means an assessment of all the economic, social and environmental costs and benefits taking into account externalities and value for money.

PTV notes that the Mernda Rail Extension, which will deliver economic and social benefits by introducing and extending new heavy rail services in a growth area and provide significantly improved access and travel time savings to an area that was not previously served by rail, was funded for $587.7 million in the 2016 State Budget.

PTV submits that the City of Stonnington's submissions which support the inclusion of a new South Yarra interchange station in the Project are narrowly focussed on the South Yarra station and its immediate surrounding area, but do not consider the broader metropolitan transport network and the associated opportunities, constraints and priorities for services and infrastructure across Melbourne and Victoria.

Similarly, PTV submits that Mr McDougall's evidence focussed on South Yarra and did not assess the broader adverse and beneficial effects of the Project on current and future transport services, broader and network connectivity and patronage for the wider metropolitan area with a particular focus on the south eastern region. Under cross-examination by Mr Tweedie, Mr McDougall admitted that his evidence did not
address the questions regarding the wider metropolitan area despite it being in his instructions from Harwood Andrews Lawyers.

**Network opportunity and connectivity at South Yarra**

148. Whilst Dandenong line trains will no longer stop at South Yarra Station once Melbourne Metro is operational, PTV submits that the metropolitan public transport network, in terms of network opportunity and connectivity at South Yarra will not be adversely impacted by the Project in a significant way, and that the ability to make multi-modal connections will not be detrimentally impacted by the Project. This is due to South Yarra being well served by a range of public transport services and there being a range of other nearby multi-modal interchange options. Rather, PTV submits that network connectivity in and around South Yarra Station has been and augmented by the Project.

149. As well as South Yarra Station continuing to be an important interchange location once Melbourne Metro is in place, there is a "ring" of public transport interchange points around South Yarra that have very frequent public transport services enabling public transport passengers to get to and from South Yarra. The map below shows the origin of people accessing South Yarra station by tram and was created using 2012 Train Origin Destination Survey data.
Apart from the current rail system, public transport users already have several alternative options for public transport from South Yarra Station to the CBD and other destinations. A number of tram and bus choices are available, and these include the tram lines along Toorak Road and Chapel Street. Most of the multi-modal options for public transport that are currently available at South Yarra will continue to be available after Project is delivered, but will be augmented by:

(a) access to the Domain Station by walking/cycling/travel on the No 8 tram, and to travel on the Sunshine – Dandenong line to and from the new Domain Station;

(b) the other network enhancements enabled by the Project such as changes at Domain interchange, the Park St Link and the ability to increase tram services to the west of the City; and
relative to today, better connection to Parkville and the western suburbs as they will be accessible by rail with one interchange onto the Melbourne Metro corridor at CBD South/Flinders Street and CBD North/Melbourne Central, or by tram to Domain Station.

151. After the construction of the Project:

(a) there will be opportunities to get to South Yarra station from the Melbourne Metro stations and rail service by interchanging at Caulfield, CBD South/Flinders St and CBD North/Melbourne Central; and

(b) passengers at South Yarra will still have a choice of either going to the City Loop stations or direct to Flinders Street and Southern Cross without changing trains. This is more choice than the vast majority of rail passengers travelling from other stations in the rail network.

152. Many cities have rail systems that involve passengers interchanging to get to different stations.

153. In Melbourne, not all metropolitan services stop at Southern Cross, Melbourne Central, Flagstaff and Parliament Stations, and passengers are accustomed to interchanging at stations such as Richmond, Footscray, North Melbourne, Caulfield and South Yarra. As the frequency of train services improves as a result of the Project, interchanging becomes easier due to reduced wait times.

Changes in travel patterns after the delivery of the Project

154. Mr McDougall's evidence contends that there will be a loss of 6000 train patrons from the South Yarra station as a result of the reduced network connectivity at the station due to the removal of the Cranbourne/Pakenham train services, and that this will result in impacts on local transport networks²⁹.

155. PTV submits that this conclusion is overly simplistic, and that the net change of 6000 patrons in the forecasting must be viewed in a broader context of a range of changed travel behavior around the transport network due to the different travel options available after the Project is delivered.

156. PTV submits that many of the patrons in the net change figure of 6000 at South Yarra Station will benefit from the use of the new travel options available as part of the delivery of the Project, and that any residual impacts on local transport networks will be accommodated by the network. PTV also submits that the Project will lead to

²⁹ For example, McDougall Expert Report, p 17.
a rebalancing of passenger interchanges between trains across major stations for many different journeys due to the new network configuration, as shown in Figures 28 and 29 in Appendix 5 to the Business Case.

157. Forecasts predict that after the Project is delivered there will be 6,000 less entries/exits and 4,000 less transfers each day compared to the no-project case (2,000 less entries/exits and 500 less transfers in the AM peak). These figures represent a "net" change, in that the total number of people making different choices in their travel patterns following delivery of the Project will be greater than this number.

158. PTV submits that when a forecast shows a reduction in people using a service or station it may signal that:

- people have made use of a new, preferable travel option (faster, less interchanges, closer to destination); and/ or

- some people may be deterred because the travel option they used may take longer.

159. PTV submits that it is incorrect to assume (as the City of Stonnington has done) that people who change travel behaviour are experiencing a disbenefit due to the Project. Many of them will have changed due to more direct or convenient travel options (e.g. being able to travel directly to Domain from the Cranbourne/Pakenham line and via interchange at Caulfield on the Frankston line, or being able to walk or tram to Domain station rather than South Yarra station).

160. PTV also submits that much of the travel said to be displaced will in fact be passengers finding better and more convenient travel options. PTV submits that the following are examples of displaced travel being absorbed by the broader transport network:

- people living on the Dandenong line may choose to take the train and change at Caulfield to complete their journey to South Yarra, or a small number may opt to drive to the area (VITM forecasts show an increase of less than 200 trips to the South Yarra area on a typical weekday in 2031 compared to the no project scenario);

- people may opt to get to Domain Station by train and then catch the Route 8 tram from Domain Station to South Yarra in the AM peak. These passengers will be travelling on the tram in the counter-peak direction (away from the city
to South Yarra), and therefore not on the busiest section of the tram route towards the city; and

- the busiest section of tram travel on city bound trams from South Yarra is currently, and is forecast to be, in the vicinity of the Yarra River as it approaches the Central Business District, meaning that any local changes in and around South Yarra will be able to be accommodated on city bound tram services travelling in the peak direction.

161. Furthermore, in addition to changes due to the Project, PTV monitors and responds to changing travel and demand patterns in the planning of future network upgrades and there will be scope to deploy higher capacity trams or increase services to respond to growth in tram routes if needed.

**South Yarra will continue to be served by high frequency services**

162. After construction of the Project, South Yarra station will continue to be served by the Frankston and Sandringham lines. This will mean that the frequency of services at South Yarra Station will remain very high compared to other non-city stations.

163. The decrease in the number of trains before and after the Project will have a modest effect on crowding and passenger wait times. As indicated in the Ministerial briefing note (Document 104), the projected average interval between trains is estimated to increase by 25 seconds - a change from one train every 95 seconds before the Project to an average of 120 seconds. Under cross-examination by Mr Morris QC, Mr McDougall agreed that this difference of 25 seconds is basically insignificant.

164. By contrast, peak hour services on some lines currently run at 10 to 20 minute intervals.

165. Under cross-examination by Mr Morris QC, Mr McDougall agreed that train services at South Yarra are frequent and that "if one wished to travel by train from South Yarra to say Flinders Street you wouldn't really need to look at a timetable". Mr McDougall also agreed that a good rule of thumb as to how frequent the services need to be so that you wouldn't have to look at the timetable would be between five and ten minutes in the Melbourne context. PTV notes that the frequency change to approximately 2 minutes from every minute and a half would be well within the definition of a "turn up and go" service.

166. By comparison there are a number of significant stations in the metropolitan rail network which have far less frequent services than the post Project frequency of services at South Yarra. For example, Sunshine is a designated National Economic
and Innovation Cluster in Plan Melbourne, from which metropolitan trains currently depart at around 6-7 minute intervals during most of the AM peak. Mr McDougall agreed that South Yarra had "a lot more public transport services and more frequent services than at Sunshine".

**An updated South Yarra station will meet future demand**

167. PTV recognizes that in recent years South Yarra station has experienced significant increases in patronage. In general, this increase has been caused by strong growth in the high density development in the surrounding area. However, this recent growth is expected to taper off in the 2020s as the Forest Hill precinct approaches full build out. Even with this growth, the existing South Yarra station with updates (in combination with other public transport services in the area) is forecast to meet demand for public transport in the long term (ie beyond 2046).

168. PTV has established a separate and dedicated project team to plan for growth at the existing South Yarra Station, independent of the Project. This dedicated project team’s initial investigations (site inspections and ClicSim modelling) indicate that crowding on the station concourse is a key issue that needs consideration in the short term, and options to address it are being developed. PTV is also undertaking some initial planning work to consider what may be needed for the existing station in the longer term to meet future demand, before and after the Project.

169. The station capacity modelling undertaken as part of these initial investigations to understand the impacts of future demand at the station indicates that there are a number of options for works at the existing station which can alleviate current and emerging pressure points and meet long term future growth in station.

170. PTV will work with the local community, public transport users and key stakeholders as part of considering opportunities to update the existing South Yarra station.

171. PTV notes that during cross-examination by Mr Morris QC, Mr McDougall agreed that an upgrade of the existing station was needed, and that this could occur independently of whether or not the Project proceeds.

**A future interchange at South Yarra station is unlikely**

172. The potential future addition of South Yarra station on the Melbourne Metro tunnel is unlikely to be accommodated by the current design, and any such investment decision would be a matter for the Government of the day. PTV also submits that it is unlikely that the case for an interchange station will improve in future years, given the low BCR for the interchange station and the limited potential for further significant
redevelopment and intensification in this locality due to constraints imposed by land use and zoning.

Future demand will be met by services at South Yarra station

173. The City of Stonnington has also made submissions relying on Mr McDougall's evidence that the Project will mean that projected demand is not met at South Yarra station;

The Project will result in reduced network connectivity, train service levels and effective capacities at South Yarra station. A consequence of this is that the projected demand will not be met,...

174. PTV submits that Mr McDougall's 2031 forecast for use of South Yarra station is broadly consistent with PTV's forecasts (August 2016). Under cross-examination by Mr Morris QC, Mr McDougall agreed that the difference between his estimate of demand in 2031 and PTV's estimate was not material and that given that these projections were 15 years out that "they were fairly close".

175. PTV submits that Mr McDougall's analysis of recent "station patronage growth" is not an accurate or useful comparison, given that it seeks to directly compare data from two different sources. Mr McDougall agreed under cross-examination by Mr Morris that the columns up to and including 2013/2014 data are based upon PTV information (estimated ticketing information from myki data) and that the data for 2015 and 2016 was sourced from pedestrian counts undertaken by Austraffic. Mr McDougall also agreed that both these sources of data can only be regarded as a rough guide rather than precise information, and that these data sources "all have inherent biases of their own". Mr McDougall maintained that both sets of data provide "a good indication of the general growth in activity". PTV submits that Mr McDougall's argument that recent patronage growth is continuing to grow strongly relies on a direct comparison of two different data sets that cannot properly be combined and cannot produce a reliable growth trajectory. Notwithstanding this, PTV notes that Stonnington and its forecasts in 2031 are broadly similar.

176. PTV submits that Mr McDougall's evidence regarding a significant loss of train service levels and capacity of trains passing through South Yarra is inaccurate.

22 City of Stonnington Submission, [75].
24 William McDougall Expert Report, Figure 2-3, p 8
177. Even though Dandenong trains will no longer serve South Yarra station after the Project has been delivered, the Frankston and Sandringham lines will each get a capacity uplift (15% and 48% respectively) which will be sufficient to accommodate passengers travelling from and to South Yarra station. Uplift on the Sandringham line is due to the connection of the Werribee line to the Sandringham line as a through line. This connection is likely to drive future increased services on the Sandringham line, given that in order to meet demand from high growth areas along the Werribee line, additional services will also run onto the Sandringham line.

178. Currently South Yarra is served by 63 trains in the morning peak. The Proposed Service plan in the Business Case (and referred to in the Mr McDougall's Expert Report in Table 2-5) will be 59 trains after the Project is delivered. PTV also submits that Mr McDougall’s evidence regarding the arriving and departing passenger loads on city bound trains compared with service capacities for the AM peak hour is inaccurate and overstated.

179. PTV submits that Mr McDougall has applied a factor for the busiest peak hour which is not supported by PTV. PTV's examination of the data over a number of years, has derived a 61% peak hour factor as the correct factor. When a correct interpretation of the peak hour factor is applied, (61% vs 66%) no services breach load standard. Under cross-examination by Mr Morris, Mr McDougall did not identify a precise basis for his rule of thumb of 66%, but stated that "Well it's something which has been around for a while". Mr McDougall also accepted that "when we apply this sort of factoring fraction or percentage, that it gives an order of things but that's about all". PTV notes that train loading maps from the VITM modelling in the Business Case show services running below load standard.25

180. PTV submits that should future patronage growth differ from the forecast, there is scope to update timetables, deploy higher-capacity rolling stock, or consider other line upgrades (such as signalling) to further increase capacity as part of separate projects on lines serving South Yarra Station. These initiatives are identified in PTV’s Network Development Plan.

A thorough assessment process occurred regarding whether to include South Yarra station in the Project

181. The Project has had a long history which reaches back to 2008. It was first proposed in the 2008 East West Link Needs Assessment Report by Sir Rod Eddington

25 Business Case, Appendix 5, p 47.
The Eddington Study recommended a staged construction of a new 17 kilometre rail tunnel to link Melbourne’s western and south eastern suburbs. In 2008 the Victorian Transport Plan proposed that the project be delivered in stages. In 2009 Infrastructure Australia released its first assessment of Melbourne Metro Stage One, classifying it as ‘ready to proceed’. Between 2010 and 2013 project development and work on the business case for Melbourne Metro was undertaken. In 2012 the Network Development Plan was released, and it included Melbourne Metro as a key element in the future development of the rail network. The various versions of Plan Melbourne have also recognized the need for a major rail project of this kind as a key city-shaping project in supporting the transition to a metro style rail network and a more productive central city. Successive Victorian Governments have examined and worked on iterations of a project of this kind for many years.

182. The City of Stonnington has contended that:
   • the current assessment and investigation of the Project under the EES is deficient in relation to the absence of integration at South Yarra; and
   • the current assessment and investigation of the Project is deficient in relation to relevant policy, guidelines and legislation.

183. PTV submits that the assessment and investigation of the Project has included a thorough assessment and investigation of the potential integration of a South Yarra station. This assessment and investigation has drawn on a body of work that led to the development of a Project scope that did not include a South Yarra station. PTV submits that this assessment meets the requirements of the relevant policy, guidelines and legislation.

184. PTV was involved in the development of the Project requirements to which the Project concept design responds. Its work in this regard included demand forecasts documented in the Melbourne Metro Rail Project – South Yarra Metro Station Customer Outcomes and Economic Assessment Report (PTV, June 2015) (Customer Outcomes and Economic Assessment Report). That report outlined the customer outcomes and economics assessment of the option to include an additional stop on the Melbourne Metro alignment at South Yarra. At around the same time MMRA prepared a South Yarra Station options assessment (MMRA, June 2015) which was supported by the Customer Outcomes and Economic Assessment Report.

185. The analysis in the Customer Outcomes and Economic Assessment Report assessed the South Yarra interchange option by running full VITM runs of the default...
Project and interchange station options, this fed into a standard economic appraisal, which found the Melbourne Metro South Yarra station option had a benefit cost ratio of 0.2.

186. The Ministerial briefing note (Document 104) drew on the Customer Outcomes and Economic Assessment Report and the South Yarra Station options assessment (MMRA, June 2015) and made a recommendation that the Project should proceed without a new interchange at South Yarra, as to include one would increase the cost of, and disruption by, the Project far beyond the benefits offered. This enabled a decision to be made by the Minister for Public Transport regarding whether the Project should proceed without a new South Yarra Interchange Station. Subsequently the Minister made a project scoping decision which omitted a South Yarra Interchange Station and formed the basis of the concept design which was assessed in the EES process.

187. Chapter 7 of the Business Case "Project options analysis and Recommended Solution" included the results of a detailed assessment of the optimal scope and alignment for the Melbourne Metro rail tunnel, including the location of stations along the proposed route. It sets out the key options for Melbourne Metro (including station locations) and assesses the relative merits of these options and recommends a preferred solution. This options analysis was undertaken for five identified geographical areas (Study Areas), and included an analysis of the options for Study Area E – South Yarra.

188. The options analysis for Study Area E – South Yarra considered two key decisions:

- Decision E1: What is the preferred alignment and station location options for South Yarra; and
- Decision E2: is the station investment justified.26

189. This options analysis concluded that:

South Yarra currently enjoys high levels of public transport accessibility and with the introduction of Melbourne Metro, will provide greater frequency and reliability of Frankston and Sandringham services. Alternative interchange stations (namely Caulfield, Flinders Street and Melbourne Central stations) provide opportunities to access the Dandenong line and new Melbourne Metro alignment from South Yarra. On balance, it is considered that the

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26 Business Case, p126-128
significant cost to the project including property acquisition requirements and the resulting impact on local residents and businesses, is not substantiated by the additional public transport benefits an interchange station at South Yarra would provide. Accordingly, it is recommended that the project proceed without a new interchange station at South Yarra.\footnote{Business Case, p 128}

190. Appendix 2 to the Business Case contains a "Project Options Analysis". Which sets out the options assessment methodology and detailed options analysis undertaken in relation to the project options set out in Chapter 7 of the Business Case. The methodology and evaluation criteria are summarized at pages 1-5 of Appendix 2.

191. The options identification for Study Area E- South Yarra are set out in section 7.2,\footnote{App 2, p 54.} whilst the decision as to whether an investment in South Yarra station is justified is set out in section 7.3 of Appendix 2.\footnote{App 2, p 58.} Table 23 sets out a South Yarra investment analysis. At section 7.3.1 the conclusion of the options analysis is that:

\textit{It is recommended that the project should proceed along a Toorak Road alignment without a new interchange station at South Yarra.}

192. The updated and more detailed demand forecasts for the Business Case included updated forecasts at South Yarra station, enabling updated consideration of implications of future growth and change in travel at this site. PTV undertook internal analysis as to whether the BCR would change given these updated forecasts. While the South Yarra station forecasts undertaken for the Business Case did increase compared to those in the \textit{Melbourne Metro Rail Project - South Yarra Metro Station Customer Outcomes and Economic Assessment Report} (PTV, June 2015), the magnitude of change was not sufficient to change the original BCR (0.2-0.33) to a BCR of greater than one. The BCR was very low and would have needed a significantly greater increase in passenger trips affected by this change for this outcome to be different. Given the low BCR it was not necessary to re-do the detailed analysis performed as part of the Project scope decision. The original scope decision was upheld by the updated demand forecasts in the Business Case.

193. Other documents which played an informative role in the analysis of a South Yarra interchange option included:

\footnotesize{\begin{itemize}
\item Business Case, p 128
\item App 2, p 54.
\item App 2, p 58.
\end{itemize}}
• a Melbourne Metro Transport Demand Forecasting Report (AECOM Arup, March 2016) PTV; and

• Melbourne Metro Patronage Forecasting Report, VLC for PTV (February 2016).

194. A peer review of a draft of these and other demand forecasting reports was conducted by ATMC and is contained in The Transport Modelling for Melbourne Metro – Peer Review of Forecasting Reports – Addendum (February 2016). It found that:

• the Melbourne Metro transport modelling is robust and fit for purpose; and

• the models are performing as would be expected, the outputs are reasonable and that they provide a sound basis for planning and evaluating the MM Program and MM Extended Program.30

195. The Business Case was also the subject of a peer review by KPMG entitled Melbourne Metro Economic Evaluation; Peer Review Report (March 2016), which concluded that:

• The approach to the economic evaluation was in accordance with the general practice for transport project evaluation;

• The parameters, assumptions and reported equations align to general practice for transport project evaluation;

• The results of the evaluation appear to be reasonable;

• No further refinement, modifications or changes are required to the economic evaluation to satisfy KPMG in its review of the economic evaluation report of the Melbourne Metro.

196. The EES documentation does not assess the merits of the potential addition of a South Yarra station given that it is outside the scope of the Project and the concept design which is the subject of the EES process. The EES documentation does assess a series of risks and impacts from the Project in the South Yarra area.

197. PTV submits that there is a substantial body of work that stands behind the Project scoping decision and that assessed the costs and benefits of including a South Yarra interchange station. PTV submits that Mr McDougall’s responses in cross-examination by Mr Morris indicated that he had seen or was aware of the documents

30 Transport Modelling for Melbourne Metro – Peer Review of Forecasting Reports (February 2016) p 3.
making up this body of work. In these circumstances it is untenable to maintain that the interchange station has not been thoroughly assessed and considered.

198. In his oral and written evidence Mr McDougall has contended that the decision as to whether to include South Yarra station "should be based on a much better assessment than is currently available". Under cross-examination from Mr Morris QC, Mr McDougall agreed with the principle that "any assessment is normally iterative and if at an early iteration it simply looks like it's never going to pass the muster you don't generally then go to the next iteration". PTV submits that the assessment process regarding the South Yarra station is an example of an iterative assessment and decision making process, which appropriately considered and ruled out the construction of an interchange station at South Yarra as part of this Project.

**Current Integrated Transport Planning**

199. PTV agrees with submissions by the City of Stonnington that the concept of an integrated transport network is a fundamental tenet of town planning and transport planning, and that these principles are expressed in Plan Melbourne.

200. Plan Melbourne’s first iteration in 2013, included a Melbourne Metro with a similar alignment and stations to the Project. However, Plan Melbourne 2014 depicted a rail tunnel via Domain, Montague, and Southern Cross, and re-joining the network into the City Loop (Melbourne Rail Link). The Melbourne Rail Link is no longer a commitment, and has been superseded by the Project.

201. PTV notes that Plan Melbourne 2014 is in the process of being updated, and that the update of Plan Melbourne is anticipated to be released before the end of the year. This update will reflect actual Victorian Government commitments to transport, including the Project.

202. The *Plan Melbourne Refresh discussion paper* (October 2015) has already informed the community that Plan Melbourne is being updated to reflect the Project’s alignment.

203. The Metropolitan Melbourne Structure Plan in Plan Melbourne identifies key land-use elements, including National Employment and Innovation Clusters, Metropolitan Activity Centres, Activity Centres and Urban-Renewal Precincts.

204. PTV recognises that Prahran/South Yarra is an Activity Centre within this Structure Plan. As part of this centre, the Forrest Hill precinct, adjacent to the South Yarra Station, is also designated as an urban renewal precinct.
205. In Plan Melbourne 2014, Forrest Hill was listed as one of 18 urban renewal opportunities in the Central Subregion of Melbourne. These urban renewal areas are at different stages of development and are supported by strong existing or planned public transport networks. Forrest Hill has already undergone a substantial level of redevelopment, supported by existing train and tram connections.

206. For the reasons outlined above services to South Yarra will continue to be served by high frequency services, and to have strong network connectivity. This is appropriate given South Yarra's continued role as a significant activity centre within the broader metropolitan public transport network.

Conclusion

207. PTV takes this opportunity to commend the Project to the IAC, and reinforce PTV's support for the Project broadly in the form it was publicly exhibited.

208. PTV thanks the IAC for its work in considering the Project, which is so very important to the development of Melbourne's public transport system and to the future of greater Melbourne and the State of Victoria.
<table>
<thead>
<tr>
<th>Issue</th>
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<td><strong>Impacts on the public transport network during construction</strong></td>
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<tr>
<td><strong>Notification of public transport disruptions and consultation with stakeholders</strong></td>
<td>MM100, MM180, MM289, MM308, MM367</td>
<td>PTV and its operators have procedures and standards for managing planned disruptions. PTV is a member of the MMRA led Traffic and Transport Working Group (TTWG). PTV will work with MMRA and the TTWG to ensure that plans are developed and implemented in advance of disruptions for each location or phase of works in the context of MMRA's overall approach to managing transport and traffic. The plans for public transport will cover communication of changes to the public, engagement with relevant stakeholders, and mitigating disruptions to the wider public transport network. Communication may take a range of forms, including meeting with relevant stakeholders, engaging community advisory services, using signage, existing communication channels such as websites and mobile phone &quot;apps&quot;, social media and other communication tools. PTV and its operators monitor public transport use and adjust available capacity and frequency across the network to meet passenger demand. PTV will continue to do this in consultation with MMRA and operators throughout the construction period.</td>
<td>Paragraphs 21(a)-(e), 52-56</td>
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<tr>
<td>• Query of how relevant stakeholders will be notified about changes to public transport routes during construction.</td>
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<td>• Request for major stakeholders to be able to participate in the development of traffic management plans (accommodating interruptions during construction).</td>
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<td>• Request for real-time travel information through areas affected by construction to be provided for public transport travel.</td>
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<td>• Recommendation to monitor the increased public transport use as a result of the construction activities, with a plan prepared for the provision of additional or replacement services in consultation with PTV where capacity is being exceeded.</td>
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<tr>
<td>• Proposal that changes in public transport use as a result of the construction activities are to be monitored, with a plan prepared for the provision of additional or replacement services in consultation with PTV where capacity is being exceeded.</td>
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<td><strong>Minimising disruptions</strong></td>
<td>MM365, MM367</td>
<td>PTV will work with MMRA to minimise the extent of disruptions to public transport by scheduling works outside of peak times where possible. PTV will continue to operate services that are unaffected by construction works and adjust capacity and frequency across the wider network as required. PTV will collaborate with the TTWG.</td>
<td>Paragraphs 21(a)-(e), 49, 52-56</td>
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<td>• Suggestion that the operation of PTV's night network during construction may provide opportunities for collaboration with the City of Melbourne to promote safety and reduce social and business impacts during CBD South construction works.</td>
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<td>• Proposal that any disruptions to tram and bus services</td>
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<td>and tram shut down periods should be outside of school times.</td>
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<td>including the City of Melbourne in managing impacts on public transport during construction.</td>
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<td>• Concern that the EPRs do not adequately consider the capacity of public transport to accommodate a potential mode shift during construction.</td>
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<td>Re-routing of the number 8 tram</td>
<td>MM4, MM59, MM189, MM212, MM213, MM214, MM226, MM257, MM283, MM289, MM296, MM358, MM364, MM365, MM367</td>
<td>The route change is an unavoidable consequence of the construction of the Project. PTV will work with MMRA and stakeholders to assist MMRA to mitigate construction impacts to public transport as much as possible and to protect the safety and comfort of passengers. PTV is examining bus service options that would stop near the intersection of Domain and Park Street which would provide accessibility for Melbourne Girls' Grammar students and mobility impaired customers. PTV notes submissions raising concerns that No.8 trams may not be returned to Domain Road, whilst others such as Stonnington Council's submission advocate for retaining the service along Toorak Road West permanently. Consideration of this will be undertaken with community consultation, alongside data and insights about tram network performance, customer experience, and connectivity with Domain Station.</td>
<td>Paragraphs 57-70</td>
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<td>• Concern that alighting tram passengers will be at risk when No. 8 tram is re-routed onto a single-lane roadway.</td>
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<td>• Concern that the No. 8 tram will be permanently re-routed down Toorak Road West.</td>
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<td>• Concern that tram infrastructure and advertising billboards will have visual and traffic impacts at Toorak Road West.</td>
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<tr>
<td>• Concern that re-routing the No. 8 tram will reduce connectivity to the Botanical Gardens, Melbourne Grammar and Melbourne Girls' Grammar.</td>
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<td>• Security concerns for students walking along Park Street, which has not been established as a major trafficable area for foot traffic.</td>
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<td>• Impacts to school supervisory arrangements for students arriving by tram – proposal that the temporary tram stop on St Kilda Road be within 100 metres of the Melbourne Grammar frontage.</td>
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<td>• Concern that small businesses will be affected by the removal of the tram service from the northern end of Park St/Domain Road.</td>
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<td>• Concern that elderly people in the Domain area will be isolated without access to the No. 8 tram.</td>
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<td>• Concern that sustained disruption to tram services along St Kilda Road, Domain Road and Park Street will impact</td>
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<td><strong>nearby residents.</strong>&lt;br&gt;• Suggestion of replacing No. 8 tram with a bus between Glenferrie Road and St Kilda Road.&lt;br&gt;• Concern that the EES does not satisfactorily address impacts from the diversion of the No. 8 tram to Toorak Road West. These include heritage, social and community, business, landscape and visual, traffic, land use and planning, noise and vibration and community and stakeholder impacts that are likely to require mitigation.&lt;br&gt;• Concern that there is no reference to the precise location of the new tram stop for the re-routed No. 8 tram.</td>
<td>MM365</td>
<td>PTV is considering options for re-routing bus services currently operating on Grattan Street and will work with MMRA and the TTWG to minimise disruptions.</td>
<td>Paragraphs 80-89</td>
</tr>
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<td><strong>Grattan Street temporary closure</strong>&lt;br&gt;• Concern that impacts from temporary closure of Grattan Street have been underestimated.</td>
<td>MM61</td>
<td>The Victorian Government’s Train and Tram Rolling Stock Strategy proposes introducing 150 new E-class trams over the next decade. PTV will plan for the implementation of these primarily on routes with the highest passenger demand. However, routes that do not have E-Class trams may also benefit. This is because trams displaced by the introduction of newer E-Class trams can be reallocated to other tram routes. These reallocated trams are usually larger than the trams previously operating on those routes. For example, the introduction of E-Class trams on tram route 96 has enabled previous D Class trams to operate on tram route 19, increasing passenger carrying capacity on route 19. Upon Melbourne Metro opening, Domain Station will be within walking distance of Mac Robertson Girls’ High School at the beginning and end of the day.</td>
<td>Paragraphs 130-134</td>
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<td>Park Street Tram Link</td>
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<td>• Recommendation that this is implemented prior to the main construction phase of the Project. Should be appropriately supported by level access stops and a high level of pedestrian accessibility. The Park Street tram stop (at Wells Street) should be designed as a high quality public space.</td>
<td>MM133, MM289, MM364</td>
<td>PTV supports the construction of the Park Street Link and the strategic benefits that it will bring by providing improved access to the western parts of the Central Business District, South Melbourne and Southbank. The Park Street tram stop design is under active consideration by TTWG. Considerations include integrating the tram stop into the existing and future public realm. The Park Street Link is directly enabled by the Project and therefore cannot be delivered ahead of the Project commencement. This is because Melbourne Metro itself provides capacity for travel along the St Kilda Road to Swanston Street corridor allowing for some trams to be re-routed. Domain Station is needed to enable interchanges with trams, particularly those that will go to CBD West, Southbank and South Melbourne.</td>
<td>Paragraphs 96-101</td>
</tr>
<tr>
<td>• Request for reasons for the proposed tram stop in Park Street and for full details of why this is not being integrated within Domain Interchange. Request for assurance that this tram stop will not impede access to the Hallmark Apartments or its underground car park.</td>
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<td>• Concern that there will still be very high demand for Swanston Street trams once the Project is operational and that these should not be re-routed.</td>
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<td>• Recommendation that the upgrade to the Domain – Spencer Street tram link, including Clarendon Street, provides tram priority and level access stops.</td>
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<td>Transport planning around Parkville Station</td>
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<tr>
<td>• Recommendation for tram stops on both the north and south side of Grattan Street on Royal Parade with underground connections from these stops to Parkville Station.</td>
<td>MM364</td>
<td>The super stop proposed for the north side of the intersection will be designed to meet the forecast capacity requirements for the stop. The Parkville Station and underground walkways will increase connectivity at the intersection of Grattan Street and Royal Parade. Tram stop locations on Royal Parade are still under active consideration by the TTWG.</td>
<td>Paragraphs 21(a)-(e)</td>
</tr>
</tbody>
</table>
### Issue

- Concern that future tram super stops on Royal Parade may impede ambulance access and turning. Request for additional traffic studies and modelling to explore the feasibility of alternate tram stop sites.

### Submissions raising

<table>
<thead>
<tr>
<th>Issue</th>
<th>Submissions raising</th>
<th>PTV response</th>
<th>Ref. in PTV submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern that future tram super stops on Royal Parade may impede ambulance access and turning. Request for additional traffic studies and modelling to explore the feasibility of alternate tram stop sites.</td>
<td>MM308</td>
<td>The design of tram stops will take into account the emergency access requirements of the hospitals, and the hospitals will be consulted in relation to these matters. This issue is under active consideration before the TTWG, which includes representatives from emergency services.</td>
<td>Paragraphs 21(a)-(e)</td>
</tr>
</tbody>
</table>

### Exclusion of a South Yarra interchange station

- Request for the Project to interchange with South Yarra Station.
- Concern that the business case does not correctly reflect commuter behaviour and needs.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Exclusion of a South Yarra interchange station</td>
<td>MM12, MM35, MM44, MM164, MM181, MM185, MM257, MM364</td>
<td>The option of including a South Yarra interchange station was considered but excluded because the costs and impacts substantially outweigh the benefits.</td>
<td>Paragraphs 142-168; 175-200</td>
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</tbody>
</table>

- Concern that South Yarra Station needs upgrading.

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</thead>
<tbody>
<tr>
<td>Concern that South Yarra Station needs upgrading.</td>
<td>MM164, MM257</td>
<td>PTV is considering options for the future update of South Yarra as part of a separate project.</td>
<td>Paragraphs 169-173</td>
</tr>
</tbody>
</table>

### Strategic justification for Domain Station

- Concern that the business case for Domain Station does not reflect commuter behaviour and needs.
- Other alternatives are available, such as trams (including larger trams).

<table>
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<tbody>
<tr>
<td>Strategic justification for Domain Station</td>
<td>MM190/356, MM214, MM218, MM283, MM289, MM306, MM313</td>
<td>PTV supports the inclusion of the Domain Station to meet the future public transport needs of the precinct and broader area. The improved connectivity resulting from the Domain Station will help to expand future CBD development along St Kilda Road around the Domain, driving an increase in commercial offices close to the Domain Station. This is in line with the aspirations described in Plan Melbourne, the St Kilda Road North Precinct Plan and the South Melbourne Structure Plan. Whilst there will be a progressive rollout of larger trams into the future, Melbourne Metro will help</td>
<td>Paragraphs 135-141</td>
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<td>Issue</td>
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<tr>
<td><strong>South Kensington</strong></td>
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<tr>
<td>• Concerns that the concept design requires temporary closure of Sunbury line.</td>
<td>MM73, MM83, MM101, MM124, MM238, MM270</td>
<td>Any service disruptions will be limited as much as possible and alternative services will be provided by MMRA in consultation with PTV and train franchisees.</td>
<td>Paragraphs 21(a)-(e)</td>
</tr>
<tr>
<td>• Request to upgrade South Kensington Station.</td>
<td>MM124</td>
<td>PTV monitors the requirements for station upgrades. PTV understands that MMRA is considering upgrades to South Kensington Station during construction. PTV will then consider priorities for improvements to the station alongside other potential station upgrades across the network.</td>
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<td><strong>Rolling stock</strong></td>
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<td>• Proposal that the Project should include automated trains.</td>
<td>MM219</td>
<td>Automated trains are not contemplated as part of the Project.</td>
<td></td>
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<tr>
<td>• Proposal that the Project should include double-decker trains</td>
<td>MM174</td>
<td>Double-decker trains are not technically feasible for the Project, PTV is currently investing in HCMTs to provide additional capacity.</td>
<td>Paragraphs 125-129</td>
</tr>
</tbody>
</table>