West Gate Tunnel Project

Inquiry and Advisory Committee
Transport Evidence Statement

August 2017
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1. **INTRODUCTION**

1.1 **This Report**

THIS IS A WITNESS STATEMENT TO THE INQUIRY AND ADVISORY COMMITTEE - in relation to the Environment Effects Statement (EES) prepared by the Western Distributor Authority (WDA) in relation to the proposed West Gate Tunnel. O’Brien Traffic has been engaged by Hobsons Bay City Council (HBCC) to undertake a transport assessment, provide traffic planning advice, and prepare expert evidence for presentation at the Committee hearing. The report concentrates on the transport impacts of the proposed West Gate Tunnel within the municipality of Hobsons Bay City Council (HBCC), whether the EES is an accurate assessment of the likely impact of the proposed scheme, and what additional mitigation measures may be necessary.

In the course of preparing this report I have:

- inspected the general area;
- reviewed the relationship between the proposed West Gate Tunnel and relevant strategic planning documents;
- reviewed comments and submissions by Hobsons Bay City Council;
- reviewed the alignment Concept Plans for the project prepared by the Western Distributor Authority;
- assessed the wider transport impacts on the Hobsons Bay transport network;
- considered the impact on arterial corridors and local streets if the project proceeds in its current form; and
- proposed mitigation measures to reduce the impact on the City of Hobsons Bay.

1.2 **Code of Conduct**

I confirm that I have read and that I understand the Planning Panels Victoria’s ‘Guide to Expert Evidence’, and that I comply with the provisions of that guide. I also declare that I have made all the enquiries I believe desirable and appropriate to deal with the matters on which I have expressed an opinion in this report, and that no matters of significance which I believe to be relevant have (to my knowledge) been withheld. Opinions expressed in this report are concluded opinions, unless there is any qualification expressed.
1.3 Expert Witness Statement

With respect to provision of Expert Evidence, the following statement is provided:

Name & Address:  Andrew Philip O’Brien, P.T.O.E
                Suite 2.03, 789 Toorak Road, Hawthorn East, Victoria 3123

Qualifications:
                B.E. (Civil), University of Melbourne
                B.A. (Economics & Politics), University of Melbourne
                C.T.P.&C., University of New South Wales
                P.T.O.E. Certified Professional Traffic Operations
                Engineer (No. 300)) USA

Professional Memberships:
                Honorary Member – Institute of Transportation Engineers,
                Fellow - A.I.T.P.M.

Experience:
                14 years Country Roads Board, Road Traffic Authority;
                2 years at TTM Consulting
                30 years at Andrew O’Brien & Associates Pty Ltd/ O’Brien Traffic

Additional Activities:
                - Board member of ITE (Institute of Transportation Engineers) Australian Section, including Secretary, Vice-
                  president, and President - (1982 to 2017);
                - Director – International Board of Direction ITE,
                  Washington (1996-1998);
                - Sessional lecturing and seminars in traffic and transport engineering at Footscray IT, Warrnambool IAE, Monash
                  University, Melbourne University, University of Maryland;
                - Presenter at International Road Safety Audit training courses and Traffic Calming courses in Australia, New Zealand, USA, Canada, and Europe;
                - Author of numerous refereed papers, articles and conference presentations;
                - Author in Ogden & Bennett (& Taylor) Traffic Engineering Practice (several editions), and ITE Traffic Engineering Handbook 1999.

Particular Experience:
                I have had continuous experience in all aspects of traffic engineering, traffic planning, transport planning and road safety engineering since 1971. I have substantial experience and expertise in traffic and safety aspects of road design, road safety investigations and auditing, traffic engineering operations, traffic research, transport network planning, traffic management of both arterial roads and local areas, travel demand management, and traffic impact assessment of developments including traffic generation and parking.
This qualifies me to make my report on the issues as instructed.

**Assumptions, facts, assistance, and matters relied upon:**

**Facts upon which the Report Proceeds:**

- Plan set for the ‘Preferred Design’ provided for West Gate Tunnel project;
- Western Distributor – ‘Development and Urban Design Plans’;

**Reference Materials:**

- WDA response to HBCC questions

**Assistance in Preparation of Report:**

Matt Harridge, Director, and Chirag Safi, Senior Traffic Engineer, have assisted me with the preparation of this report and other relevant materials.

**Instructions:**

I have been asked by Hobsons Bay City Council officers to prepare advice and to provide expert evidence on transport matters relevant to the Environment Effects Statement.

### 1.4 Engagement

O’Brien Traffic had initially been engaged by Hobsons Bay City Council (HBCC) to undertake a transport assessment, provide traffic planning advice, and prepare expert evidence for me to present at the Committee hearing.
1.5 **Background**

The Western Distributor Authority (WDA) released a suite of documents for public consultation relating the West Gate Tunnel Project on 29 May 2017. These documents formed the Environmental Effects Statement (EES).

I have been engaged by HBCC to provide comment on the EES, to undertake necessary investigations to assess the likely impacts of the proposed West Gate Tunnel Project, to examine potential mitigation measures, and to prepare and present expert evidence to the Committee.

1.6 **Report Methodology**

Prior to commencing this report, I had access to the EES suite of documents. Hence this report does not include exhaustive statements about existing conditions and justification for the proposed project, but concentrates on the assumptions made, adequacy of the preferred design, likely problems, and opportunities for mitigation of impacts. I have undertaken analysis within the ‘‘Project Boundary’’ defined by the WDA, and also in reasonable proximity to the project boundary so that the considerable impacts on the municipality of Hobsons Bay can be considered.

We have not been provided with critical information (e.g. the micro-simulation model) needed to properly assess this project. If this information becomes available, we may need to prepare a supplementary report to address the issues that arise.
2. **THE WEST GATE TUNNEL PROJECT**

2.1 **The Project**

The West Gate Tunnel project is a major freeway and tunnel project designed to connect Melbourne’s east and west. The project is intended to relieve pressure on the Monash/CityLink/West Gate Freeway corridors and thus, reduce the City’s reliance on the West Gate Bridge and provide a direct freight link to the Port of Melbourne and remove significant truck volumes from residential areas in the inner west.

The project consists of three components: The West Gate Freeway upgrades would include widening works between the M80 Ring Road interchange and Williamstown Road, providing additional two lanes in each direction to generally increase capacity to six through lanes in each direction plus auxiliary lanes. The tunnels component would include one inbound and one outbound tunnels under Yarraville catering for three lanes of traffic in each direction. The Port, CityLink and city connections component would include a bridge crossing of the Maribyrnong River, connections to the Port Melbourne, and elevated road along Footscray Road and connections to CityLink and the central City. Overall project is shown in Figure 1.

![Figure 1: The West Gate Tunnel Project (Source: EES, Part A, Figure 1)](image)

On 29 May 2017, the Environment Effects Statement (EES) for the West Gate Tunnel Project was released to the public.

A ‘Preferred Design’ for the project was included as part of the EES. However, it is noted that there is potential for alterations (within the project boundary) which will be informed by the detailed design phase.
3. RELATION TO KEY STRATEGIC DOCUMENTS

3.1 Victorian State Documents


The ‘Investing in Transport – East West Link Needs Assessment (EWLNA)’ was a major study by Sir Rod Eddington for the Victorian Government that investigated improvements to transport connections across Melbourne's east-west corridor. That study recommended a number of initiatives to address the transport issues across this corridor, refer to Figure 2. These focused strongly on increasing access to the central city by public transport. Of the initiatives, there were two major infrastructure recommendations. Eddington summarised these projects as follows:

- A new 17 kilometre rail tunnel linking Melbourne's fast-growing western and south-eastern suburbs – a generational 'step-up' in the city's rail capacity and Melbourne's first 'metro' style passenger line.
- A new 18 kilometre cross city road corridor that provides a much-needed alternative to the West Gate Bridge, while also delivering substantial economic, transport and amenity benefits to Melbourne.

Implementation of a Melbourne Metro Project has started.

Figure 2: Summary of Eddington Recommendations

A Truck Action Plan was also recommended “to remove truck traffic from local streets in the inner west.” It was recommended that the plan include road improvements to form an effective bypass around residential areas, reinforced by local truck bans.
3.1.2 Transport Integration Act (2010)

The Victorian Government’s Transport Integration Act provides a framework with six transport system objectives. These objectives are:

- Social and economic inclusion
- Economic prosperity
- Environmental sustainability
- Integration of transport and land use
- Efficiency, coordination and reliability
- Safety, health and wellbeing.

In regard to the ‘Efficiency, coordination and reliability’ objective, this is specified as:

1. The transport system should facilitate network-wide efficient, coordinated and reliable movements of persons and goods at all times.

2. Without limiting the generality of subsection (1), the transport system should:
   
   (a) balance efficiency across the network so as to optimise the network capacity of all modes of transport and reduce journey times;
   (b) maximise the efficient use of resources including infrastructure, land, services and energy;
   (c) facilitate integrated and seamless travel within and between different modes of transport;
   (d) provide predictable and reliable services and journey times and minimise any inconvenience caused by disruptions to the transport system.

3.1.3 Towards Zero (Road Safety Strategy) 2016 - 2020

The Victorian Government’s Road Safety Strategy is working towards a 20% reduction in deaths and 15% reduction in serious injuries in five years. The Strategy is built on the Safe System approach (safe roads, safe speeds, safe road users, safe vehicles).

One focus of the Strategy is to reduce heavy vehicle crashes. The Strategy mentions that the Government will invest in redirecting trucks away from local streets in the inner west of Melbourne.

3.1.4 Plan Melbourne 2017 – 2050

The Victorian Government released Plan Melbourne in March 2017. The long term Plan focuses on managing population growth, growing the economy, creating affordable and accessible housing, improving transport, responding to climate change and connecting communities.

Plan Melbourne aims to enhance “Melbourne’s freight network through the Port Capacity project, the Western Distributor project and the possible establishment of a second container port.”
Plan Melbourne also lists a policy to “avoid negative impacts of freight movements on urban amenity.”

3.1.5 Victoria - The Freight State (2013)

‘Victoria - The Freight State’ is Victoria’s Freight Strategy. The objective of the strategy is to outline a long term plan to improve freight efficiency, grow productivity and better connect Victorian businesses with their markets, whether local, national or international. The plan outlines actions that are intended to provide greater certainty to the private sector and to help inform business planning and investment decisions.

The strategy places heavy emphasis on meeting demand for ‘gateway capacity’, i.e. on meeting demand at ports and terminals within Victoria, and on the strategic upgrading of the transport network to ensure efficient access between freight origins and destinations. The vision includes a higher share of freight being transported by rail. It also supports improved road connections.

One of the key aspects of the strategy is the implementation of major new container capacity at the Port of Hastings. It is stated that this has been demonstrated to have the most significant benefits at a macroeconomic level.

The road transport vision outlined in the strategy for 2050 includes a full East West Link, noting that it provides an alternative to the M1 for cross-city capacity. However, emphasis is placed on the North East Link providing a fully functioning ring road. It states that this orbital route would be heavily utilised to transfer freight between ‘freight gateway’ locations such as Hastings, the Western Interstate Freight Terminal (located in the west of Melbourne), and other freight locations. It also states that the major freight and logistics precincts would be progressively migrated to the periphery of Melbourne, including the relocation of the rail freight hub from the Dynon Road area.

3.1.6 Cycling into the Future (2013 – 2023)

This strategy was developed by the Victorian Government which noted that cycling can:

- improve the health of Victorians;
- contribute to creating better places to live;
- support economic growth and help generate jobs;
- help reduce delays on our roads and public transport networks;
- contribute to a healthier environment by helping to reduce air pollution, noise and greenhouse gas emissions.

The strategy states that the needs of bike riders will be considered as major new transport and infrastructure projects are planned.
3.2 Hobsons Bay City Council Documents

3.2.1 Hobsons Bay City Council Integrated Transport Plan (2006)

Hobsons Bay City Council’s Integrated Transport Plan (ITP) is “intended to provide a basic framework for future transport development that will enable both residents and visitors to access their destination in a safe, equitable and efficient manner.” The Plan states that Hobsons Bay should seek to be (emphasis added):

1. A municipality which hosts a carefully planned, integrated transport network for all vehicles, cyclists and pedestrians adding to the quality of life and strong sense of community for residents. The transport network will encourage visitors to enjoy the area and ensure that the needs of industry and commerce are met while minimising the impacts of heavy vehicle traffic on the amenity of the area.

2. The municipality will have a high class Public transport network (trains and buses) which adequately caters for the needs of the local community.

3. The municipality will have a well planned and constructed network of industrial roads connecting to main roads and freeways to service industrial areas without affecting the amenity of more sensitive land uses within the municipality.

4. There will be adequate parking facilities to serve activity and tourist precincts. On site parking will be adequate to meet the need generated by particular land uses without overloading public facilities.

5. There will be a network of well connected cycle and pedestrian paths that are safely separated from vehicular traffic to encourage commuter and recreational use.

6. Altona and Williamstown will be important water transport terminals and tourism nodes on Hobsons Bay and Port Phillip Bay.

3.2.2 Western Transport Strategy (2012)

The Western Transport Strategy was co-funded by Hobsons Bay City Council.

As part of the Strategy, the following six Strategic Objectives were developed:

- Economic Development: Promote opportunities for transport to support sustainable economic prosperity for the region
- Competitive Positioning: Sustain and develop the region’s competitive advantages through the design of the transport network
- Access to Employment: Increase accessibility to employment opportunities in the region to facilitate better management of travel demand
- Impact Reduction: Reduce the adverse impacts from transport operations on the region
- Resilient alternatives: Provide improved transport alternatives to address changing transport demands resulting from changes in land use and demographics
- Freight: Develop an integrated freight system for the region

The Strategy strongly reiterated the urgency of a new east west crossing of the Maribyrnong River that meets the need of freight and provides network resilience.
An action of the Strategy was also to use demand management tools to create network resilience and secure the best use of current and future capacity, whilst avoiding unintended adverse impacts on the Central City. Such tools included pricing, road space allocation (bus rapid transit service on the West Gate Freeway) and targeted dedicated infrastructure such as truck-only access routes to the Port.

3.2.3 **Hobsons Bay Strategic Bicycle Plan**

This plan seeks to further build on the existing bicycle network to develop a highly connective bicycle network.

A number of the proposed projects in the Bicycle Plan would interact with or be impacted by the West Gate Tunnel Project.

The West Gate Tunnel Project needs to be evaluated against the Hobsons Bay Strategic Bicycle Plan.

3.2.4 **Planning Scheme Amendment C88**

Planning Scheme Amendment C88 is being exhibited between 6 July 2017 until 1 September 2017.

The Amendment applies to a 66 Ha site in Altona North known as Precinct 15 (Former Dons site). The West Gate Freeway borders this site to the north.

It is proposed to rezone the site from Industrial 1 Zone to Comprehensive Development Zone which would permit residential and business uses along with a town centre and parks. It is estimated that the site would accommodate approximately 7,000 people in 3,000 new dwellings.

The conceptual road network is provided in Figure 3.
Figure 3: Conceptual Road Network for Amendment C88
4. ENVIRONMENT EFFECTS STATEMENT

4.1 Purpose

On 29 May 2017 WDA released the EES for the ‘West Gate Tunnel Project’ to the public.

The Environment Effects Statement is a suite of documents that purports to ‘assess the anticipated impacts of the project and examine options for avoiding, managing and mitigating any negative impacts.’ It also describes the Preferred Project and presents the findings of the WDA’s consultants’ impact assessments. Through these assessments it attempts to identify performance requirements and obligations that would be placed on the contractors delivering the project.

The EES includes a main document which is supported by numerous technical appendices. The review of the transport impacts of this project is focussed on the analysis contained in ‘Technical Report A – Transport Impact Assessment’. That document will be referred to in this report as the TIA.

The stated objective of the TIA is to:

- Understand the operation, constraints and opportunities of the existing transport network in the vicinity of the project
- Understand the relationship between the current and planned transportation network and the current and planned land use in the area surrounding the project
- Assess the transport risks (including for traffic, freight, public transport, bicycles, pedestrian and constructability) and potential impacts associated with the project
- Satisfy regulatory requirements under the Road Management Act 2004
- Satisfy the objectives and decision-making principles of the Transport Integration Act 2010
- Develop mitigation and management measures and a succinct set of performance requirements and indicators for transport that specify the limits and processes that must be followed to achieve an acceptable outcome during construction and operation.

The stated purpose of this TIA is essentially to examine the risks and impact of the proposed project and identify suitable mitigation measures. VicRoads does not have a formal guide for TIAs, but DIER Tasmania has, and they state: “The purpose of a Traffic Impact Assessment (TIA) is to assess the impacts of development on the transport network and identify reasonable solutions, applicable to the Tasmanian experience, to address these impacts. . . . A full and detailed assessment of how vehicle and person movements to and from a (project) might affect existing road and pedestrian networks is required.” That guide is typical in its requirements.

However, in my opinion I consider that this TIA, in its final form, does not meet from its stated objective. This is most clearly apparent in relation to limiting the coverage of the study area by excluding the Princes Freeway west of the M80 Ring Road and local road network south of the West Gate Freeway in the TIA – areas which are
clearly impacted. Analysis and modelling should include a wider area (including local areas to identify where mitigation is required). The second major failing of the TIA is the lack of available detail to make a proper assessment. I have never seen a TIA that does not provide before and after analyses of critical intersections – e.g. Melbourne Road interchange.

4.2 The Preferred Design

The *Preferred Project* is a design for the West Gate Tunnel that shows how the tunnel could connect with the West Gate Freeway, CityLink and central city, ramp modifications to Williamstown Road, Millers Road, Grieve Parade, and the Port of Melbourne Area.

It is noted that if the winning tenderer intends to utilise the Preferred Project as a basis of their final design, it is recommended that significant changes are implemented to address impacts identified in this report, which may thus have cumulative impact on traffic impacts.

4.3 The Project Corridor

The West Gate Tunnel has a defined Project Boundary, which includes the proposed route and Preferred Project envelope. The proposed project corridor is shown in Figure 4. The physically impacted area includes private properties and open spaces.

![Figure 4: Project Corridor (Ref: EES, Part A, Figure 8)](image-url)
4.4 **Environment Performance Requirements**

The Environmental Performance Requirements (EPRs) and objectives of the project are intended to guide what the project must achieve during its construction and operation, regardless of any specific design solution. They are about project outcomes rather than specific design requirements. The initial set of EPRs that were developed by defining the legislative and policy requirements and project commitments have been refined during the assessment process and as the project design has developed. Final EPRs relative to transport assessment are provided below with my comments inserted where necessary.

*Traffic Performance Requirement TP1*

*Optimise design performance*

Optimise the design of the Works in consultation with appropriate road management authorities as part of the detailed design process to:

- minimise adverse impact on travel times for all transport modes, including walking and cycling
- maintain, and where practicable, enhance the existing traffic movements at interchanges
- design interchanges and intersections to meet relevant road and transport authority requirements
- maintain, and where practicable, enhance pedestrian movements and bicycle connectivity, and shared use paths
- develop a strategy with Public Transport Victoria to minimise impacts on buses, trams and rail and, where practicable, enhance public transport facilities and services that cross or run parallel to the alignment of the Freeway
- minimise loss of car parking in consultation with relevant local councils

*My Comment:* It is not apparent that any effort has gone into optimising the design, as there is minimal detailed analysis of traffic conditions that would form the basis of such design. The scale of the drawings provided makes it virtually impossible to assess details. Just examining the Millers Road interchange and the Melbourne Road interchange indicates likely design flaws relating to lane numbers and accessibility to the added lanes.

*Traffic Performance Requirement TP2*

*Optimise design performance*

Undertake traffic monitoring in selected streets identified in consultation with the relevant local council pre-construction, at six monthly intervals during construction, up to two years after construction is complete. Implement local area traffic management Works in consultation with the local relevant councils.
Develop and implement traffic performance management along the West Gate Freeway during construction. Real time traffic information must be provided to drivers on the approach to the West Gate Freeway.

My Comment: The sub-heading ‘Optimise design performance’ does not appear to relate to either the heading or the following text. This TP appears more about traffic management during construction.

Traffic Performance Requirement TP3
Traffic management plan
Develop and implement Traffic Management Plans with measures to minimise disruption, to the extent practicable, to motor vehicle traffic, parking, bicycle and pedestrian movements during construction in consultation with relevant road management authorities, including:

- management of any temporary or partial closure of traffic lanes, including along:
  - local roads, including provision for suitable routes for vehicles, cyclist and pedestrians to maintain connectivity for road and shared path users
  - CityLink traffic lanes and ramps
  - M1 and Footscray Road
  - Hyde Street, Francis Street, Whitehall Street
- a strategy for maintaining the current capacity (number of lanes) during peak periods for Works on the following key State roads - West Gate Freeway, Princes Freeway, M80, Footscray Road, Wurundjeri Way, Dudley Street, Williamstown Road, Millers Road, Grieve Parade
- restrict the number of local roads to be used for construction-related transportation to minimise impacts on amenity, in consultation with the relevant road authorities
- reinstate access to open space, community facilities, commercial premises and dwellings if disrupted, as soon as practicable
- provide suitable parking arrangements to accommodate the construction workforce whilst minimising traffic impacts on local roads, preventing construction-related parking on local roads or use of public car parks
- provide safe access points to laydown areas and site compounds
- implement a communications strategy (as set out in the CCEP) to advise affected users, potentially affected users, relevant stakeholders and the relevant road authorities of any changes to transport conditions
- maintain, where practicable, current local area traffic management measures during construction or reinstate upon completion in consultation with the relevant local councils
- haulage of bulk material to and from the construction areas to within a two km range of the Works must be via roads operated by VicRoads, CityLink or the Port
Manager or, subject to obtaining prior agreement by the relevant road authority, other parts of the road network.

The Traffic Management Plan may include Worksite Traffic Management Plans (WTMP) for discrete components or stages of the Works having the potential to impact on roads, shared used paths, pedestrian paths or public transport infrastructure.

My Comment: The traffic management plans need to incorporate the needs of public transport, pedestrians and cyclists, and there may be a need to increase public transport services to mitigate traffic congestion caused by construction activities.

Traffic Performance Requirement TP4

Public transport

Develop and implement measures to minimise to the extent practicable disruption during construction to all impacted railway lines, tram and bus routes in consultation with VicTrack, Yarra Trams, and Metro Trains Melbourne, and to the satisfaction of Public Transport Victoria.

Traffic Performance Requirement TP5

Rail operations

Minimise disruption to the rail infrastructure and operations in consultation with the relevant rail infrastructure stakeholders.

Traffic Performance Requirement TP6

Design standards

Design new Works (including shared use facilities) in accordance with applicable design standards and undertake independent road safety audits after each stage of detailed design and after construction.

My comment – To be effective in addressing safety issues, road safety audits at all audit stages are needed. From my experience of auditing nearly all of the major motorway projects in Auckland over the past 20 years, the earlier the audits, the more effective they are in identifying, addressing, and ameliorating safety problems.

Traffic Performance Requirement TP7

Traffic Management Liaison Group

A Traffic Management Liaison Group (TMLG) must be established prior to the commencement of any Works that may impact on existing roads, paths or public transport infrastructure. The TMLG must include representatives from the State, VicRoads and Project Co. Other relevant agencies as nominated by the State may be included as required.

My comment – Local Councils need representation for activities within their areas.
The TMLG will be a forum for exchange of information and discussion of issues associated with Traffic Management Plans.

The TMLG must be provided with the Traffic Management Plans, details as to timing of implementation, information about construction traffic monitoring conducted by Project Co, and other reports as relevant.

The TMLG must meet regularly until the completion of construction.

Traffic Performance Requirement TP8

River navigation

Navigational channel of Maribyrnong River must not be impeded without approval of the relevant authority.

Traffic Performance Requirement TP9

Melbourne Metro Rail Authority interface

Consult and coordinate with Melbourne Metro Rail Authority to manage and where possible minimise, cumulative impacts of construction vehicles.

4.5 Key “Big Picture” Deficiencies

There are a number of substantive deficiencies in the EES and associated documents, which limit a proper evaluation of the traffic impacts on Hobsons Bay. These can be summarised as follows:

- There is a major bottleneck under the current conditions at the lane drop westbound between the M80 Western Ring Road entrance and the Kororoit Creek Road interchange. The project proposes to extend the 5-lane cross-section further downstream to the Kororoit Creek Road off-ramp. As such, the existing bottleneck is moved further west; however, the project corridor does not extend west of Kororoit Creek Road, where the westbound carriageway loses a lane. Adding more capacity east of Kororoit Creek Road will just move the bottleneck to that interchange and flow breakdown and queues will be generated from the Kororoit Creek Road westbound on-ramp where flows are of a similar magnitude to those on the off-ramp. This is considered a major shortcoming. The new fifth westbound lane needs to extend to Forsyth Road interchange to overcome this problem.

- The study area analysis did not include the local road network performance north and south of the West Gate Freeway. The TIA did not include operational assessment of local intersections along Melbourne Road, Millers Road, Geelong Road, Grieve Parade, Kororoit Creek Road and Blackshaws Road. Given significant traffic diversions are projected to occur at these roads, the micro-simulation assessment must be extended beyond the project corridor to fully capture risks and impacts. This is another major shortcoming.
• The WGT is three lanes at the southern portal, but this drops to 2-lanes just prior to connecting to the outer roadway east of Millers Road. This raises the question as to whether 3-lanes are needed, or whether there is an agenda for a further upgrading west of the tunnel. In addition, a 3 to 2-lane drop at the tunnel portal followed by the combined heavy volume on-ramp from Williamstown Road, West Gate Bridge carriageway and Hyde Street has potential to form a major bottleneck, especially due to higher truck volumes.

• The strategic modelling results (including raw model results, adjusted turn movement estimates at interchanges and local intersections) are not adequately detailed in the TIA, preventing the proper analysis of local impacts.

• No intersection analyses have been provided as a part of the TIA. As discussed earlier this is a fundamental consideration to be addressed in the TIA.

• The queue lengths and delays for individual lanes and turn movement were not included in the TIA. Given the magnitude of the project, it is important to understand how individual turn movements would perform under the no-project and project cases.

• The project has no alternatives. It is important to assess various alternatives to achieve the same purpose and objectives, and select the most viable and sustainable.

• Project is merely a short-term fix and has a single modal focus. The extra capacity for single occupant cars means not only more frequent and longer journeys, but also shift to single car mode. All the improvement options, such as travel demand management, active traffic management, multimodal transport, integrated land use planning should be exhausted before embarking on major infrastructure projects such as this one.

• A far more effective and efficient project would incorporate modern travel demand management actions such as HOV or HOT priority at ramp signals, possibly HOT lanes on the freeway, and congestion priced tolling.

Separate to the above is a major concern with the Project – the concentration of so much travel in the one corridor. The previously proposed Western Link part of the earlier East West Link used a separate corridor to the north of the WGF. The major risk now is that a serious incident could close all carriageways, or at least both carriageways in one direction – leading to chaos and economic damage. No justification seems to have been provided for the move away from the earlier proposed alignment.
5. **NETWORK WIDE ASSESSMENT**

5.1 **Analysis Provided**

The analysis of the transport network impacts within the TIA was based on strategic modelling and local area/spreadsheet modelling (unclear as specified in the paragraph below). The strategic modelling was carried out by Veitch Lister Consulting (VLC) using its Zenith model. The Zenith model was developed for the former Western Distributor Business Case. The model is multimodal meaning that it includes trips undertaken by public transport, and can assess changes in public transport infrastructure in addition to major road network improvements.

According to the Modelling Summary Report (Appendix F), VISUM modelling platform was used to estimate peak hour traffic volumes within the study corridor. Given the VLC Zenith model is a partially constrained model, the resultant volumes may show traffic volumes that are higher than realistically expected in some locations. Therefore, the VISUM modelling was undertaken to generate design volumes that can pass through the study area based on traffic constraints. However, the TIA report does not mention the VISUM modelling at all, but rather states “spreadsheet modelling converts partially constrained traffic volumes from the strategic model into full constrained volumes for use in this, and other assessments”. As such, the TIA and its appendices cited completely different sources to generate balanced/constrained volumes, questioning overall credibility of the assessments.

Although the strategic modelling process seems reasonable, it lacks transparency as to how and when the traffic volumes predicted by the VLC Zenith model were adjusted. Also, the VISUM modelling essentially spreads the peak beyond traditional 7-9 AM and 4-6 PM, but the operational assessment was limited to these peak periods. Micro-simulation assessment should be undertaken for 6-10 AM and 3-7 PM to accurately reflect risks and impacts of spreading the peak.

In addition, the Transport Modelling Summary report provides insufficient levels of detail to be able to precisely gauge how traffic volumes would change on local and arterial streets and intersections. The entire focus of the Transport Modelling Summary report appears to be on presenting freeway and interchange volumes. Without having access to predicted turning movement volumes at interchanges and local/arterial intersections, the capacities and the level of risks and impacts cannot be assessed.

It is understood that VLC/GHD assessed three main modelling scenarios as follows:

- 2014 existing (Base) conditions;
- 2031 no project case; and
- 2031 project case.

The Zenith model was recalibrated in 2014 using model parameters generated from VISTA, and validated 2011 traffic estimates and 2011 public transport patronage estimates. In 2016 and 2017, it was determined by the project team (including representatives from VicRoads, DEDTJR, the technical advisors and VLC) that 2014 would be an appropriate year to validate the EES model.
To compare the no project and project cases, the TIA considers five main outputs based on strategic modelling:

- **Total number of vehicle trips on the network**;
- **Total vehicle kilometres travelled (VKT) on the network**;
- **Total number of vehicle hours travelled (VHT) on the network**;
- **Average speed**; and
- **The number of public transport boarding and trips**.

It should be noted that both Zenith and VISUM models do not take into account intersection delay, which may result in the modelled scenario differing greatly than what would be anticipated to occur in reality at locations where intersections are operating near capacity. This is particularly relevant for the Hobsons Bay City Council network which currently suffers considerable congestion and which would be severely congested in parts as a result of the West Gate Tunnel project.

### 5.2 2031 No Project Case

The TIA presents tables and figures comparing the 2031 no project case with the 2014 base case.

**Table 1** shows the reported network wide vehicle trips by western LGAs in 2031 and the change in percentages from the 2014 existing. The daily trips in the Western LGAs are shown to increase by 48% and the AM peak trips by 40%. It is considered that the lower growth in the AM peak is due to the network being capacity constrained. The percentage increase in kilometres travelled is greater than the increase in trips, showing that people are travelling greater distances, and that the average trip length has increased – which is an expected outcome. The time travelled undergoes even a greater percentage increase, indicating that drivers are not only travelling longer distances, they are taking disproportionately longer to do so. This is reflected in the reduction in average speed.

**Table 2** shows that the daily number of public transport boardings in the Western LGAs increases by 109% and trips by 106%. Slightly higher percentages are reported for the AM peak period, which is considered a result of the capacity constraints in the road network for private vehicle trips in peak hours. Whilst the total number of public transport trips is significantly smaller than the number of vehicle trips, the growth rate in public transport trips and users is substantially higher. Given the existing peak period stress on the public transport system, it is unclear how this increased demand will be satisfied, i.e. will there be infrastructure improvements, increase in frequency, or augmentation of fleet size to absorb the reported significant increase in public transport demand? The TIA report fails to encapsulate an explanation as to why these significant increases are plausible.
Note: outward and return trips originating from the given sector
Numbers in bracket represent the percentage change compared to the 2014 no project case

**Table 1: Network Wide Traffic, 2031 No Project Case (EES, Part A, Appendix E, Table 167)**

<table>
<thead>
<tr>
<th></th>
<th>Western LGAs</th>
<th>Rest of Melbourne</th>
<th>Greater Melbourne</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekday</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips</td>
<td>2,158,000 (+48%)</td>
<td>8,776,000 (+26%)</td>
<td>10,934,000 (+29%)</td>
</tr>
<tr>
<td>VKT (1,000 km)</td>
<td>32,349 (+54%)</td>
<td>111,308 (+30%)</td>
<td>143,657 (+34%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>614,000 (+59%)</td>
<td>2,479,000 (+33%)</td>
<td>3,093,000 (+38%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>53 (-3%)</td>
<td>45 (-3%)</td>
<td>46 (-2%)</td>
</tr>
<tr>
<td><strong>AM peak (7 am – 9 am)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips</td>
<td>350,000 (+49%)</td>
<td>1,392,000 (+23%)</td>
<td>1,742,000 (+26%)</td>
</tr>
<tr>
<td>VKT (1,000 km)</td>
<td>5,034 (+53%)</td>
<td>17,811 (+28%)</td>
<td>22,646 (+32%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>130,000 (+69%)</td>
<td>502,000 (+39%)</td>
<td>632,000 (+45%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>39 (-10%)</td>
<td>35 (-8%)</td>
<td>36 (-8%)</td>
</tr>
<tr>
<td><strong>PM peak (4 pm – 6 pm)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips</td>
<td>367,000 (+47%)</td>
<td>1,511,000 (+23%)</td>
<td>1,876,000 (+27%)</td>
</tr>
<tr>
<td>VKT (1,000 km)</td>
<td>5,442 (+54%)</td>
<td>18,753 (+28%)</td>
<td>24,195 (+33%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>135,000 (+71%)</td>
<td>512,000 (+39%)</td>
<td>647,000 (+45%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>40 (-10%)</td>
<td>37 (-8%)</td>
<td>37 (-8%)</td>
</tr>
</tbody>
</table>

Note: outward and return trips originating from the given sector
Numbers in bracket represent the percentage change compared to the 2014 no project case

**Table 2: Network Wide Public Transport Trips, 2031 No Project Case (EES, Part A, Appendix E, Table 168)**

<table>
<thead>
<tr>
<th></th>
<th>Western LGAs</th>
<th>Rest of Melbourne</th>
<th>Melbourne</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekday</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips</td>
<td>320,000 (+109%)</td>
<td>2,377,000 (+86%)</td>
<td>2,697,000 (+86%)</td>
</tr>
<tr>
<td>Boardings</td>
<td>430,000 (+109%)</td>
<td>3,002,000 (+93%)</td>
<td>3,522,000 (+94%)</td>
</tr>
<tr>
<td><strong>AM peak (7 am – 9 am)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips</td>
<td>126,000 (+117%)</td>
<td>514,000 (+82%)</td>
<td>640,000 (+89%)</td>
</tr>
<tr>
<td>Boardings</td>
<td>155,000 (+118%)</td>
<td>652,000 (+88%)</td>
<td>807,000 (+93%)</td>
</tr>
<tr>
<td><strong>PM peak (4 pm – 6 pm)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips</td>
<td>32,000 (+113%)</td>
<td>550,000 (+95%)</td>
<td>582,000 (+96%)</td>
</tr>
<tr>
<td>Boardings</td>
<td>55,000 (+120%)</td>
<td>733,000 (+104%)</td>
<td>787,000 (+104%)</td>
</tr>
</tbody>
</table>

5.3 **2031 Project Case**

The network-wide comparison between the 2031 no project case and the 2031 project case.

The percentage differences in the number of trips in the Western LGAs, distance travelled and time taken to travel varies only slightly between the scenario with and without the West Gate Tunnel project (Table 3). The TIA reports that this is equivalent to approximately 1,000 additional vehicle trips per day (mainly induced demand), 200 additional kilometres travelled per day, but with 2,000 less hours spent travelling per day. Referring to the percentage changes, with no considerable
Changes in the trips, total kilometres would increase by 0.7%, indicating even longer trip lengths.

Furthermore, when considering that in the AM and PM peaks, the percent increases in kilometres travelled indicate that with a little increase or decrease in total trips, trip lengths are increased with the West Gate Tunnel project. So drivers will be travelling faster but farther. This may (although not necessarily) be the result of additional travel on the local network to reach the West Gate Tunnel.

<table>
<thead>
<tr>
<th></th>
<th>Western LGAs</th>
<th>Rest of Melbourne</th>
<th>Greater Melbourne</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekday</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips*</td>
<td>2,157,000 (0.0%)*</td>
<td>8,761,000 (0.1%)</td>
<td>10,938,000 (0.0%)</td>
</tr>
<tr>
<td>VKT (1,000 km)</td>
<td>32,549 (0.7%)</td>
<td>111,651 (0.3%)</td>
<td>144,220 (0.4%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>612,000 (-0.3%)</td>
<td>2,474,000 (-0.2%)</td>
<td>3,086,000 (-0.2%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>53 (0.4%)</td>
<td>45 (0.3%)</td>
<td>47 (1.6%)</td>
</tr>
<tr>
<td><strong>AM peak (7 am – 9 am)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips*</td>
<td>352,000 (0.6%)</td>
<td>1,392,000 (0.0%)</td>
<td>1,744,000 (0.1%)</td>
</tr>
<tr>
<td>VKT (1,000 km)</td>
<td>5,093 (1.2%)</td>
<td>17,772 (0.9%)</td>
<td>22,865 (1.0%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>130,000 (0.0%)</td>
<td>505,000 (0.6%)</td>
<td>635,000 (0.6%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>39 (0.3%)</td>
<td>35 (0.5%)</td>
<td>36 (-0.1%)</td>
</tr>
<tr>
<td><strong>PM peak (4 pm – 6 pm)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trips*</td>
<td>366,000 (-0.3%)</td>
<td>1,514,000 (0.2%)</td>
<td>1,880,000 (0.1%)</td>
</tr>
<tr>
<td>VKT (1,000 km)</td>
<td>5,493 (0.9%)</td>
<td>18,902 (0.8%)</td>
<td>24,395 (0.8%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>135,000 (0.0%)</td>
<td>514,000 (0.4%)</td>
<td>649,000 (0.3%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>41 (1.7%)</td>
<td>37 (-0.7%)</td>
<td>38 (1.5%)</td>
</tr>
</tbody>
</table>

Note: outward and return trips originating from the given sector
Numbers in bracket represent the percentage change compared to the 2031 no project case

Table 3: Network Wide Vehicle Trips, 2031 Project Case (EES, Part, Appendix E, Table 170)

In relation to public transport trips (Table 4), as a result of the West Gate Tunnel project being completed the daily and peak period trips and boardings in the Western LGAs on public transport decreases. It is not clear why this would occur, but it suggests that on a daily basis there are a number of users who may change modes to travel by car in peak and off-peak periods.
An alternative way of looking at the network wide impacts is to consider trips to/from surrounding councils. The TIA provides a summary of trips by municipalities, as shown in Table 5. Relative to the 2031 no project case, the project case is not estimated to change peak or off-peak trips, kilometres travelled, travel hours and average speed within HBCC. Given the West Gate Tunnel project traverses through HBCC and is planning to improve two key interchanges, Millers Road and Melbourne Road, in our opinion this is not accurate. This finding implies that the proposed improvements at interchange have no positive effects on improving travel hours or speeds within HBCC. On the other hand, the project is proposing to divert trucks to Millers Road north of the Freeway due to proposed truck bans on Francis Street, Sommerville Road, Moore Street and Buckley Street.

### Table 4: Network Wide Public Transport Trips, 2031 Project Case (EES, Part A, Appendix E, Table 180)

<table>
<thead>
<tr>
<th></th>
<th>Western LGAs</th>
<th>Rest of Melbourne</th>
<th>Melbourne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday Trips</td>
<td>319,000 (-0.3%)</td>
<td>2,375,000 (-0.1%)</td>
<td>2,695,000 (-0.1%)</td>
</tr>
<tr>
<td>Weekday Boardings</td>
<td>428,000 (-0.2%)</td>
<td>3,089,000 (-0.1%)</td>
<td>3,518,000 (-0.1%)</td>
</tr>
<tr>
<td>AM peak (7 am - 9 am) Trips</td>
<td>125,000 (-0.8%)</td>
<td>514,000 (0.0%)</td>
<td>639,000 (-0.2%)</td>
</tr>
<tr>
<td>AM peak Boardings</td>
<td>154,000 (-0.6%)</td>
<td>652,000 (0.0%)</td>
<td>806,000 (-0.1%)</td>
</tr>
<tr>
<td>PM peak (4 pm - 6 pm) Trips</td>
<td>32,000 (0.0%)</td>
<td>550,000 (0.0%)</td>
<td>582,000 (0.0%)</td>
</tr>
<tr>
<td>PM peak Boardings</td>
<td>54,000 (-1.8%)</td>
<td>733,000 (0.0%)</td>
<td>787,000 (0.0%)</td>
</tr>
</tbody>
</table>

Note: outward and return trips originating from the given sector
Numbers in bracket represent the percentage change compared to the 2031 no project case

### Table 5: Trips by Municipalities, 2031 Project Case (Source: EES, Part A, Appendix E, Table 1171)

<table>
<thead>
<tr>
<th></th>
<th>Brimbank</th>
<th>Hobsons Bay</th>
<th>Maribyrnong</th>
<th>Melbourne</th>
<th>Melton</th>
<th>Moonee Valley</th>
<th>Wyndham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday Trips</td>
<td>461,000 (0%)</td>
<td>188,000 (0%)</td>
<td>223,000 (0%)</td>
<td>416,000 (0%)</td>
<td>397,000 (0%)</td>
<td>283,000 (0%)</td>
<td>624,000 (0%)</td>
</tr>
<tr>
<td>VKT (1.000 km)</td>
<td>4,000 (0%)</td>
<td>1,300 (0%)</td>
<td>1,400 (0%)</td>
<td>2,900 (0%)</td>
<td>4,400 (0%)</td>
<td>1,300 (0%)</td>
<td>5,500 (0%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>93,000 (-1%)</td>
<td>31,000 (0%)</td>
<td>42,000 (-1%)</td>
<td>106,000 (0%)</td>
<td>92,000 (0%)</td>
<td>53,000 (0%)</td>
<td>128,000 (1%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>42 (0%)</td>
<td>43 (0%)</td>
<td>35 (0%)</td>
<td>27 (0%)</td>
<td>48 (0%)</td>
<td>34 (0%)</td>
<td>43 (0%)</td>
</tr>
<tr>
<td>AM peak (7 am - 9 am) Trips</td>
<td>67,000 (1%)</td>
<td>30,000 (0%)</td>
<td>34,000 (3%)</td>
<td>47,000 (0%)</td>
<td>73,000 (0%)</td>
<td>41,000 (1%)</td>
<td>107,000 (1%)</td>
</tr>
<tr>
<td>WKVT (1.000 km)</td>
<td>700 (0%)</td>
<td>200 (0%)</td>
<td>300 (0%)</td>
<td>500 (0%)</td>
<td>800 (0%)</td>
<td>300 (0%)</td>
<td>900 (0%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>21,000 (0%)</td>
<td>7,000 (0%)</td>
<td>9,000 (0%)</td>
<td>22,000 (0%)</td>
<td>20,000 (5%)</td>
<td>10,000 (0%)</td>
<td>26,000 (4%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>33 (0%)</td>
<td>35 (0%)</td>
<td>30 (0%)</td>
<td>31 (0%)</td>
<td>40 (0%)</td>
<td>39 (0%)</td>
<td>34 (-3%)</td>
</tr>
<tr>
<td>PM peak (4 pm - 6 pm) Trips</td>
<td>86,000 (-1%)</td>
<td>32,000 (0%)</td>
<td>39,000 (0%)</td>
<td>83,000 (1%)</td>
<td>61,000 (-2%)</td>
<td>44,000 (0%)</td>
<td>103,000 (-1%)</td>
</tr>
<tr>
<td>WKVT (1.000 km)</td>
<td>700 (0%)</td>
<td>200 (0%)</td>
<td>300 (0%)</td>
<td>500 (0%)</td>
<td>900 (0%)</td>
<td>300 (0%)</td>
<td>1,000 (0%)</td>
</tr>
<tr>
<td>VHT (hours)</td>
<td>21,000 (0%)</td>
<td>7,000 (0%)</td>
<td>8,000 (11%)</td>
<td>20,000 (0%)</td>
<td>21,000 (0%)</td>
<td>10,000 (-9%)</td>
<td>20,000 (0%)</td>
</tr>
<tr>
<td>Ave Speed (km/h)</td>
<td>34 (0%)</td>
<td>30 (0%)</td>
<td>31 (0%)</td>
<td>33 (0%)</td>
<td>41 (0%)</td>
<td>30 (0%)</td>
<td>35 (0%)</td>
</tr>
</tbody>
</table>
5.4 Discussion of Issues

The following key issues have arisen by assessing network wide traffic conditions:

- Having described different modelling processes to adjust the VLC Zenith model volumes one needs to question credibility of not only results but also their application to estimate risks and impact.

- While the defined adjustment process to convert partially constrained volumes to fully constrained volumes captures the periods 6-10 AM and 3-7 PM, the micro-simulation modelling and subsequent assessment only focused on 7-9 AM and 4-6 PM. Consistency is lacking.

- The Modelling Summary Report has an insufficient level of details to accurately identify impacts and mitigations. For example, intersection turn movement volumes are not provided. Modelling files were not made available to comment on traffic operational performance on individual turn movement, local intersections and how various components interact with each other as a system.

- The 2031 no project case reported significant increase in the public transport usage; however, the supporting arguments to make this increase valid were not provided. Are these increases real based on the assumed public transport improvements?

- The 2031 project case reported that close to one percent public transport trips would shift to private cars.

- Relative to the no project case, the project case would not change total trips, kilometres travelled, or travelled hours within HBCC. On the other side, due to new truck bans north of the West Gate Freeway significant trucks are projected to divert to Millers Road, located in HBCC. Again, inconsistencies in findings question credibility of the TIA.
6. **HOBSONS BAY CITY COUNCIL IMPACTS**

6.1 **Data Availability**

There is limited availability of predicted traffic volumes on the HBCC network within the EES, with very limited data available enabling comparisons between no project and project cases. Thus, a detailed analysis of the localised impacts on the HBCC network is deemed incomplete until such data is made available.

6.2 **Information Not Provided**

None of the turning movement volumes were provided during the EES commenting period. Modelling files were also not made available for review. The following information is critical to a comprehensive analysis of the impacts of the project:

- VLC Zenith Model plots that show assumed link capacities, volumes and V/C during the peak periods;
- Intersection turning movement counts and forecast volumes under 2031 no project and project cases;
- How traffic volumes were adjusted before feeding into the assessment files;
- A complete package of micro-simulation modelling files and documents describing model development and calibration approach, processes and results.

This documentation and data are required to properly complete the assessment of impacts and mitigations.

6.3 **Strategic Issues**

This section addresses issues raised by HBCC that I also consider need to be addressed. They are provided together with my comments.

6.3.1 **Traffic, Truck Tolls and Bans**

*HBCC comment #1—*

The WGT Project will impact the existing traffic and truck movements across a much larger area of Hobsons Bay than that modelled, and a broader assessment of traffic impacts should be undertaken by the WDA and VicRoads in consultation with Council. For example, Millers Road, Kororoit Creek Road, Blackshaws Road, Mason Street, Melbourne Road, Hudsons Road and North Road are all likely to experience higher traffic volumes resulting from toll avoidance and trucks avoiding the 24 hour truck bans proposed on existing truck routes north of the Freeway.

Hobsons Bay City Council has advocated to Transurban and the Victorian State Government for a multi-agency coordinated approach to the future planning for the traffic and transport network to ensure a functional and balanced network for both the local and regional community.
A comprehensive Traffic Study should be undertaken by the WDA that considers the full impacts of the WGT Project on Hobsons Bay and identifies adequate mitigation measures to be implemented by the Project.

My comment #1–

The project corridor and its study limits fail to recognise the fact that increased traffic throughput in WBD could create problems further downstream. A lane drop at Kororoit Creek Road and adjacent heavy volume on-ramp could become a new bottleneck location. The queues resulting from this bottleneck would extend into the project corridor and affect its overall performance.

In my opinion, a comprehensive study should be undertaken by the WDA which captures external factors that could potentially affect performance of the project corridor. The study area in this comprehensive study should be extended further west, north and south to address formation of new bottleneck locations and their impacts and to include the local road network.

HBCC comment #2–

The project would induce additional 37,000 vehicles per day, including 7,000 trucks into the project corridor.

My comment #2–

Given the Hobsons Bay City Council is situated on the project corridor, many of these additional trips would involve HBCC residents.

Strategically, the project adds more capacity to the freeway; however, the question remains as to how the additional capacity would be utilised given the congested arterials and local streets would hold up demand from entering the freeway.

While it was shown that the projected new demand would be accommodated on the project corridor, a bigger question that lingers is how the local road network would accommodate this increase. As a result, the project creates a high level of uncertainty and risk in regard to accommodating more traffic in the larger road network, including Hobsons Bay.

HBCC comment #3 –

That the proposed direct tolls on trucks between Grieve Parade and Melbourne Road be removed, or at the very least the tolling point between Grieve Parade and Millers Road be removed.

My comment #3–

The proposed direct tolls on trucks between Grieve Parade and Melbourne Road in the outside carriageways will act counter to the stated aim of shifting trucks from the local roads onto the WGF/tunnels. It is unclear if trucks using the mainline between Grieve Parade and Melbourne Road will also be tolled.

Any tolling of trucks between Grieve Parade and Melbourne Road will create a new demand for trucks to use the local road system. Two alternatives appear viable to encourage trucks onto either WGF or the tunnels: to toll the tunnels and WGB equally for trucks and not toll west of Melbourne Road, or to at least not toll west of...
Melbourne Road with no truck toll on WGB. If there are any tolls west of Melbourne Road, then far tighter truck bans on parallel routes will be needed.

A more radical option would be for the Victorian Government to compensate the loss of toll revenue by the project (if having no tolls west of Melbourne Road) via a “shadow toll/availability charge”, as implemented on the Peninsula Link. This would mitigate the risk of toll avoidance and traffic displacement, as well as easing the significant pressure on Victoria’s justice system created by toll infringement cases. If the West Gate Tunnel is direct tolled, residents of Melbourne’s west will incur high infringement warrant debts and there will be significant traffic displacement due to toll avoidance.

The toll operation and avoidance should be actively monitored and tolls adjusted (i.e. dynamic tolling) as necessary to optimise the project objectives. This should include careful location of the tolling points, toll capping for trucks along the West Gate Freeway section, time of day variable tolls to incentivise traffic off roads in residential areas and tolls on the Hyde Street ramps set to restrict the ramps being used by general traffic to avoid the tunnel tolls.

It is my strong recommendation that the proposed direct tolls on trucks between Grieve Parade and Melbourne Road be removed.

### 6.3.2 Public Transport / TDM Issues

**HBCC comment #4**

The Project provides little in helping reduce traffic congestion through travel demand management and improve on road public transport priority measures during construction and operation.

**My comment #4**

The project is merely a short-term fix, as the extra capacity for single occupant cars trigger not only concentrated peaks, increased trips and longer trip lengths (evident through network wide impacts section) but also shift from public transport to car mode.

The project should identify travel needs and combine capacity improvements with more sustainable solutions that include travel demand management, active traffic management, multimodal transport, integrated land use planning. More cost-effective options should be explored and exhausted prior to embarking on the major infrastructure projects such as this. The traffic management strategies including but not limited to the following should be considered as part of the project:

- High occupancy lanes
- Dedicated bus/transit lanes and/or queue-jump lanes
- High occupancy toll lanes (i.e. toll express lanes)
- Increase in frequency of public transport services
- Augmentation of fleet size
- Park-n-ride, kiss-n-ride
• Shuttle services between popular OD pairs
• Promote casual ridesharing

### 6.3.3 Pedestrian and Cycling Issues

**HBCC comment #5–**

Details on pedestrian and cycling connections and standards are not well defined.

**My comment #5–**

The new and upgraded walking and cycling facilities should be provided on maps and design plans to better illustrate their connections with the existing infrastructure. There are existing problems with accessibility through the interchanges for pedestrians and cyclists that need to be addressed in design. Further details are needed on pedestrian and cyclist path connections, safety and dedicated infrastructure onto the Federation Trail from key local roads, overpasses, and through interchanges.

### 6.4 Local Issues

#### 6.4.1 Traffic, Truck Tolls and Bans

**HBCC comment #6–**

Truck bans should be introduced on all of Blackshaws Road, Hudsons Road, North Road, High Street, Mason Street, Kororoit Creek Road east of Millers Road and Millers Road between Kororoit Creek Road and Geelong Road. Noting that local businesses with an origin/destination point within these areas would be exempt from the truck bans.

**My comment #6–**

The WGT Project will greatly affect communities in the Hobsons Bay.

While the TIA indicated that Millers Road, Melbourne Road, Hudsons Road, Simcock Avenue and Douglas Parade would experience higher traffic volumes, what it fails to extract is increased volumes on Mason Street, Blackshaws Road, North Road and Kororoit Creek Road, resulting from toll avoidance and trucks avoiding the 24 hour truck bans proposed on existing truck routes north of the Freeway. The possible toll avoidance routes include:

- Kororoit Creek Road-Millers Road
- Blackshaws Road-Melbourne Road
- Millers Road-Mason Street-Melbourne Road
- Hudsons Road-Melbourne Road
- North Road-Melbourne Road

In my opinion, new truck bans need to be explored on Blackshaws Road, Hudsons Road, North Road, Mason Street, Kororoit Creek Road east of Millers Road and Millers Road between Kororoit Creek Road and Geelong Road. I am instructed that
the WDA have assumed that traffic management measures (i.e. truck bans) have been incorporated into the traffic modelling for the project for Blackshaws Road and Hudsons Road.

As discussed above, another option to minimise toll avoidance impacts within the HBCC is to remove toll points west of Williamstown-Melbourne Road.

**HBCC comment #7**

Millers Road capacity issues would worsen due to truck diversions. That Grieve Parade should be upgraded as the preferred truck route (via Princes Highway) to access the WGF to facilitate the displaced trucks from Yarraville and Footscray due to the truck bans.

**My comment #7**

The introduction of truck bans in Footscray and Yarraville will divert thousands of trucks into Millers Road via two key north-south routes – Paramount Road/Tottenham Parade/Geelong Road and Market Road/ McDonald Road. The TIA reports that Millers Road would experience an increase of 7,000 more trucks per day, more daily and peak hour increases in the 2031 project case relative to the 2031 no project case are summarised below:

**North of Freeway:**
- Daily: +2,250 NBD, +2,500 SBD totals; +3,500 NBD, +3,500 SBD trucks
- AM (7-9): +450 NBD, +300 SBD totals; +500 NBD, +450 SBD trucks
- PM (4-6): +450 NBD, +100 SBD totals; +500 NBD, +400 SBD trucks

**South of Freeway:**
- Daily: +400 NBD, +200 SBD totals; +400 NBD, +400 SBD trucks
- AM (7-9): +750 NBD, +400 SBD totals; +100 NBD, +150 SBD trucks
- PM (4-6): +500 NBD, +750 SBD totals; +50 NBD, +50 SBD trucks

Similarly, on-ramp and off-ramp volumes at Millers Road interchange are projected to increase significantly as noted below:
- AM (7-9): EBD entry +900, WBD entry +150, WBD exit +750;
- PM (4-6): EBD entry +600, EBD exit +450, WBD entry +100, WB exit +1,050

Based on the assessment above, major increases in traffic volumes, predominantly trucks, are projected in the N-E connection between Millers Road and the West Gate Freeway. Given that the existing interchange is, based on my occasional use, congested for much of the day (and on Saturdays) both the interchange and the intersections to the south will need upgrading.

Although lane configuration is not marked well, the preferred designs appear to include the following changes to the interchange:

**Westbound ramp intersection:**
• 1 additional northbound through lane with short storage (of the four lanes, left two lanes continue on Millers Road and right two lanes turn lead to EBD West Gate Freeway);

• 1 additional left-turn lane at the westbound off-ramp approach; and

• 1 addition southbound through lane (merging just south of Beevers Street)

• Widening into the retail properties south of the interchange

Eastbound ramp intersection:

• 1 addition right-turn lane for N-E movement

• 1 additional southbound through lane with short storage

Overall, existing lanes and alignments would be retained south of Clematis Avenue and north of Cypress Avenue. As such, in the northbound on Millers Road, two lanes flare out to four lanes at the westbound ramp interchange. Similarly, in the southbound direction on Millers Road two lanes flare out to add two more lanes at the eastbound ramp interchange.

In my opinion, the Millers Road interchange has no ability to accommodate the volume increases, even after the above-mentioned geometric changes are made. This is primarily because most of the increases would occur in the form of truck traffic to the two turning movements: southbound Millers Road left-turn onto West Gate Freeway to the east, and westbound right-turn from the east on West Gate Freeway to Millers Road north. No improvements are proposed to accommodate a significant increase in truck volumes for these two movements. As a result, more green time is likely to be re-allocated to these movements which would punish other movements, and ultimately form long queues on Millers Road and impact local intersections and cross street connections.

The TIA reports that the interchange would operate with level of service D during the peak hours. Noting again that the existing lane configuration on Millers Road is unchanged south of Clematis Avenue and north Cypress Avenue, and therefore the bulk of the traffic demand would be held up beyond the interchange in queues. The TIA report provides insufficient details of traffic modelling and its results.

It should be also noted that the eastbound off-ramp approach at Millers Road is reported to operate at level of service ‘F’ in the PM peak hour. There is a risk of the vehicle queues extending back and impeding West Gate Freeway. The TIA report does not provide queuing assessment to address or negate this issue.

Significant increases in traffic volumes on the Millers Road entry ramps may require more lanes at the metering stop lines. The TIA fails to recognise and assess how additional traffic volumes at the interchanges would be contained within the ramp storage. Any queue backups on to the arterial road network and local streets would put local accesses and circulation at risk.

Increased truck traffic and resultant queues on Millers Road could impact right-turn outbound movement from local streets. One of the examples is access for local residents in the northwest quadrant of the Millers Road interchange could be impacted.
Currently, southbound vehicular queues on Millers Road just north of the interchange delay the traffic exiting from Primula Avenue. Accessibility to local roads on Millers Road would be even more constrained with the project due to the addition of hundreds of new trucks. The TIA should carefully assess impact to local access and identify suitable mitigation measures. In the case of Primula Avenue, signalisation using the same controller as the interchange can be considered as a mitigation measure.

Alternatively, the project and preferred designs should look at upgrading Grieve Parade as the preferred truck route to access the WGF and M80 Western Ring Road.

### 6.4.2 Public Transport / TDM

**HBCC comment #8—**

The Project provides little in helping reduce traffic congestion through travel demand management and improve on road public transport priority measures during construction and operation. Recommendations include:

- Provide dedicated bus lanes and priority measures to assist bus operations and services. Public transport should be prioritised/augmented during construction to assist managing traffic capacity/performance along the Project corridor.
- Transit lanes should be provided to encourage multi-occupant passenger vehicles on the Freeway.

**My comment #8—**

I agree with HBCC’s recommendations.

As discussed previously, there are some TDM and public transport priority measures that need to be investigated and implemented.

### 6.4.3 Pedestrian and Cycling Issues

**HBCC comment #9—**

Details on pedestrian and cycling connections and standards are not well defined. Recommendations include:

- Provide further details on pedestrian and cyclist path connections, safety and dedicated infrastructure onto the Federation Trail from key local roads, overpasses, and through interchanges.
- Grade separation of Federation Trail at Hyde Street with a seamless connection to the Coastal Bay Trail, including an upgrade of the shared use path between the end of Federation Trail and the West Gate bike punt.
- The proposed upgrade of Federation Trail west of Millers Road to be a full reconstruction in concrete, including public lighting should be included along the upgraded and new alignment of the Trail.
Provision of a shared path through the land along the edge of the Freeway and connecting the State Government land to the west of Beevers Street (that could also be used for emergency vehicle access).

Consider in the design of the two pedestrian overpass upgrades current access to the ramps and that connections are provided to a high standard in consultation with HBCC.

All proposed new and upgraded active transport linkages should be delivered as early as possible to encourage travel behaviour change and ongoing local connectivity.

My comment #9–
A significant issue is the difficulty for cyclists and pedestrians in Millers Road crossing just north of the interchange.

The safety and congestion problems at this pedestrian operated signal would be worsened as the traffic volume increases and queues are experienced southbound approaching the interchange. My earlier recommendations regarding the Millers Road interchange should be considered.

I agree with HBCC’s recommendations noted above.

Where there are references to shared paths, if they have a high proportion of commuters then consideration should be given to developing segregated paths to minimise conflicts between cyclists and pedestrians. This is a growing issue being pursued particularly by pedestrian advocates.

6.4.4 Brooklyn

HBCC comment #10–

Possible issues include:

- Local access and connectivity
- Amenity, noise and air pollution impacts from threefold increase in truck traffic
- Heavy freight traffic conflicts with other transport modes and sensitive land use.
- Congestion at key intersections
- Pedestrian/Cycling connections
- Millers Road / WGF interchange ramp capacity

Recommendations include:

- Separation of residential and freight traffic particularly at Millers Road between the West Gate Freeway and Geelong Road. Reconfigure the road cross section of Millers Road between the West Gate Freeway and Geelong Road including consideration of the existing entry/exports for the Brooklyn community and rationalisation of traffic lights. Consider treatments within and intersections at Primula and Cypress Avenues.
• Review and upgrade the Grieve Parade/Geelong Road, Geelong/Millers Road and Francis Street and the Geelong Road/McDonald Road intersections.

• Millers Road exit ramps are proposed to be shortened (westbound by 110m). Given that this ramp currently has queues back to the Freeway during AM peaks and the increased demand that will result from the new truck bans/tolls, questions are raised as to its capacity, performance and safety. Further detail and analysis is required on the entry and exit ramp performance and capacity.

• Further detail required on the proposed realignment of Buchanan Road at Lynch Road.

My comment #10 –

Due to increased truck volumes in the Brooklyn area, local access and connectivity among interacting land uses would be severely penalised. The residents and businesses along Millers Road north of the freeway would experience persistent noise, increased delays, degraded air quality, each negatively affecting overall quality of life. Increased truck traffic would significantly conflict with the general traffic on Millers Road and walking and cycling activities at the Federation Trail crossing. The TIA fails to address impacts in the Brooklyn area. Increased truck traffic and resultant queues, as mentioned earlier would significantly impact right-turn exiting movement from the local streets and accesses onto Millers Road.

If an additional 7000 trucks per day are to use Millers Road north of the WGF, then the project should consider separating truck and residential traffic on Millers Road between the freeway and Geelong Road. In any case, some ameliorative actions are needed. This could be done by reconfiguring the cross section. The cross section could consider a northbound service road, and/or adding a greater setback between Millers Road and residences and businesses by provision of a parking lane. Access to the residential neighbourhood west of Millers Road could be improved by signalisation at key congested intersections, like Primula Avenue and Cypress Avenue.

The appropriate investigations relating to the impacts in the Brooklyn area are needed, and the TIA updated to include those investigations, outcomes, and recommended actions. The TIA does not assess how additional truck traffic would be accommodated at key intersections along Geelong Road. Upgrades are likely to be required at the Grieve Parade, Little Boundary Road, Millers Road, McDonald Road and Francis Street intersections however as insufficient detail has been provided in the TIA, the extent of the upgrades cannot be determined.

The preferred design provides insufficient details to be able to verify that the westbound ramps to be shortened by 110m.

6.4.5 Altona North

HBCC comment #11–

Possible issues include:

• Cumulative traffic impacts of Precinct 15 and 16.
- Traffic rat running and congestion between Kyle Road and Millers Road
- Altona North Industrial precinct – poor connection to M80
- Blackshaws Road / Millers Road intersection congestion

Recommendations include:

- Include provision for additional ramps at Grieve Parade and/or at Dohertys Road to improve north south connectivity to the M80 from the Altona North industrial precinct
- Reconfigure Blackshaws Road / Millers Road and to achieve additional capacity at intersection
- Reconfigure the road cross section of Millers Road between Blackshaws Road and the West Gate Freeway to increase capacity, maintain access to existing services/shops and address pedestrian and cyclist safety. Consider treatments within and intersections at Marigold/Cyclamen/Clematis and Bevers Streets
- That the project contribute to a LATM Plan to review and assess the cumulative impacts on local streets east and west of Precinct 15 including all intersections.
- Provision of a shared path through the disused land along the edge of the Freeway and connecting the State Government land to the west of Bevers Street (that could also be used for emergency vehicle access).

*My comment #11*

The TIA report shows that the project would pour an additional 2,350 AM peak period trips and 2,500 PM peak period trips into Altona North via Millers Road and Grieve Parade. These are considered significant increases, and the TIA fails to assess and document any possible risks and impacts on local road network, or how such increases need to be ameliorated. Moreover, the TIA does not track these trips further south into the Altona North catchment. It is important to understand how these increases would be dispersed south of the WGF into Hobsons Bay. Note that Millers Road provides on-road cycle lane south of Beuron Road and any substantial increase in traffic volumes would degrade bicycle safety.

Another issue in the Altona North area that could be aggravated due to the project is poor connection to the M80 Western Ring Road. In Hobsons Bay south of the WGF, Melbourne Road and Millers Road are the key north-south linkages with Blackshaws Road providing an important east-west link. Due to increased traffic, these important linkages could suffer from congestion, triggering rat running on the local streets. Some key intersections such as Blackshaws Road/Millers Road would experience more congestion as more traffic is drawn onto the approaching roads.

In my opinion, a full interchange at Grieve Parade is needed with the west-facing ramps linking directly to the M80 Western Ring Road. This new connection would divert traffic from Millers Road onto Grieve Parade via Blackshaw Road, potentially relieving Millers Road in Altona North. Another important connection that should be considered is between Dohertys Road and Princes Freeway west. Dohertys Road ramp connections to the west would divert truck traffic away from Millers Road, again relieving Millers Road. It would provide much needed access from the west into the Grieve Parade industrial area south of Dohertys Road. Sketch examples of
such interchanges are shown in **Figure 5** (Dohertys Road) and **Figure 6** (Grieve Parade).

Both recommendations above would enhance access to existing services/shops on Millers Road and increase pedestrian and cyclist safety. The on-road cycle lanes can then be extended past the interchange further north and connect the Federation Trail. Note that both recommendations need further investigations to confirm their feasibility.

**Figure 5**: Potential west facing ramps at Dohertys Road to/from M1
6.4.6 **South Kingsville**

*HBCC comment #12-*

Possible issues include:

- Blackshaws Road / Millers Road intersection congestion
- New Street construction traffic and access
- Local area rat running
- Ped/cycling connections

Recommendations include:

- Reconfigure Blackshaws Road / Shute Street / Melbourne Road intersection to achieve additional capacity
- That the project contribute to a Local Area Traffic Management Plan for the area east of
- Traffic for the ventilation stack and proposed construction compound use the existing maintenance track connecting New Street along the southern side of the freight rail line to Hardie Road.
- New Street including The Avenue and other intersections with Melbourne Road.
- Consider pedestrian/cycling links to Spotswood and Newport Rail stations.
- That construction Improve the link between the proposed open space at Precinct 15 and Edwards Reserve through the establishment of a shared path along the railway reserve
My comment #12

Although Blackshaws Road in the South Kingsville area is a secondary arterial road, the reduced capacity due to its poor linkage with Melbourne Road limits its usage. As a result, local area rat running is experienced. Reconfiguring the Blackshaws Road/Shute Street intersection with Melbourne Road would reinstate much needed capacity on Blackshaws Road which would minimise rat running. While the proposed project could divert the traffic away from Blackshaws Road, it could be leveraged as a toll avoidance route parallel to the WGT. Therefore, the project should contribute to a Local Area Traffic Management (LATP) for the area west of Melbourne Road.

It is also noted that the construction compound is proposed to use the existing maintenance track connecting New Street. The trucks should be prohibited at night time to avoid any possible disturbance to the residents in South Kingsville.

Cycling and walking opportunities such as links to Spotswood and Newport Rail Stations, and the link between open space at Precinct 15 and Edwards Reserve through the establishment of a shared path along the railway reserve should be explored as part of the EES.

6.4.7 Spotswood

HBCC comment #13

Possible issues include:

- Melbourne road congestion
- Truck traffic from industrial area
- Ped/cycling connections
- New Hyde Street ramp impacts
- Local rat running traffic
- Construction traffic in Hall Street
- Hyde Street congestion and intersection safety

Recommendations include:

- That design changes be implemented to address the undesirable issue of Freeway access from the local street network, e.g. intersection treatments, parking and local access consideration
- Truck bans introduced in Spotswood to protect the local area from traffic short cutting through the area.
- The use of Hall Street as a construction traffic route, is not supported due to the environmental, amenity and visual impacts on the Emma McLean Kindergarten and an alternative access is required to be identified.
• Exempt trucks travelling to and from the Spotswood Industrial Precinct from the proposed Francis Street truck ban, so that they can continue to access the Freeway ramps at Melbourne/Williamstown Road and not use Hudsons Road.

• Further analysis required in regard to the traffic impact on Douglas Parade and Hyde Street. The ramps and associated signalisation will create localised congestion with the combined ramps carrying up to 5000 vehicles a day in 2031 including nearly 2000 trucks. Traffic in Hyde Street (between Francis Street and the Freeway) is expected to increase from 15,000 to 22,000 vehicles per day in 2031, including an extra 1850 trucks per day (from 1450 to 3300).

• Further detail required on likely frequency and impacts of tunnel closures during operation and incidents and the stated use of the Hyde Street ramps to detour traffic.

My comment #13–

The ramps to Hyde Street and Simcock Avenue would provide a new route for fuel tankers and trucks to reach destinations in Yarraville and Spotswood, however they would not provide a solution for tankers travelling to the from the eastern and southwestern suburbs. Note that the Simcock Avenue is a local street and the new ramp would significantly increase truck traffic on Simcock Avenue. The TIA fails to address undesirable issues related to parking, local access and safety on Simcock Avenue and its intersection with Douglas Parade/Hyde Street.

While the intersection of Simcock Avenue/Hyde Street/Douglas Parade would be upgraded, the TIA and preferred design lacks details as to what are the key issues and which of them would be resolved. Further analysis is required in regard to the traffic impact on Douglas Parade and Hyde Street.

Fuel tankers to/from the east and southeast of Melbourne would be required to travel north to access Footscray Road and then come down south on the Bolte Bridge. This circulatory truck route could prompt short cut through traffic to the WGF from Melbourne Road via Hudsons Road, North Road or Hall Street. The use of Hall Street as a truck or construction traffic route, is not supported due to the environmental, amenity and visual impacts on the Emma McLean Kindergarten and an alternative access is required to be identified. Truck bans could be introduced in Spotswood to protect the local area from traffic short cutting through the area. Alternate mitigation could be exempting trucks travelling to and from the Spotswood Industrial Precinct from the proposed Francis Street truck ban, so that they can continue to access the WGF ramps at Melbourne/Williamstown Road and not use Hudsons Road, or any other local streets.

In events of temporary closure of the West Gate Tunnels, large proportion of the trucks to and from the port would be diverted to the new Hyde Street ramps. The TIA should provide more details on likely frequency and impacts of tunnel closures during maintenance and incidents and the stated use of the Hyde Street ramps to detour traffic.

6.5 Construction Issues

HBCC comment #14–
Provide further details of traffic impacts arising from the construction compounds and haul routes including microsimulation models showing peak congestion conditions during construction and also the analysis to assess traffic performance during construction.

**My comment #14**

The TIA reports that the construction activities would be carried out to minimise impacts to the local community; however, there are no supporting assessments to formally identify impacts. The construction activities would last 5 years, which means any impacts will have a significant duration.

The construction methodology is based on qualitative assessment, and is not detailed using quantitative measures in the EES. The bulk of construction work would be from the M80 Ring Road to Williamstown Road. Key haul routes to the proposed compounds are Blackshaws Road, Millers Road, Grieve Parade, Hudsons Road and Douglas Parade – all located within the HBCC, as shown in Figure 7. Given the construction would last up to 5 years, there will be significant impacts to the local intersections and road network. Thus, an operational assessment should be conducted to identify temporary mitigation measures to offset increases in car and truck traffic.

One of the construction compounds for material lay down and worker parking would use the existing maintenance track connecting to New Street. The primary route to this proposed compound, namely Southern Tunnel Portal compound would be from Grieve Parade and Blackshaws Road. According to the TIA (Table 155), approximately 140 daily inbound cars but unknown trucks would access the Southern Tunnel Portal compound. New Street is a local street and has residential dwellings on the eastern side. Additional truck and general traffic would not only compromise residential characteristic of New Street but also increase noise levels. In my opinion, the EES should look at a different access to the compound in the vicinity of the Southern Tunnel Portal.
Given access to the work site would predominantly be provided from the West Gate Freeway, speeds would be reduced to 80 km/h and lanes would be narrowed. Although the total number of lanes would be preserved on the West Gate Freeway, the capacity and throughput would be reduced substantially. In addition, the heavy construction traffic would also conflict with the general and freight traffic on the West Gate Freeway, possibly pushing some of the latter onto the local road network. While the TIA reports that the traffic performance would be monitored to assess impacts on traffic flows the West Gate Freeway, it should also be monitored on the local road network.

A framework should be developed with performance criteria which must be met during the construction. The criteria may include, but not limited to, targeting desired throughputs, travel time, speeds and travel time reliability relative to the pre-construction period. Separate criteria could be established for trucks, cars and public transport. For example, if the general traffic is known to operate at, say, 55 km/h on a particular road and performance criteria set by the agreed upon framework allows maximum degradation of 10 percent in travel speeds due to construction activities, measures must be taken to improve the travel speed once it has dropped below 50 km/h. The TIA lacks a detailed approach to monitoring traffic performance and how the information would be leveraged to implement mitigation measures.
7. POTENTIAL MITIGATION MEASURES

7.1 Strategic

While it was not captured properly by detailed assessment, the West Gate Tunnel project would result in significant adverse impacts to the local area transport network as described more fully in the Section 6.4. The strategic measures to identify the risks and impacts associated with the project and then fully mitigate them are summarised below:

- The project definition, its purpose, and its objectives should be refined. A wide range of options, such as travel demand management, active traffic management, etc. should be investigated at a high level, then the most sustainable and viable package of options should move forward. Such a package of improvements must prioritise moving people, not cars. The active travel demand management strategies, when combined with cost effective capacity improvements, can significantly improve mobility.

- It is recommended that the bus services be augmented and supporting infrastructure including but not limited to dedicated bus/transit lanes and priority measures should be considered. This would encourage multi-occupant passenger vehicles on the West Gate Freeway.

- A more comprehensive impact study should be undertaken by the Western Distributor Authority in consultation with VicRoads and affected local governments. This study must be scoped to cover wider geographic area. A methodology should be developed early on to gain consensus among stakeholders on not only study area but also reporting methods.

- If the project advances in its current form (i.e. three components), the proposed toll points between Grieve Parade and Melbourne Road should be removed to minimise truck diversions.

- The Victorian Government should explore financing the project via a “shadow toll/availability charge”, as implemented on the Peninsula Link.

- Dynamic tolling should be considered to achieve project objectives. Toll operation and avoidance should be actively monitored and managed using agreed upon measures and tools.

7.2 Local

Users of the project would be attracted from origins and destinations to the north and south via the arterial network within HBCC, and may be using it as an alternative to Geelong Road and possibly overcrowded public transport.

The mitigation measures currently proposed in the TIA are limited to within the project corridor. As discussed previously, there are significant adverse traffic impacts across a far larger area. Most of the mitigation measures proposed in this report aim to address the adverse traffic impacts within Hobsons Bay as a result of the West Gate Tunnel.
The truck bans should be introduced on Millers Road. Residential environment along Millers Road is way too sensitive for truck traffic. Millers Road should be preserved as local N-S connection for residents, businesses, pedestrians and cyclists. The following mitigation measures (mutually exclusive or some in combination) are recommended:

- Upgrades to the Grieve Parade interchange and new ramps to Dohertys Road: While the existing ramps to/from the east would retained, new ramps to/from the west are recommended be added at the Grieve Parade interchange. Preliminary concept of a full Grieve Parade interchange is shown in Figure 6. Grieve Parade would be designated as a preferred truck route via Princes Highway to access the WGF to facilitate displaced trucks from Yarraville and Footscray due to the truck bans. A full interchange would significantly take the burden off the Millers Road interchange, Geelong Road and Little Boundary Road. In addition, the linkage between Grieve Parade and M80 would facilitate better circulation between Altona North and M80. To supplement the Grieve Parade interchange upgrades, an extension of Grieve Parade north to Somerville Road at Market Road should be explored. That way, any potential adverse effects to the residents along Geelong Road due to increased truck traffic can be minimised. Second part of this mitigation measure would duplicate Dohertys Road over the Princes Freeway and add ramps to/from the west. Such concept plan is showed in Figure 5. New freeway access ramps to Dohertys Road on the west would complement the Grieve Parade ramps on the east and significantly improve overall circulation and divert the truck traffic away from sensitive local road network.

- Enhance landscaping, cross section and local access on Millers Road north of the freeway to minimise impacts to local residents and businesses. It is recommended that a new corridor study be carried out on Millers Road between Geelong Road and Blackshaws Road to specify future anticipated problems and conflicts between various models, to identify locations of ‘pinch points’ and delays, and to propose improvements to mitigate impacts of additional traffic using this route. Treatments may include provision of service roads, access management with signal controls, review of turning and parking/stopping restrictions, and additional cyclist facilities. The corridor study and the implementation of its recommendations should be funded by WDA to mitigate the impacts of increased traffic volumes along Millers Road.

- Improve signal timings and coordination along Geelong Road to further prioritise through movement. Truck traffic is expected to increase significantly along Geelong Road as a result of new truck bans. A corridor study should be undertaken, similarly to one for Millers Road to identify impacts and recommend improvements. Such study and implementation of its recommendations should be funded by WDA.

- New truck bans are recommended on Blackshaws Road, Hudsons Road, North Road and Kororoit Creek (east of Millers Road). Truck with an origin or destination within these areas would be exempted from the truck bans. Alternative measure is to minimise toll avoidance on these routes by relocating first toll point to the east past Williamstown Road-Melbourne Road.
It is recommended that detail assessment be conducted/provided at the following intersections within the HBCC and appropriate multimodal improvement designs should be included as part of the WGT project given significant increase in traffic volumes are projected.

- Millers Road intersections with Stenhouse Avenue, Nolan Avenue, Cypress Avenue, Primula Avenue, Marigold Avenue, Cyclamen Avenue Beuron Road, Blackshaws Road, McArthurs Road, Mason Street, Kororoit Creek Road,
- Geelong Road intersections with Little Boundary Road, Grieve Parade, Burgess Street, McDonald Road and Millers Road, Francis Street.
- Grieve Parade intersections with Blackshaws Road, Dohertys Road and Kororoit Creek Road.
- Melbourne Road intersections with the Avenue, Hudsons Road, Blackshaws Road, Mason Street and North Street.

The project should contribute to the LATM plans to review and assess the cumulative impacts (such as rat running) on local streets, including the following:

- Altona North
- South Kingsville
- Spotswood
- Brooklyn

It is recommended that the concept design be developed to address the traffic impacts on Douglas Parade, Hyde Street, and Simcock Avenue. A Road Safety Audit should be conducted to highlight safety issues and improvement options.

### 7.3 Construction

The following construction related measures are recommended:

- Specific information as to how, when and where traffic performance would be monitored and which measures would be undertaken under which circumstances should be provided in the TIA. It is recommended that a framework is developed by TMLG early on to clearly establish performance criteria during the construction period.

- Given the complex nature of construction for this project, it is recommended that detailed traffic assessment be carried out to identify construction related impacts at the local street network and to recommend specific short-term mitigations.

- The TIA should look at alternative compound in the vicinity of the Southern Tunnel Portal.
7.4 **Recommended Traffic Related EPRs**

The modifications to the EPRs are recommended by HBCC, as summarised in Table 6. I agree with the proposed changes to the EPRs.

| **TP3 Traffic management plan** | Second dot point to include Melbourne Road and Hyde Street/Douglas Parade.  
Ninth dot point – Construction Traffic routes on local roads e.g. New Street should not be used for construction purposes at night (between 10pm and 7am) |
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<tr>
<td><strong>TP7 Traffic Management Liaison Group</strong></td>
<td>The EPR should be amended to include local government representatives. Also this Group must be convened prior to the commencement of any works impacting on road, paths or public transport infrastructure.</td>
</tr>
<tr>
<td><strong>New EPR</strong></td>
<td>In advance of construction works, WDA to develop and implement a travel demand management strategy and appropriate tools in consultation with the relevant transport agencies to promote specific transport behaviour changes in response to road, bicycle and pedestrian paths closures/modifications and to reduce traffic congestion around construction sites, particularly in the vicinity of the Millers Road and Melbourne Road interchanges and at Hyde Street. The strategy must be consistent with the WGT Project Communications and Community Engagement Plan.</td>
</tr>
<tr>
<td><strong>New EPR</strong></td>
<td>That a Traffic Study be undertaken by Western Distributor Authority and VicRoads (in consultation with HBCC) that considers the full predicted impacts of the West Gate Tunnel Project on Hobsons Bay and identifies a range of adequate mitigation measures to be implemented by the Project.</td>
</tr>
<tr>
<td><strong>New EPR</strong></td>
<td>That a Local Area Traffic Management Plan be undertaken in Altona North (the area bounded by the Freeway, Kyle Road, Blackshaws Road and Millers Road) to adequately address the traffic impacts arising from the WGT Project.</td>
</tr>
<tr>
<td><strong>New EPR</strong></td>
<td>That a Local Area Traffic Management Plan be undertaken for the Altona North, South Kingsville, Spotswood and Brooklyn areas to adequately identify and address the traffic impacts arising from the WGT Project.</td>
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| **Table 6: Recommended Changes to Traffic Related EPRs** |
8. CONCLUSIONS & RECOMMENDATIONS

8.1 Conclusions

Based on my experience, the materials provided, site inspections, and a review and assessment of the available documentation, I reach the following conclusions in relation to the transport implications of the proposed project:

With respect to the project and alternatives:

- The Project needs to identify travel needs of various modes, and combine capacity improvements with more sustainable solutions, including but not limited to travel demand management, active traffic management, multimodal transport, integrated land use planning. Recommendations of such solutions are documented in the sections above.

- A major concern with the Project – the concentration of so much travel in the one corridor. The previously proposed Western Link part of the earlier East West Link used a separate corridor to the north of the WGF. The major risk now is that a serious incident could close all carriageways, or at least both carriageways in one direction – leading to chaos and economic damage. No justification seems to have been provided for the move away from the earlier proposed alignment.

- The project has no alternatives. It is important to assess various alternatives to achieve the same purpose and objectives, and select the most viable and sustainable.

With respect to the adequacy and scope of the TIA:

- The Project needs to extend the local area in the TIA to include intersections along Melbourne Road, Millers Road, Geelong Road, Grieve Parade, Kororoit Creek Road and Blackshaws Road.

- The Project needs to update the TIA to provide turning movement estimates at interchanges and local intersections and undertake a proper analysis of local impacts in terms of intersection degree of saturation (DOS), and estimates of queue lengths and delays for individual lanes and turning movements - fundamental considerations to be addressed in the TIA.

- The Project needs to detail strategic and spreadsheet modelling outputs and adjustments in the TIA.

With respect to strategic issues pertaining to HBCC:

- The proposed direct tolls on trucks between Grieve Parade and Melbourne Road in the outside carriageways will act counter to the stated aim of shifting trucks from the local roads onto the WGF/tunnels.

- Further details are needed on pedestrian and cyclist path connections, safety, and dedicated infrastructure serving connections to the Federation Trail from key local roads, overpasses and through interchanges.
- To minimise the likelihood of truck traffic diverting onto local roads, and to reduce impacts on Millers Road, a strategic link from Grieve Parade to Market Road should be provided.

**With respect to design issues pertaining to HBCC:**
- The project needs to extend the new fifth westbound lane to Forsyth Road interchange to overcome the major bottleneck problem at the lane drop westbound between the M80 Western Ring Road entrance.
- The project needs to examine and explain why there is a need for a 3-lane outbound tunnel that reduces to 2 lanes immediately after exiting the tunnel.

**With respect to construction pertaining to HBCC:**
- The bulk of construction work would be from the M80 Ring Road to Williamstown Road. Key haul routes to the proposed compounds are Blackshaws Road, Millers Road, Grieve Parade, Hudsons Road and Douglas Parade – all located within the HBCC. Given the construction is anticipated last up to 5 years, there will be significant impacts to the local intersections and road network in HBCC.
- The proposed construction compound on New Street could negatively affect residential environment.
- The construction methodology is based on qualitative assessment, and is not detailed using quantitative measures.

**With respect to local issues pertaining to HBCC:**
- The Millers Road interchange has no ability to accommodate the volume increases, even after the geometric changes are made. The existing lane configuration on Millers Road is unchanged south of Clematis Avenue and north Cypress Avenue, and therefore the bulk of the traffic demand would be held up beyond the interchange in queues.
- Significant increases in traffic volumes on the Millers Road entry ramps may require more lanes at the metering stoplines.
- Increased truck traffic and resultant queues on Millers Road could impact right-turn outbound movement from local streets.
- A significant issue is the difficulty for cyclists and pedestrians in Millers Road crossing just north of the interchange.
- The residents and businesses along Millers Road north of the freeway would experience persistent noise, increased delays, degraded air quality, each negatively affecting overall quality of life. Increased truck traffic would significantly conflict with the general traffic on Millers Road and walking and cycling activities at the Federation Trail crossing.
- The project would pour an additional 2,350 AM peak period trips and 2,500 PM peak period trips into Altona North via Millers Road and Grieve Parade. It is important to track these trips further south into the Altona North catchment and understand how these increases would be dispersed south of the WGF into Hobsons Bay. Bicycle safety on-road cycle lane on Millers Road south of Beurum Road would degrade bicycle safety.
- Potential toll avoidance route using Blackshaws Road would result in rat running on local E-W streets.
- The Hyde Street ramps may not offer any solution for tankers travelling to and from the eastern and southwestern suburbs. The circulatory truck route resulting from truck bans could prompt short cut through traffic to the WGF from Melbourne Road via Hudsons Road.

8.2 Recommendations

With respect to the project and alternatives:
- Incorporate sustainable solutions such as travel demand management, active traffic management, multimodal transport, integrated land use planning into the project.
- Provide justification for moving away from the earlier proposed alignment.

With respect to the adequacy and scope of the TIA:
- Extend the local area in the TIA to include intersections along Melbourne Road, Millers Road, Geelong Road, Grieve Parade, Kororoit Creek Road and Blackshaws Road.
- Update the TIA to provide turning movement estimates at interchanges and local intersections and undertake a proper analysis of local impacts in terms of intersection degree of saturation (DOS), and estimates of queue lengths and delays for individual lanes and turning movements.
- Provide detailed strategic and spreadsheet modelling outputs and adjustments in the TIA.

With respect to strategic issues pertaining to HBCC:
- It is my strong recommendation that the proposed direct tolls on trucks between Grieve Parade and Melbourne be removed.
- Provide further details for pedestrian and cyclist path connections, safety, and dedicated infrastructure serving connections to the Federation Trail from key local roads, overpasses and through interchanges.
- Develop a strategic link from Grieve Parade to Market Road as a long-term measure.
With respect to design issues pertaining to HBCC:

- Extend the new fifth westbound lane to Forsyth Road interchange.
- Examine and explain why there is a need for a 3-lane outbound tunnel that reduces to 2 lanes immediately after exiting the tunnel.

With respect to construction pertaining to HBCC:

- Provide further details of traffic impacts arising from the construction compounds and haul routes including microsimulation models showing peak congestion conditions during construction and also the analysis to assess traffic performance during construction.

With respect to local issues pertaining to HBCC:

- Alternate recommendation to removing direct tolls on trucks between Grieve Parade and Melbourne Road is to introduce full truck bans on Blackshaws Road, Hudsons Road, North Road, Millers Road and Kororoit Creek (east of Millers Road).
- Preserve Millers Road as key N-S corridor for residents, businesses, pedestrian and cyclists, and upgrade the Grieve Parade interchange by adding ramps to/from the M80 Western Ring Road and construct new ramps to Dohertys Road to Princes Freeway on the west.
- Assess ramp metering operations and determine upgrades, such as number of metering lanes at the on-ramps.
- Alternate to truck bans on Millers Road is to enhance landscaping, cross section and local access on Millers Road north of the freeway to minimise impacts to local residents and businesses. A corridor study is required on Millers Road between Geelong Road and Blackshaws Road to specify future anticipated problems and conflicts between various models, to identify locations of ‘pinch points’ and delays, and to propose improvements to mitigate impacts of additional traffic using this route.
- Provide dedicated bus lanes and priority measures to assist bus operations and services. Public transport should be prioritised/augmented during construction to assist managing traffic capacity/performance along the Project corridor.
- Transit lanes should be provided to encourage multi-occupant passenger vehicles on the Freeway.
- Provide further details on pedestrian and cyclist path connections, safety and dedicated infrastructure onto the Federation Trail from key local roads, overpasses, and through interchanges.
- Grade separation of Federation Trail at Hyde Street with a seamless connection to the Coastal Bay Trail, including an upgrade of the shared use path between the end of Federation Trail and the West Gate bike punt.
• The proposed upgrade of Federation Trail west of Millers Road to be a full reconstruction in concrete, including public lighting should be included along the upgraded and new alignment of the Trail.

• Provision of a shared path through the land along the edge of the Freeway and connecting the State Government land to the west of Beevers Street (that could also be used for emergency vehicle access).

• Consider in the design of the two pedestrian overpass upgrades current access to the ramps and ensure connections are provided to a high standard in consultation with HBCC.

• All proposed new and upgraded active transport linkages should be delivered as early as possible to encourage travel behaviour change and ongoing local connectivity.

• A corridor study should be undertaken on Geelong Road to identify upgrades to the Grieve Parade, Millers Road, Francis Street and McDonald Road intersections.

• The project should contribute to the LATM plans for Altona North, South Kingsville, Spotswood and Brooklyn areas.

• Provision of a shared path through the land along the edge of the Freeway and connecting the State Government land to the west of Beevers Street (that could also be used for emergency vehicle access).

• Reconfigure Blackshaws Road / Shute Street / Melbourne Road intersection to achieve additional capacity.

• Consider pedestrian/cycling links to Spotswood and Newport Rail stations.

• Improve the link between the proposed open space at Precinct 15 and Edwards Reserve through the establishment of a shared path along the railway reserve.

• Address the undesirable issue of Freeway access from the local street network in Spotswood, e.g. intersection treatments, parking and local access consideration.

• Truck bans introduced in Spotswood to protect the local area from traffic short cutting through the area.

• The use of Hall Street as a construction traffic route, is not supported due to the environmental, amenity and visual impacts on the Emma McLean Kindergarten and an alternative access is required to be identified.

• Further analysis required in regard to the traffic impact on Douglas Parade and Hyde Street.

• Further detail required on likely frequency and impacts of tunnel closures during operation and incidents and the stated use of the Hyde Street ramps to detour traffic.

My evidence also outlines a number of mitigation measures on arterial and local streets within Hobsons Bay that could mitigate some of the impacts of the additional traffic generated by the Project. These measures are outlined in Section 7 and summarised above.
8.3 Statement

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

Andrew O'Brien P.T.O.E.,
B.E., B.A., C.T.P.&C.
Honorary Member I.T.E.
F.A.I.T.P.M.

Chairman & Director, O'Brien Traffic, Melbourne