North East Link (NEL)
Traffic and Transport Review
Expert Evidence Statement
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Client: North East Link Project
Instructed by: Clayton Utz
Hearing Date: 25/07/19
Report Date: 15/07/19
Reference: V153791
Issue #: Final
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GTA consultants
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1. INTRODUCTION

1.1. Introduction


Following exhibition of the EES and attached technical reports, I have been instructed by Clayton Utz on behalf of the applicant, North East Link Project (‘NELP’), to review and respond to public submissions on the Project and subsequently prepare this report (‘Evidence Statement’) and give evidence on the environmental effects of the Project relevant to my area of expertise.

1.2. Qualifications and Experience

Annexure A to this Evidence Statement contains a statement setting out my qualifications and experience, and the other matters raised by Planning Panels Victoria’s Guide to Expert Evidence. A copy of my curriculum vitae is provided at Annexure B.

1.3. Relationship to Applicant

I have no ongoing private or business relationship with the applicant and have been retained to provide expert witness services at this hearing for a mutually agreed fee.

1.4. GTA Peer Review of the TTIA

1.4.1. Project Team

The role that I had in preparing the initial peer review (North East Link (NEL) Environment Effects Statement Traffic & Transport Peer Review, dated 13 February 2019, herein referred to as ‘the GTA Peer Review Report’) attached to the TTIA was as Project Director and primary author. Other significant contributors to the GTA Peer Review Report and their organisational position set out as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Discipline</th>
<th>Organisational Position at GTA Consultants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will Fooks</td>
<td>Strategic Planning</td>
<td>Director</td>
</tr>
</tbody>
</table>
INTRODUCTION

1.4.2. Adoption of Earlier GTA Peer Review Report

I adopt the GTA Peer Review Report, in combination with this statement, as my written expert evidence for the purposes of the North East Link Inquiry and Advisory Committee’s (‘the IAC’) review into the environmental effects of the Project.

1.5. Further Work Since Preparation of the GTA Peer Review Report

Since the GTA Peer Review Report was finalised, I have undertaken further work in relation to the acceptability of the Project’s environmental effects. A summary of my findings in relation to this further work is set out throughout the body of this Evidence Statement.

Broadly speaking, this Evidence Statement provides commentary (amongst other things) on the following specific (substantive) issues:

- Watsonia Station alternate design
- Nell Street, Watsonia local street impacts
- Performance of the Mullum Mullum and Melba Tunnel (EastLink)
- Response to queries raised by the GTA Peer Review Report
- Diamond Creek / Civic Drive roundabout
- Extended truck curfews / bans for Rosanna Road
- Memorandums of information prepared by the technical team, where issues overlap with my area of expertise.

<table>
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</tr>
<tr>
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<td>Strategic Planning</td>
<td>Senior Consultant</td>
</tr>
<tr>
<td>Christian Bode</td>
<td>Construction Management</td>
<td>Director</td>
</tr>
<tr>
<td>Karen Cogo</td>
<td>Road Safety</td>
<td>Associate Director</td>
</tr>
<tr>
<td>Alex Blackett</td>
<td>Active Travel</td>
<td>Associate</td>
</tr>
<tr>
<td>Robert Dus</td>
<td>Transport Modelling and Analytics</td>
<td>Director</td>
</tr>
<tr>
<td>Matthew Petherick</td>
<td>Transport Modelling and Analytics</td>
<td>Associate</td>
</tr>
</tbody>
</table>
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To assist the IAC, a review of this further work has not caused me to materially change my opinions as expressed in the GTA Peer Review Report.

1.6. Expert Evidence Statement Scope & Purpose

1.6.1. Evidence Statement Purpose

As outlined above, this Evidence Statement should be read as a supplement to the GTA Peer Review Report exhibited as Appendix A to the TTIA, and to assist the Inquiry and Advisory Committee’s consideration of the Project’s environmental effects as they relate to the traffic and transport planning discipline.

The TTIA sets out the framework upon which the assessment has been prepared, including reference to scoping guidelines set out by the Victorian Government entitled Scoping Requirements for North East Link Project Environment Effects Statement (June 2018).

The TTIA sets out the relevant EES objective as it relates to transport. This objective is reproduced below:

‘To increase transport capacity and improve connectivity to, from and through the north-east of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the Project on the broader and local road, public transport, cycling and pedestrian transport networks.’

This Evidence Statement advances investigations completed as part of the GTA Peer Review Report and responds to key issues identified through the review of Project submissions and memorandums of information, to the extent necessary and cognisant of the IAC Minister’s instructions on the breadth of its review including the issued ‘terms of reference’.

For further context, I understand the role of the IAC as follows:

1. The IAC is appointed by the Minister for Planning under section 9(1) of the Environment Effects Act 1978 to hold an inquiry into the environmental effects of the Project. The IAC is to:
   a) review and consider the environment effects statement (EES) and public submissions received in relation to the environmental effects of the Project;
   b) consider and report on the potential environmental effects of the Project, having regard to the evaluation objectives in the EES scoping requirements;
   c) identify any measures it considers necessary to avoid, mitigate or manage the environmental effects of the Project; and
   d) provide advice to the Environment Protection Authority that can be used to inform its consideration of the WAA.

2. The IAC is appointed as an advisory committee under section 151 of the Planning and Environment Act 1987 to:
a) review the draft planning scheme amendment (draft PSA), which has been prepared to facilitate the Project, along with any public submissions received in relation to the draft PSA;
b) provide a report to the Minister for Planning as to whether the draft PSA contains provisions and controls that are appropriate for the Project; and
c) recommend any changes to the draft PSA that it considers necessary.

1.6.2. Expert Evidence Statement Outline

Recognising the earlier GTA Peer Review Report, as well as procedural requirements which apply to the EES process as well as instructions issued by the Minister for Planning, this Evidence Statement sets out:

- A review and assessment of public submissions received on the exhibited EES.
- A review and assessment of additional information memorandums produced by the Project Team (namely SmedTech) in response to questions raised by GTA in connection with EES submissions.
- A review of the adequacy of drafted Environmental Performance Requirements (EPR's) considering further work and research set out in this Evidence Statement including consideration of submissions and information memorandums.

1.6.3. Evidence Statement Project Team

My role in preparing this Evidence Statement was as Project Director and primary author. Other significant contributors to this Evidence Statement and their organisational position are set out in Table 1.2.

Table 1.2: Contributors to the EES Evidence Statement

<table>
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</table>
1.6.4. Evidence Statement Assumptions and Limitations

The scope of the Evidence Statement is limited to the review of the material outlined at Section 1.7. All other data that was used to inform this assessment was publicly available and has been referenced within the body of this Evidence Statement.

In preparing this Evidence Statement, GTA has relied on strategic travel demand estimates prepared by others, and as such, this Evidence Statement does not include any review or consideration of the adequacy and/or robustness of those forecasts. We understand separate peer review investigations have been completed in order to assess the sufficiency and robustness of those travel demand estimates.

GTA has undertaken its review based on the project material provided by the applicant’s representatives. The data and information contained within has only been checked or verified by GTA, as a part of GTA’s review, to the extent that it was necessary for the purposes of preparing this Evidence Statement. GTA does not accept any liability in connection with such unverified information, including errors and omissions in this Evidence Statement that may be a result of errors, omissions or subsequent updates in information provided by the applicant’s representatives.

With the role of the IAC in mind, this review adopts a risk-based approach to issues identified by submitters, with greater effort directed to investigating and responding to items that are considered to pose relatively higher risk of adverse environmental effects. To this end, no guarantee is made that every potential environmental effect has been identified or explored, but every attempt has been made to capture the salient, highest-risk matters.

On undertaking an assessment of issues raised through the process so far, including submissions which recommend specific project inclusions or exclusions, and subsequently making recommendations to the IAC on managing those issues, I have sought to focus on the functional (transport) performance of the Project (where applicable) rather than consider any subsequent consequences including (but not limited to) cost, urban design, groundwater and noise.

1.6.5. Comment on Status of Reference Design

It is important to note for the broader non-technical audience, that concept plans exhibited as part of the EES represent a ‘reference design’ and therefore reflect one possible project design solution. It is not necessarily the only or ‘final’ design solution, but one upon which the applicant’s project team has subsequently sought to assess the Project’s Environmental Effects.

The exhibited EES reference design involved a body of background work which explored a range of design solutions for specific Project elements prior to declaring and exhibiting a ‘reference design’ which was subsequently evaluated for its environmental effects.

On advancing the Project design beyond the EES process, I understand that government subsequently intends to enter into an ‘Availability Public Private Partnership’ for delivery. This would
require the successful contractor to submit a concept design which accords with parameters set for the Project coming out of this EES process and endorsed by the Minister.

1.7. References

In preparing this Evidence Statement, I have primarily had regard to the following:

- Technical Report A to the EES (the TTIA)
- Chapters 1 to 9 and 27 of the EES
- Project map book
- The Project reference design
- An inspection of the Project corridor and its surrounds on numerous occasions
- Other references relied upon in compiling this assessment as set out in the body of this Evidence Statement.

1.8. Consideration of Submissions

I have read the public submissions made with regard to the EES, draft planning scheme amendment and works approval application. I have initially sought to identify issues which are relevant and overlap with my area of expertise.

After reviewing and interpreting issues raised in submissions, I have subsequently prepared a response in this Evidence Statement to only those issues which I have determined to be sufficiently significant to warrant further review and discussion (refer section 1.6.4 above). My response includes comments and, where appropriate, further experiments or research to determine the significance of the issues and whether the proposed EES framework (namely the drafted EPR’s) manage identified impacts acceptably.

1.9. Summary of Key Issues, Opinions and Recommendations

I have reviewed and considered all eight hundred and seventy-four (874) submissions received in response to the exhibited EES for matters which relate to my area of expertise. I have sought to focus on those issues which I consider to be of greatest potential concern to the Project and consequently, warrant further consideration by the IAC. The key issues outstanding (and my response) are summarised below, noting that Section 5 contains a more extensive outline and commentary on issues.
### Table of Issues and Responses

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<th>Issue</th>
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<th>Refer further</th>
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</thead>
<tbody>
<tr>
<td>Seeks all new shared paths be delivered in accordance with various guidelines</td>
<td>The current wording of the EPR only considers interchanges and intersections to be designed to meet relevant road and transport authority requirements. It would be appropriate to consider revisions to the EPR to broaden the requirement of the Project works to meet relevant road and transport authority requirements beyond interchanges and intersection design (EPR T1).</td>
<td>R4</td>
</tr>
<tr>
<td>Adequacy of the selected study area (particularly with respect to modelling extents)</td>
<td>I am satisfied that the EES technical review adopts a study area that is consistent with my experience on other major infrastructure projects except to note the a review is required of the network around the intersection of the Greensborough Bypass, Diamond Creek Road and Civic Drive and have requested further information from the technical team to this effect. This memorandum confirmed that further works are required and will be delivered by others. The detail around these likely works should be outlined as part of any detailed design development process to ensure an appropriate level of connectivity through design is maintained.</td>
<td>Section 5.2.1</td>
</tr>
<tr>
<td>Concerns that microsimulation modelling does not include the interchange of Hoddle Street/Eastern Freeway</td>
<td>Given the modest increases in transport demand at this end of the corridor as well as a supplementary memorandum of information around further research, GTA are comfortable with the adequacy of the model.</td>
<td>C5</td>
</tr>
<tr>
<td>Improved access arrangement for Bulleen Park &amp; Ride, particularly to the south</td>
<td>I consider it appropriate that the proposed Bulleen Park and Ride facility include traffic access which supports movement to from the facility to the south of the Eastern Freeway without the need to circumnavigate the Bulleen sub-regional area. I also support improved active travel links between the facility and Bulleen Road.</td>
<td>R21</td>
</tr>
</tbody>
</table>
## Concerns regarding the proximity of the proposed Doncaster Park & Ride access to Hender Street

I recommend the proposed left-in / left-out access arrangements be investigated further and assessed for inclusion as part of the Project.

---

## Signalisation of Barak Street/Thompsons Road during construction

In the event that the Project has a substantial reliance on Barak Street for access (either temporarily or permanently), further investigations should be undertaken to regarding the level and timing of demand and consider the need for signalisation as a potential management response.

---

## Extension of the proposed dedicated bus rapid transit corridor along the Eastern Freeway beyond Doncaster Road

The EES sought guidance from the Business case and confirmed in consultation with DoT that physical constraints limited the ability to extend this service east of Doncaster Road.

---

## Concerns regarding the impact of the Project on Diamond Creek Road and Greensborough Bypass

I have undertaken further investigations, which found that there may be some operational challenges on Diamond Creek Road and Greensborough Bypass as a result of the Project. Further information was requested and received. This memorandum confirmed that further works are required and will be delivered by others. The detail around these likely works should be outlined as part of any detailed design development process to ensure an appropriate level of connectivity through design is maintained.

---

## Consideration should be given to opportunities to rationalize or reduce infrastructure where

I agree that where appropriate and the stipulations of the Scoping Requirements and Public Works Order are met, consideration should be given to identifying such opportunities noting that LOS criteria must be maintained where variations are sought to be applied.

---

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<td>I recommend the proposed left-in / left-out access arrangements be investigated further and assessed for inclusion as part of the Project.</td>
<td>R22</td>
</tr>
<tr>
<td>Signalisation of Barak Street/Thompsons Road during construction</td>
<td>In the event that the Project has a substantial reliance on Barak Street for access (either temporarily or permanently), further investigations should be undertaken to regarding the level and timing of demand and consider the need for signalisation as a potential management response.</td>
<td>R25</td>
</tr>
<tr>
<td>Extension of the proposed dedicated bus rapid transit corridor along the Eastern Freeway beyond Doncaster Road</td>
<td>The EES sought guidance from the Business case and confirmed in consultation with DoT that physical constraints limited the ability to extend this service east of Doncaster Road.</td>
<td>C21</td>
</tr>
<tr>
<td>Concerns regarding the impact of the Project on Diamond Creek Road and Greensborough Bypass</td>
<td>I have undertaken further investigations, which found that there may be some operational challenges on Diamond Creek Road and Greensborough Bypass as a result of the Project. Further information was requested and received. This memorandum confirmed that further works are required and will be delivered by others. The detail around these likely works should be outlined as part of any detailed design development process to ensure an appropriate level of connectivity through design is maintained.</td>
<td>R39, R40</td>
</tr>
<tr>
<td>Consideration should be given to opportunities to rationalize or reduce infrastructure where</td>
<td>I agree that where appropriate and the stipulations of the Scoping Requirements and Public Works Order are met, consideration should be given to identifying such opportunities noting that LOS criteria must be maintained where variations are sought to be applied.</td>
<td>C35</td>
</tr>
</tbody>
</table>
### INTRODUCTION

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<thead>
<tr>
<th>Issue</th>
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</thead>
<tbody>
<tr>
<td>North East Link runs adjacent to Greensborough Highway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerns regarding local road closures and requests that local road access to arterial roads should be retained where possible.</td>
<td>To the extent practicable, I agree that local road connections to arterial roads should be maintained. I am satisfied that the TTIA, EES and supplementary memorandums provide a level of detail which indicate that proposed closures can be adequately managed.</td>
<td>C39</td>
</tr>
</tbody>
</table>
| Proposed design of the Lower Plenty Road interchange to allow oversized and placard loads to access NEL north of the interchange | The North East Link tunneled section extends a short distance north of Lower Plenty Road. Generally, placard loads and over-dimensioned vehicles are not permitted in tunnels in Melbourne as a precautionary measure. There are two potential outcomes for the IAC to consider:  
  - Consider a deviation from standard practice and allow trucks to travel in this short tunnel section.  
  - Consider requiring any detailed design to show an alternate configuration for North East Link which removes the short tunnel section and allows placard and oversized loads access to the Project at this location. | R67           |
<p>| Concerns there is no provision of a safe, direct, unimpeded continual shared path from Greensborough to the CBD. Current route is prone to flooding, indirect and unsafe. | I recommend a pedestrian and cycle bridge be provided across the Yarra River at Banksia Street, Heidelberg. | C64           |</p>
<table>
<thead>
<tr>
<th>Issue</th>
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<th>Refer further</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade Watsonia Station to include DDA access</td>
<td>Any new link or new infrastructure works as part of delivering the Project which includes connectivity to ground level should satisfy contemporary design standards, including those relevant to accessibility.</td>
<td>R86</td>
</tr>
<tr>
<td>Provide direct, covered pedestrian/cyclist access between the multi-deck car park and the station</td>
<td>Such an upgrade extends beyond the remit and scope of the Project but could be considered as an optional Project enhancement during detailed design.</td>
<td>R87</td>
</tr>
<tr>
<td>Explore possibilities to split Greensborough Road further north to allow pedestrian/cycling crossing to occur via one set of crossings</td>
<td>The alternative design for Watsonia shows a consolidated design, which indicates that a simplification can be delivered without having to relocate any bifurcation of Greensborough Road further north.</td>
<td>R88</td>
</tr>
<tr>
<td>Request for Watsonia Traders Association to be included as an approval agent for any Traffic Management Plans which impact the local area</td>
<td>I expect that Council will communicate or develop planned measures in conjunction with the Watsonia Traders Association as part of their role on the Transport Management Liaison Group. However, given the degree of change anticipated around Watsonia (and potentially other areas along the corridor), the IAC could consider amending EPR T3 to allow representatives from stakeholder or community groups to attend and provide input at relevant meetings.</td>
<td>R120</td>
</tr>
<tr>
<td>Requests the IAC investigate how North East Link might adopt a better system of guidelines (with respect to bicycle facilities)</td>
<td>I do not consider there to be a need for the EPRs to prescribe a specific guideline or practice. However, I do believe it is appropriate for the EPRs to require the Project to meet the design requirements of relevant road and transport authorities. I am of the view that requesting an investigation of better systems of guidelines sits outside of the IAC terms of reference.</td>
<td>R123</td>
</tr>
</tbody>
</table>
A number of complementary active transport projects were proposed, and I am of the opinion that the following warrant further consideration by the IAC for inclusion in the Project:

- Cycling facilities along any part of Diamond Creek Road that is upgraded as a direct component of the Project or any complementary project
- Improve north-south pedestrian and cyclist connectivity at Drysdale Street
- Improve east-west walking and cycling connectivity on Manningham Road at the Yarra River to connect existing trails
- Provide a shared path connection from the Bulleen Road shared paths along the west side of Templestowe Road within the extent of the Project boundary
- Provide a more direct and low-stress route to the Bulleen Park and Ride from catchments in the north, south and west via Bulleen Road.
- Address flooding issues during upgrade of path near Willsmere Park where modifications are proposed as part of the Project.
- Upgrade lighting in Kilby Road underpass to meet contemporary design standards.
- Correct the name of the Kilby Road link path on subsequent plans
- Where underpasses are added or modified (i.e. due to freeway widening), they should meet the relevant standards.
- Where infrastructure is added or modified, wayfinding should be updated along the Koonung Creek Trail.

<table>
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<tr>
<th>Issue</th>
<th>Response</th>
<th>Refer further</th>
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<td>Response</td>
<td>Refer further</td>
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<tr>
<td>Concern about truck traffic accessing Musca Street Reserve</td>
<td>The TTIA proposes that access is to be provided off Burke Road. It appears that this may require further consideration, as the grade difference between Burke Road and the Reserve would present access challenges. However, the local street network could absorb the low volume of movements proposed.</td>
<td>C99</td>
</tr>
<tr>
<td>Concerns about increase in traffic volume on Greensborough Highway during construction</td>
<td>The TTIA shows that there is limited spare capacity on Greensborough Road during peak hours. This will require careful consideration of construction worker start and finish shift times around peak periods. I am satisfied that Transport Management Plans can satisfactorily manage these issues.</td>
<td>C102</td>
</tr>
<tr>
<td>Concern that road closures will limit access to residential properties and community or sports facilities.</td>
<td>Where possible, it is recommended that NELP strongly encourage construction methodologies that reduce the extent of closures, noting that these impacts can be satisfactorily managed under EPR T2 and T3.</td>
<td>C103</td>
</tr>
<tr>
<td>Request for a construction compound to shift outside of the current Bulleen Park access road to enable unrestricted access via three gates</td>
<td>Given limited opportunities to access Carey Grammar School Sports Complex and Bulleen Park, it would be helpful to adjust the proposed fence line to exclude the access road unless it is intended to provide a temporary local access restoration outcome to the immediate south and ongoing access to the three gates nominated in the Ratio Consultants technical review.</td>
<td>R146</td>
</tr>
<tr>
<td>Requests for replacement car parking to be provided for exclusive use by Carey to replace car</td>
<td>The Project team must consider existing car parking needs generated by Carey Grammar School Sports Complex (CGSC) and the other sporting uses and clubs in the Bulleen Park area during construction and the post implementation phase. However, provision of car parking outside of CGSC for the exclusive use of CGSC is</td>
<td>R148</td>
</tr>
<tr>
<td>Issue</td>
<td>Response</td>
<td>Refer further</td>
</tr>
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<td>-------</td>
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</tr>
<tr>
<td>parking occupied during construction</td>
<td>inconsistent with current practice and therefore not recommended.</td>
<td></td>
</tr>
<tr>
<td>Amend the reference design to incorporate an upgraded intersection at the CGSC/Bulleen Road intersection</td>
<td>I do not recommend adoption of either of the options proposed by Ratio Consultants, however do consider there to be a sufficient basis to require a localised traffic analysis involving a more robust confirmation of Veneto Club activity levels during a weekend day (around the Carey Sports Complex peak hour). This traffic analysis should inform the final layout and configuration of proposed shared access.</td>
<td>R154</td>
</tr>
<tr>
<td>Request for Bulleen Road (primary) access to Marcellin be maintained unrestricted during construction, with traffic lights installed.</td>
<td>Marcellin’s request for access off Bulleen Road is generally supported, acknowledging that the Project may require flexibility in how access off Bulleen Road is managed. Marcellin may also be required to be flexible in recognizing circumstances where access may need to be limited outside of school hours and / or school terms.</td>
<td>R157</td>
</tr>
</tbody>
</table>

### 1.10. Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have, to my knowledge, been withheld from the North East Link Inquiry and Advisory Committee.
2. PROJECT BACKGROUND

2.1. Introduction

Details surrounding the North East Link Project are set out in detail at Section 2 of the TTIA. It is not the intention of this Evidence Statement to unnecessarily duplicate content contained in the broader EES documentation and the TTIA but rather provide a high-level outline of the Project and its primary components to assist with establishing the overall Project context.

2.2. Project Rationale

2.2.1. Preamble

The following section provides commentary on the Project’s rationale primarily through a summary of strategic work completed as part the Project Business Case and subsequent processes. It is not the role of the Evidence Statement or EES process to appraise the validity of the Business Case process.

The North East Link Business Case (the Business Case) was released in May 2018 identified a range of key transport problems in Melbourne’s north-east, including:

- **Poor orbital connectivity** and subsequent impacts on links between population, employment, service and industrial centres and labour markets.
- **Inefficient freight movement** and the need for improved movement of goods through the north-east corridor, particularly given anticipated growth.
- **Congestion and heavy vehicles on neighbourhood roads** and the subsequent impacts on travel time reliability, noise, emissions and risk of road crashes.

The Business Case then considered a number of strategic interventions (derived through workshops) and bundled potential responses into five key options, a brief description of each of which is outlined below.

**Strategic Option 1: Arterial Road Network Upgrade**

Seven of the key arterial roads in the north-east would be upgraded and duplicated to increase capacity in the network. The seven roads that were proposed include: Rosanna Road, Fitzsimons Lane, Bulleen Road, Manningham Road, Greensborough Highway, Diamond Creek Road and Lower Plenty Road.

Upgrading these roads was intended to better facilitate business access to labour markets and household access to jobs and education. Additional separated walking and cycling paths were proposed to encourage active travel to education or work. The additional capacity created by these upgrades was intended to improve travel time and reliability road based public transport systems.
Strategic Option 2: Demand and Productivity Management

The purpose of this strategic option was to manage demand and productivity on the transport network (without any increase in the capacity of the network). In this option, a number of softer interventions would be implemented, such as demand management pricing, tolling existing roads and facilities, cordon pricing, pricing based on direction of peak travel and vehicle occupancy incentives. This option intended to reduce congestion, change travel behaviours (by mode) and lengthen (but soften) out peak periods.

To supplement the demand management measures on the road network, this option also proposed to implement corridor plans with various initiatives, such as extending truck bans, turning movement bans, stricter parking restrictions, enforcing mode priority during peak periods or undertaking advertising campaigns to encourage mode shift. To manage freight operations, this option proposed to improve delivery time coordination between surrounding industrial precincts and truck travel time restrictions.

Strategic Option 3: Public Transport and Freight

This strategic option considered a combination of public transport investments and freight movements in order to manage both the people and freight movement challenges in the north-east.

Public transport investments proposed in this option included increasing the frequency of SmartBus services with additional priority treatments, constructing a spur line from the Hurstbridge railway line to the La Trobe NEIC and/or extending tram Route 86. These were intended to improve orbital connectivity and facilitate economic and employment opportunities whilst reducing share of trips undertaken by private motor vehicle.

To tackle freight challenges, a number of freight interventions were also proposed, including construction of an intermodal freight rail network by upgrading existing passenger rail links to connect the Interstate Freight Terminals in the north and south east. The intention of these measures was to reduce costs to businesses and improve the competitiveness for Victoria. This option is summarised at Figure 2.1.
Strategic Option 4: Bypass Freeway

This option proposed to construct a freeway linking the M80 to the Eastern Freeway without any interchanges in between. Additional measures included enhancing the local bus network, land use interventions, network management measures and improving pedestrian and cycling infrastructure. The bypass would be enhanced by ITS and Managed Motorways. Freight efficiency was intended to improve and make communities more liveable by taking heavy vehicles off local roads.

Strategic Option 5: Connected Freeway

This option proposed to construct a freeway linking the M80 to the Eastern Freeway with interchanges linking to key arterial roads along the route. Additional measures included enhancing the local bus network, land use interventions, network management measures and improving pedestrian and cycling infrastructure. The freeway would be enhanced by ITS and Managed Motorways. Freight, commuter and household trips all benefit from more reliable and shorter trip times into the north east with key linkages onto arterial roads. This option is the current proposal assessed in the North East Link EES.

1 (North East Link Business Case, 2018, pp. 4-8)
2.2.2. Strategic Options Assessment

Each option was assessed based on five criteria:

- **Benefits**: The level of benefit delivery was appraised for each option, with an overall benefit score calculated based on the weightings applied to each of the investment benefits.
- **Cost**: Order of magnitude capital and operating costs were estimated to provide an indication of the likely financial impact of each option.
- **Time**: An estimate was made of the time required in years to achieve the benefits (relative to the percentage of full benefit to be delivered) from funding to benefit delivery.
- **Risks**: Key risks likely to have an impact on the achievement of benefits were calculated.
- **Impacts (dis-benefits)**: Negative consequences that may occur as a result of implementing the option were identified.

A summary of the findings from the Business Case, including ranking of preferred options, is reproduced at Table 2.1.

Table 2.1: Evaluation of Business Case Strategic Options

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of full benefit to be delivered</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>55%</td>
<td>75%</td>
</tr>
<tr>
<td>Benefit 1: Economic growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Benefit 2: Increased economic opportunity for households</td>
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<tr>
<td>Benefit 3: Improved competitive ness of the State</td>
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<td></td>
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<tr>
<td>Benefit 4: Improved livability</td>
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</tbody>
</table>

**Cost**

- Estimated capital investment cost (Range): $2b–$4b, $0.2b–$0.3b, $26b–$79b, $7b–$16b, $2b–$16b
- Estimated operational costs (Range): $0.2b–$0.4b pa, $0 pa, $21b–$23b pa, $21b–$31b pa, $21b–$31b pa

**Time**

- Range: 4 – 6 years, 20 – 30 years, 10+ years, ~10 years, ~10 years

**Risks**

- Risk: Moderate, High, High, Moderate, Moderate
- Dis-benefit: Moderate, Moderate to High, Moderate, Low to moderate, Low to moderate
- Ranking: (Lowest ranking = preferred response) 5, 4, 3, 2, 1

2 (North East Link Business Case, 2018, pp. 4-12)
As shown, delivering a ‘connected freeway’ was determined as the most appropriate option and hence set the pathway for a road-based project response.

Subsequent stages of planning offered four potential options for the new north-east freeway connection, shown at Figure 2.2.

**Figure 2.2:** Corridor options considered for the north-east freeway link

The options were subject to community consultation in 2017 and assessed against a range of criteria. Ultimately, Corridor A (between the M80 and Eastern Freeway) was identified and progressed as the preferred alignment and a similar alignment was incorporated into the Public Works Order, as shown at Section 2.4.

### 2.3. Key Transport Issues Sought to be Resolved by NEL

#### 2.3.1. Origins and Need for an Orbital Road Network

Melbourne’s plan for a fully orbital road network was initially developed in the 1969 *Melbourne Transportation Plan*, which proposed a fully radial and orbital network of freeways. The proposed network has been reproduced at Figure 2.3.

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3. (North East Link Project, n.d.)
Beginning in the 1970s all the current major radial freeways that were proposed in the plan, have since been constructed (albeit under different names):

- West Gate Freeway (south-west)
- Calder Freeway (north-west)
- Tullamarine Freeway (north-west)
- Hume Freeway (north)
- Eastern Freeway (east) and;
- Monash Freeway (south-east)

All these major freeways, by their radial nature, provided accessibility into and out of inner Melbourne, with orbital connectivity facilitated suburban arterial roads. To improve connectivity to the major radial freeways and facilitate cross-city movements, a number of major orbital roads have since been delivered. In the 1990's both the Western Ring Road and the Metropolitan Ring Road were constructed to form the M80 Ring Road, which linked the West Gate Freeway in west to the Calder, Tullamarine and Hume Freeways and beyond to the Greensborough Bypass in north. For the first time, drivers in Melbourne were connected from the western suburbs to the northern suburbs without using local and arterial roads. The M80 Ring Road was initially built with two traffic lanes in each direction and improved both cross-city and orbital connectivity for commuters and freight alike.

EastLink was constructed in the 2000s as the eastern section of orbital network that runs north-south and connects the Eastern Freeway with Frankston with interchanges at the Monash Freeway, as well
as other major arterials and highways including the Princes Highway, Dandenong Bypass and Peninsula Link.

Both of these orbital routes were a catalyst for significant land use change and intensification. High levels of employment and commercial development occurred along these corridors, and outer suburban centres such as Dandenong, Ringwood, Greensborough and Tullamarine experienced rapid growth due to the increased accessibility\(^5\).

Currently, the north-east has a significantly different transport network than other parts of Melbourne. With limited access to rail, trams, orbital and radial freeways there is a higher reliance on a disjointed arterial network. Whilst population in the north-east is forecasted to increase by 22% by 2036, that number will be dwarfed by growth in the south-east and the northern growth corridors. This population growth will increase demand on the road network, including orbital trips from the east to the north. Estimates indicate that this demand would equate to approximately 20,000 additional trips before 2036. Without the construction of the North East Link, existing key links including Bulleen Road, Rosanna Road, Lower Plenty Road and Greensborough Road would be relied upon to carry the increases. Without any intervention, these roads are likely to experience further operational degradation causing longer and less reliable travel times\(^6\).

Since 2009, the M80 Ring Road has undergone (or commenced) duplication from 2 lanes to 4 lanes in each direction. The duplication of the section leading to the Greensborough Bypass, the end of the M80 Ring Road, is yet to be complete and once it is complete, has the potential to connect into the North East Link, which would deliver the final connection for a complete major orbital road around metropolitan Melbourne.

A chronology of road projects contributing to the completion of a metropolitan orbital link including the significance of the North East Link Project can be seen at Figure 2.4 on the following page.

\(^5\) (North East Link Business Case, 2018, p. 13)
\(^6\) (North East Link Business Case, 2018, pp. 1-6)
2.3.2. Need for Corridor Interchanges vs a Bypass Corridor Route

As discussed in Section 2.2.2, the two strategic options that were acknowledged as the preferred responses for the north-east were a connected freeway and a bypass freeway. The key difference between the two being that a connected freeway has interchanges / connections from the freeway to existing key local arterial routes whilst the bypass does not.

The Business Case acknowledges that both options contribute to facilitating economic growth and opportunities and remove commuter, business and freight traffic off key local arterials. However, the connected freeway is capable of promoting much higher economic growth given its local area connectivity along the corridor to key employment and activity nodes, including the La Trobe National Employment and Innovation Centre (NEIC), the Epping, Ringwood and Broadmeadows Metropolitan Activity Centres as well as the Greensborough Major Activity Centre. Investigations indicate that a connected freeway would also remove more (inter-regional) general traffic from key arterial roads. If a bypass was constructed, orbital trips from the north to the east (or vice versa) would be attracted to North East Link, however trips with origins or destinations in the north east would still be required to use the existing arterial road network.

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7 (North East Link Business Case, 2018, p. 13)
2.3.3. Need to Support Cross-City and Orbital Freight Movement

Freight movement in the north-east is constrained, inefficient and unreliable, yet remains an important part of the city’s freight network. Rural and regional areas in the east and freight hubs in Melbourne’s south-east generate freight movements through arterial roads in the north-east to connect with major freight routes and hubs including the Hume Freeway, Melbourne Airport and the Melbourne Metropolitan Fruit Market.

The freight task is expected to continue to grow throughout Melbourne and Victoria, increasing the importance of effective freight movement through the north-east to support business competitiveness, high-value industries and to sustain Melbourne’s position as a leading freight and logistics hub.

Melbourne currently has (and is expected to have in the foreseeable future) a high reliance on the road network for freight movement. While rail freight is a suitable alternative for moving large amounts of goods directly between hubs, it struggles to provide a suitable alternative for shorter, high-priority trips between economic centres. These trips are projected to grow with increases in international air freight, an ongoing shift towards eCommerce delivery models and the growing demand for express parcel deliveries. If these trips are not able to be accommodated on suitable routes through the north-east, light and heavy vehicle volumes will continue to rise on existing local and arterial roads, exacerbating adverse impacts on road safety, air quality and noise.

Beyond the requirement to support local, last-mile freight trips, the High Productivity Freight Vehicle (HPFV) network is incomplete in the north-east. This results in additional trucks on the neighbourhood arterial road network using smaller, less-productive freight vehicles or longer trips elsewhere on the metropolitan freeway network, including the M1 and M80, and reduced competitiveness for businesses in the north-east which are unable to use HPFVs for movement of goods.

2.3.4. Need for Improved Public Transport

To help Melbourne cope with the expected growth over the coming decades, it is becoming increasingly important to encourage use of available mass transit options.

To assist with improving bus mode share and ridership, it will be important to enhance its priority, frequency and integration with surrounds and other modes, as well as improve travel times and reliability by reducing background traffic levels. The addition of the missing orbital link coupled with an improved (priority) bus network is intended to support public transport trips for businesses to labour markets and household trips to work and education.

In addition to improving orbital public transport trips, the addition of the Doncaster Busway, with park and ride facilities, is intended to improve connectivity, trip times and reliability of trips into the inner suburbs for commuters.
2.4. Public Works Order

North East Link is being assessed by the Minister for Planning under Victoria’s *Environment Effects Act* (1978), which provides for the assessment of proposed projects that could have a significant effect on the environment.

On 2 February 2018, the Minister for Planning determined that the proponent for North East Link must prepare an EES to inform the Minister’s assessment of the Project. The Minister’s reasons for this determination included that the Project is ‘a large-scale infrastructure construction project ... in an intensively developed area’, with works having ‘the potential for significant environmental effects on a range of environmental values’.

On 6 February 2018, the Minister issued the *Public Works Order: North East Link Project* (*Public Works Order*) under Section 3(1) of the Environment Effects Act (1978), with the declaration published in the Victorian Government Gazette.

The works, including requirements for interchanges at key locations along the corridor, comprise the following specific design elements (reproduced from the *Public Works Order*):

- **Western Ring Road to Lower Plenty Road** – from the M80 and Greensborough Bypass to the northern tunnel portal, this section would include a mixture of above, below and at surface road sections, with new road interchanges at M80, Grimshaw Street and Lower Plenty Road.
- **Tunnels** – from the northern tunnel portal located just north of Lower Plenty Road to south of Manningham Road, twin tunnels would travel under residential areas, Banyule Flats and the Yarra River. Near each tunnel portal supporting tunnel infrastructure would be required, including ventilation structures, substations and associated infrastructure. This section would include a new interchange at Manningham Road.
- **Bridge Street to Eastern Freeway** – this section would include open cut and bored or mined tunnel with the southern tunnel portal located south of the Veneto Club. Further south, surface road and viaduct structures would connect to the Eastern Freeway via a new interchange.
- **Eastern Freeway upgrades** – from around Hoddle Street in the west through to Springvale Road in the east, modifications to the Eastern Freeway would include widening to accommodate future traffic volumes, provision of new dedicated bus lanes for rapid bus services and associated works; and
- **Relevant ancillary temporary works to support the construction project.**

Procedures and Requirements Under Section 3(3) of the Environment Effects Act 1978

The following procedures and requirements are to apply to the EES (relevant sections reproduced from the Public Works Order, *with my emphasis added in bold* of requirements to review transport impacts as well as reference to the preparation of relevant Project Scoping Requirements):
(i) The EES is to document investigations of potential environmental effects of the Public Works, including the feasibility of design alternatives and relevant environmental mitigation and management measures, in particular for:

a. potential effects on biodiversity, including through loss, degradation or fragmentation of habitat or through other causes (e.g. shading, light, noise and vibration), as well as related ecological effects;

b. potential effects on beneficial uses of surface water and groundwaters due to changes in flows, water quality, hydrology connectivity, mobilisation of existing groundwater contamination, or dewatering arising during construction or operation;

c. potential for ground movement or other geophysical conditions including risks related to land and river bank or bed stability;

d. effects on cultural heritage values including Aboriginal cultural heritage;

e. potential effects on health and amenity during construction and operation due to changes in visual conditions, changes in land use, redistributed traffic and transport changes, air quality, traffic noise and vibration;

f. potential temporary and permanent effects on transport network and services, both for residents and businesses located in the vicinity of the proposed and related works and for the broader community;

g. potential for displacement or severance of commercial and residential properties;

h. potential for acid sulphate soils, other contaminated materials and the management of spoil throughout construction; and

i. other effects on land uses and the community, including recreational value of open space.

(ii) The matters to be investigated and documented in the EES will be set out more fully in scoping requirements. Draft scoping requirements will be exhibited for a least 15 business days for public comment, before final scoping requirements are endorsed by the Minister for Planning.

(v) The level of detail of investigation for the EES studies should be consistent with the approach set out in the scoping requirements and be adequate to inform an assessment of the significance and acceptability of the potential environmental effects of the proposed works, in the context of the Ministerial Guidelines.

(vi) DELWP will convene an inter-agency technical reference group (TRG) to advise DELWP and the North East Link Authority, as appropriate, during the preparation of the EES, the scoping requirements, the design and adequacy of the EES studies, and coordination with statutory approval processes.

(viii) The North East Link Authority is to apply appropriate peer review and quality management procedures to enable the completion of EES studies to a satisfactory standard.
Outline of North East Link Project Area

The *Public Works Order* also defines the geographic project extents, showing the bounds within which, the Project is to be delivered (reproduced in Figure 2.5).

**Figure 2.5: Schematic Diagram of the Outline of the required Project Area**

![Diagram of the Outline of the required Project Area](image)

### 2.5. Technical Reference Group

The *Public Works Order* required the convening of an inter-agency technical reference group (TRG) to advise the Department of Environment, Land, Water and Planning (DELWP) and the North East Link Authority (NELA) during the preparation of the *EES*, the *Scoping Requirements*, the design and adequacy of the *EES* studies, and coordination with statutory approval processes.

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8 (Public Works Order: North East Link Project, 2018, p. 3)
The TRG was convened in February 2018 and comprised representatives from:

- DELWP
- Department of Health and Human Services (DHHS)
- Aboriginal Victoria
- City of Banyule
- City of Boroondara
- City of Manningham
- City of Whitehorse
- City of Yarra
- EPA Victoria
- Heritage Victoria
- Melbourne Water
- Parks Victoria
- Public Transport Victoria
- Shire of Nillumbik
- Transport for Victoria
- VicRoads
- Victorian Planning Authority
- VicTrack
- Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation.

Matters specified in the TRG’s Terms of Reference include:

- Applicable policies, strategies and statutory provisions
- The proponent’s public information and stakeholder consultation program for the EES
- The scoping requirements for the EES
- The design and adequacy of technical studies for the EES
- Responses to issues arising from the EES investigations
- The technical adequacy of draft EES documentation
- Coordination of statutory processes.

The EES outlines that these matters were covered in regular meetings with the TRG (held on an approximately monthly basis throughout 2018) as well as through one-on-one discussion with TRG members. The TRG reviewed and provided feedback on this EES and the supporting technical reports.

### 2.6. Scoping Requirements

As part of the EES process, and with input from the TRG, *EES Scoping Requirements* (‘Scoping Requirements’) were developed. Draft Scoping Requirements were published in May 2018, with the final version released in June 2018. These requirements provide detail on the specific matters to be investigated in the EES to enable effective assessment of potential effects of the Project. They outline evaluation objectives and specific requirements for assessment of potential effects.

The section that outlines the requirements for the assessment of environmental effects that relate to transport capacity, connectivity and traffic management have been reproduced below. These scoping
requirements have primary importance on evaluating the adequacy of any design response to the Project and serve, amongst other things as a reference (or assessment benchmark) when considering specific complementary projects or requests for project inclusions raised in submissions to the EES.

**Evaluation objective**

To increase transport capacity and improve connectivity to, from and through the northeast of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the project on the broader and local road, public transport, cycling and pedestrian transport networks.

**Key issues**

- Disruption to pedestrian movements, bicycle connectivity, public transport, motor vehicle and freight traffic during construction.
- Contribution to an integrated and sustainable transport system, including active transport.
- Transport connectivity and capacity across the northeast of Melbourne, including network resilience and redundancy.
- Changes to local and arterial traffic distribution in the northeast of Melbourne.
- Effects of the redistribution of freight and heavy vehicle traffic including placarded and over-dimensional vehicles in the northeast of Melbourne and implications for residents, residential areas and businesses during construction and operation.
- Connectivity of pedestrian and cycling networks across the northeast of Melbourne and opportunities for future linkages.
- Predicting future travel behaviour and transport trends over time.

**Priorities for characterising the existing environment**

- Describe both the regional and local transport network context for the project.
- Describe relevant policies, strategies and plans for transport in the vicinity of the project.
- Establish comprehensive baseline data on freight, private motor vehicle, public transport, pedestrian and bicycle movements in areas affected by the project.
- Describe the elements of the road-based transport system including road, public transport, freight, cycling and pedestrian transport networks that might be affected by the project, during the construction and operational phases of the project.
- Undertake predictive modelling of regional and local transport network traffic flows in the absence of the project.
Design and mitigation measures

- Describe the proposed approach to managing transport network conditions during the project’s construction such as any staging proposed to maintain transport system function and the proposed nature and duration of diversions including for pedestrian and cycle links.
- Describe the potential routing of spoil transport from tunnelling works and other construction-related transport movements to minimise traffic and amenity impacts.
- Describe any potential public transport priority treatments, such as signal priority and tram/bus lanes, to enhance public transport access and uptake and minimise any adverse impacts on traffic and other public transport users’ journeys including travel to stops and stations during construction.
- Describe the proposed transport network design features and approach to optimise and integrate the project with the existing or modified transport network, including any proposed solutions to accommodate placarded and over-dimensional vehicles.
- Describe the proposed transport network design features and approach to optimise and integrate the project with the existing pedestrian and bicycle network, including any proposed solutions to enhance pedestrian and bicycle access in the vicinity of the project.
- Describe traffic calming or other management tools that could be used to modify travel behaviour on the project and local roads such as managed motorway systems, intelligent transport systems, tolls, clearways, truck curfews and bans.

Assessment of likely effects

- Characterise the extent, duration and types of disruptions during the construction phase.
- Undertake predictive modelling of regional, local and project transport network traffic flows following implementation of the project.
- Assess the project’s positive and negative effects on the existing transport network during construction (including spoil transport) and operation including in relation to:
  - predicted travel time and vehicle movement outcomes, including performance at the project’s interchanges and key intersections adjacent to the proposed alignment;
  - redistribution of traffic, including trucks and placarded vehicles, on the regional and local road network;
  - effects of traffic management measures on local and arterial roads;
  - traffic safety, given the predicted transport network traffic flows following implementation of the project;
  - local access of the community to residential areas, schools, retail centres, activity centres, community facilities and open spaces;
• effects on tram, bus and train movements and access to stops and stations;
• accessibility and safety for pedestrians at road junctions and community facilities;
• connectivity, accessibility, function, experience and safety for cyclists and pedestrians including use of existing and new shared use paths, bridges and on-road bike paths;
• the overall geographic distribution and magnitude of changes to travel times and accessibility for road users;
• consistency with transport and urban plans (e.g. VicRoads Movement and Place Framework, Victorian Cycling Strategy (2018-2028), Plan Melbourne (2017-2050)); and
• interactions, including possible cumulative impacts with other relevant projects, for example, the M80 and the Outer Metropolitan Ring Road/E6 developments.

• Undertake sensitivity analysis to test assumptions and inputs of transport model, if required.

Approach to manage performance

• Describe the environmental performance requirements to set transport network outcomes that the project must achieve.

2.7. Environmental Performance Requirements

As outlined in the Scoping Requirements, it is a requirement of the EES to describe the Environmental Performance Requirements (‘EPRs’) to set transport network outcomes that the Project must achieve. The EPRs define the minimum environmental outcomes that must be achieved during design, construction and operation of the Project. Compliance with the EPRs will be audited and managed through the Project contract. The EPRs are expressed and intended to minimise impacts to within reasonable limits having regard to contextual factors and the practical delivery of the Project.

The performance-based approach of the EPRs enables different design alternatives or construction methodologies to be considered to achieve the required outcomes. This provides a delivery model that is flexible and encourages innovation through the procurement process by allowing tenderers to determine how EPRs would be achieved while developing and optimising the Project design.

The EPRs for transport are outlined in Section 12 of the TTIA and have been reproduced in Table 2.2. They are generally an extension of expectations set out in the Project Scoping Requirements.

---

9 (North East Link Environmental Effects Statement, 2019, pp. 27-23)
Table 2.2: Draft Transport Environmental Performance Requirements

<table>
<thead>
<tr>
<th>EPR ID</th>
<th>Environmental Performance Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPR T1</td>
<td><strong>Optimise design performance</strong>&lt;br&gt;Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to:&lt;br&gt;• Minimise adverse impact on travel times for all transport modes, including walking and cycling&lt;br&gt;• Maintain, and where practicable, enhance the existing traffic movements at interchanges&lt;br&gt;• Design interchanges and intersections to meet relevant road and transport authority requirements&lt;br&gt;• Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths&lt;br&gt;• Work with relevant public transport authorities 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 North East Link&lt;br&gt;• Minimise loss of car parking in consultation with relevant local councils.</td>
</tr>
<tr>
<td>EPR T2</td>
<td><strong>Transport Management Plan(s) (TMP)</strong>&lt;br&gt;Prior to commencement of relevant works, develop and implement Transport Management Plan(s) (TMP) to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and bicycle movements and existing public facilities during all stages of construction.&lt;br&gt;The TMP must be informed and supported by an appropriate level of transport modelling and must include:&lt;br&gt;• Requirements for maintaining transport capacity in the peak periods&lt;br&gt;• Requirements for limiting the amount of construction haulage during the peak periods&lt;br&gt;• A monitoring program to assess the effectiveness of the TMPs on all modes of transport&lt;br&gt;• Where monitoring identifies adverse impacts, practicable mitigation measures</td>
</tr>
</tbody>
</table>
EPR ID | Environmental Performance Requirement
--- | ---
• Consideration of construction activities for other relevant major projects occurring concurrently with construction activities for North East Link and potentially impacting modes of transport in the same area
• Potential routes for construction haulage and construction vehicles travelling to and from the project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable
• Suitable measures, developed in consultation with emergency services, to ensure emergency service access is not inhibited as a result of project construction activities
• Provision of alternative parking where practicable to replace public and commuter parking lost as a result of project construction activities
• Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable
• Measures to ensure connectivity and safety for all transport network users during construction
• Consultation with VicRoads and relevant transportation authorities.

A TMP may be split into precincts where appropriate but must consider other precinct TMPs through the Transport Management Liaison Group as per EPR T3. TMPs must be submitted to the relevant authority for approval.

**EPR T3 Transport Management Liaison Group**

A Transport Management Liaison Group (TMLG) must be established and convene 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, emergency services, the project, relevant transportation authorities and relevant local councils.

The TMLG will be a forum for exchange of information and discussion of issues associated with Transport Management Plans. This must include review of proposed haulage routes for construction sites south of the northern tunnel portal to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes.
### EPR ID Environmental Performance Requirement

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

The TMLG must meet at least monthly until the completion of construction.

---

**EPR T4 Road safety design**

Undertake independent road safety audits after each stage of detailed design and after construction.

The project design and operational activities must meet all relevant road and transport authority requirements with respect to transport network user safety.

---

**EPR T5 Traffic monitoring**

Undertake traffic monitoring on selected roads (arterial and non-arterial) identified in consultation with the relevant transportation authorities and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete. As part of the selection process, consideration must be given to roads that carry public transport services. Implement local area traffic management works in consultation with the local relevant councils.

Develop and implement traffic performance management to monitor conditions during construction. Real time traffic information must be provided to drivers.

---

### 2.8. Project Background Summary

The foregoing sub-section contained in this chapter outlines the procedural steps involved in ultimately preparing and exhibiting an *Environment Effects Statement* for a corridor alignment and strategic design solution, developed through a structured process of investigation and evidential research. That process is diagrammatically summarised at Figure 2.6 on the following page.

Upon determining the preferred strategic design response through the Business Case, the Minister for Planning issued a *Public Works Order* describing the extent of the Project and key features which were required to be tested and evaluated under a formal environmental effects review process. The *Public Works Order* went on to describe and the review procedures and requirements which extended to include (but not limited to) a need to:

- Undertake a review of transport impacts associated with the Project,
- Develop, exhibit and finalise Project scoping requirements,
- Convene an inter-agency technical reference group (TRG) to advise DELWP and the North East Link Authority, as appropriate, on the scoping requirements as well as the adequacy of the EES technical studies, and
- Apply an appropriate peer review process.

Consistent with the Public Works Order, a Technical Reference Group (TRG) was established which included a range of agencies which have gone on to subsequently provide submissions on the exhibited EES. These groups included six of the seven effected local government areas (refer Section 2.4). Regular meetings were convened to develop Project scoping requirements as well as provide input on the technical work being completed and development of the reference design.

The scoping requirements are an important ballast for the Project to the extent that it serves as an important reference or guide on the depth of detail required in any review as well as help calibrate the extent of complementary measures which might be either included or excluded as part of the Project.

Figure 2.6: Project Process Flow Diagram
3. STRATEGIC POLICY REVIEW

3.1. Preamble

The Environment Effects Statement sets out the legislative and policy framework upon which this Project needs to be considered in Chapter 2, Sub-Section 4. These documents vary from legislative frameworks enacted by the Victorian Parliament to various policy positions which have been informed by a specialist evidence base, research and consultation.

These policy documents have been considered at Section 3 of the TTIA\textsuperscript{11} and have been reviewed further by my office in compiling this Evidence Statement and its findings. Some submissions provided in the Project have raised concern over potential alignments and / or misalignments with these strategic position papers.

To assist with IAC with its consideration of the Project, the following sections provide a summary of the extent of alignment or otherwise the Project has with key policies and strategies.

3.2. Transport Integration Act (2010)

For evaluation purposes, guidance on the development and expansion of the Victorian transport system is derived from various policies, in particular the Transportation Integration Act (2010) which sets out a range of principles and objectives which help guide the appropriateness of this Project.

The Transport Integration Act (2010) came into effect on 1 July 2010 and is Victoria’s principal transport statute. The Act requires that all decisions affecting the transport system be made within the same integrated decision-making framework and support the same objectives. The Act recognises the aspirations of Victorians for an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible state. Logically, numerous other policies and strategies help guide decisions made within the framework of this document.

The Transport Integration Act (2010) sets out the following purpose and vision statement:

\textbf{Purpose:}

“The purpose of this Act is to create a new framework for the provision of an integrated and sustainable transport system in Victoria consistent with the vision statement.”

\textbf{Vision Statement:}

“The Parliament recognises the aspirations of Victorians for an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible State.”

\textsuperscript{11} (Transport and Traffic Impact Assessment, 2019, p. 19)
Beyond the purposes and vision statement, the Transport Integration Act (2010) sets out a range of transport system objectives. These are reproduced below.

1. Social and Economic Inclusion,
2. Economic Prosperity,
3. Environmental Sustainability,
4. Integration of Transport and Land Use,
5. Efficiency, Coordination and Reliability,

Based on the research and investigations undertaken in the both the preparation of the GTA Peer Review Report and this Evidence Statement, a review has been completed of the Project’s strategic alignment with the objectives outlined above in the Transport Integration Act (2010). This comparison is provided at Table 3.1 and indicates a range of strong and partial alignments. Where a cell is blank, it has been determined that the project either does not align with a specific objective or does not align strongly enough to warrant population.

Table 3.1: Alignment Review b/w the Project and the Transport Integration Act Policy Objectives

<table>
<thead>
<tr>
<th>Policy Objectives</th>
<th>Policy Objective Sub-Category Considerations</th>
<th>Alignment Assessment (Partial or Yes)</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social and Economic Inclusion</td>
<td>1. Remove barriers to access</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. + Respond to user expectations</td>
<td>Y</td>
<td>Removes demand including freight demand on local and arterial roads and improves reliability and efficiency.</td>
</tr>
<tr>
<td></td>
<td>b. + Make transport more widely available</td>
<td>Y</td>
<td>Removes demand on local and arterial roads, includes additional active travel facilities and more reliable and efficient public transport services.</td>
</tr>
<tr>
<td></td>
<td>c. + Improve transport affordability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social and Economic Inclusion</td>
<td>2. Build capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. + Engage and collaborate in planning and delivery</td>
<td>Y</td>
<td>Local Government have been involved in the planning process as well as submissions.</td>
</tr>
<tr>
<td></td>
<td>b. + Support others to take action on transport challenges</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. + Create a positive legacy</td>
<td>P</td>
<td>Promotes economic growth in the north east and reduces freight traffic in neighbourhoods. Promotes active travel in the north east.</td>
</tr>
<tr>
<td>Policy Objectives</td>
<td>Policy Objective Sub-Category</td>
<td>Alignment Assessment (Partial or Yes)</td>
<td>Rationale</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------</td>
<td>---------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>4.</strong> Improve access to work and education</td>
<td></td>
<td>Y</td>
<td>Improves household access to education and jobs.</td>
</tr>
<tr>
<td><strong>5.</strong> Support business clustering</td>
<td></td>
<td>Y</td>
<td>Promotes land use change along the corridor and improves freight efficiencies by providing an accessible HPFV network.</td>
</tr>
<tr>
<td><strong>6.</strong> Provide value for money infrastructure and services</td>
<td></td>
<td>Y</td>
<td>Highest and best BCR compared with other strategic interventions.</td>
</tr>
<tr>
<td><strong>7.</strong> Improve business access to market</td>
<td></td>
<td>Y</td>
<td>Improves access to labour, goods and services.</td>
</tr>
<tr>
<td><strong>8.</strong> Keep transport cost down</td>
<td></td>
<td>Y</td>
<td>Reduces freight running costs due to improved connectivity with lower travel times and greater travel time reliability.</td>
</tr>
<tr>
<td><strong>9.</strong> Reduce distances travelled to access people places and goods</td>
<td></td>
<td>Y</td>
<td>Improves household connectivity to education and jobs and improves business access to labour markets including the La Trobe NEIC and a range of Metropolitan Activity Centres.</td>
</tr>
<tr>
<td><strong>10.</strong> Make transport activity more resource-efficient and reduce its environmental impacts</td>
<td></td>
<td>P</td>
<td>Additional public transport (P&amp;R) active travel facilities as well as increased public transport frequency opportunities. The Project does increase opportunities for more (private) car-based travel.</td>
</tr>
<tr>
<td><strong>11.</strong> Use environmentally sustainable transport more</td>
<td></td>
<td>P</td>
<td>Additional and upgraded active travel and public transport facilities form part of the Project.</td>
</tr>
<tr>
<td><strong>12.</strong> Make transport infrastructure more resource-efficient and reduce its environmental impacts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>13.</strong> Make transport resilient to climatic extremes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>14.</strong> Provide for effective integration of transport and land use and facilitate access to social and economic opportunities</td>
<td></td>
<td>Y</td>
<td>Supports forecast land use change and uplift estimated by the Victorian government and improves household access to education, jobs and services.</td>
</tr>
<tr>
<td><strong>15.</strong> Without limiting (14), transport and land use be integrated to improve accessibility and transport efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. + Maximise access to residences, employment, markets, services and recreation</td>
<td></td>
<td>Y</td>
<td>Improves household access to education, jobs and services as well as improve business access to labour markets.</td>
</tr>
<tr>
<td>b. + Planning and developing the transport system more effectively</td>
<td></td>
<td>Y</td>
<td>Completes the orbital road network to optimise economic growth in the north east.</td>
</tr>
<tr>
<td>c. + Reducing the need for private motor vehicle transport and the extent of travel</td>
<td></td>
<td>P</td>
<td>Additional Active Travel facilities and improved bus network operation by removing demand from the local arterial network and increasing potential frequencies with a new busway.</td>
</tr>
<tr>
<td>d. + Facilitating better access to and greater mobility within local communities</td>
<td></td>
<td>Y</td>
<td>Improves household access to education and jobs and improves business access to labour markets by decreasing traffic.</td>
</tr>
<tr>
<td>Policy Objectives</td>
<td>Policy Objective Sub-Category Considerations</td>
<td>Alignment Assessment (Partial or Yes)</td>
<td>Rationale</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------</td>
<td>--------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>16.</td>
<td>Without limiting (14) transport system and land use be aligned, complementary and supportive and ensure that</td>
<td></td>
<td>demand including freight demand on local arterial roads.</td>
</tr>
<tr>
<td></td>
<td>a. + transport decisions are made having regard to current and future impact on land use</td>
<td>Y</td>
<td>Strategic modelling looks at a future planning horizon which includes land use change and uplift in broader Melbourne between now and 2036.</td>
</tr>
<tr>
<td></td>
<td>b. + transport decisions are made having regard to current and future development and operation of the transport system</td>
<td>Y</td>
<td>Strategic modelling allows for future planned network upgrades between now and 2036.</td>
</tr>
<tr>
<td></td>
<td>c. + transport infrastructure and services are provided in a timely manner to support changing land use and associated transport demand</td>
<td>P</td>
<td>Strong underlying demand already exists for the Project. Future land use change and growth will exacerbate this need.</td>
</tr>
<tr>
<td>17.</td>
<td>Without limiting (14) improve the amenity of communities and minimise impacts of the transport system on adjacent land uses</td>
<td>Y</td>
<td>Removes household, commuter and freight trips off local and arterial roads.</td>
</tr>
<tr>
<td></td>
<td>a. + Optimise the network capacity of all modes and reduce journey times</td>
<td>Y</td>
<td>Removes demand from local and arterial roads whilst improving travel times and reliability for household, commuter and freight trips.</td>
</tr>
<tr>
<td></td>
<td>b. + Maximise the efficient use of resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. + Facilitate integrated and seamless travel</td>
<td>P</td>
<td>Delivers an integrated orbital road network around metropolitan Melbourne.</td>
</tr>
<tr>
<td></td>
<td>d. + Provide predictable and reliable services and journey time and minimize any inconvenience caused by disruptions to the transport system</td>
<td>Y</td>
<td>Improves travel times and reliability for household, commuter and freight trips and increases overall network resilience and redundancy.</td>
</tr>
<tr>
<td>18.</td>
<td>Facilitate network-wide efficient, coordinated and reliable movements of persons and goods at all times</td>
<td>Y</td>
<td>Improves travel times and reliability for household, commuter and freight trips.</td>
</tr>
<tr>
<td>19.</td>
<td>Without limiting (18) transport system should</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Improve safety performance</td>
<td>Y</td>
<td>Moves vehicles from local and arterial roads to a freeway where there are lower crash rates per kilometres travelled.</td>
</tr>
<tr>
<td>21.</td>
<td>Minimise the risk of harm to persons</td>
<td>Y</td>
<td>Moves vehicles from local and arterial roads to a freeway where there are lower crash rates per kilometres travelled.</td>
</tr>
<tr>
<td>22.</td>
<td>Promote sustainable transport</td>
<td>P</td>
<td>Additional active travel facilities. The Project is however primarily a road project which will support increased motorised transport activity.</td>
</tr>
</tbody>
</table>

### 3.3. Plan Melbourne

Plan Melbourne will help shape the growth of Melbourne over the next 30 years. The plan visualises an integrated transport system connecting people to jobs and services efficiently and reliably. Plan
Melbourne details the need to keep up with the predicted growth of Melbourne population, which will require a range of interventions including a major investment in transport.

Within Plan Melbourne there are seven outcomes, followed by directions and strategies that are in place to help achieve this. North East Link aligns with a range of the seven outcomes and many of the directions and strategies. The two key outcomes and subsequent directions that the Project aligns with are listed below:

- **Outcome 1 – Melbourne is a productive city that attracts investment, supports innovation and creates jobs**
  - Direction 1.1 – Create a city structure that strengthens Melbourne’s competitiveness for jobs and investment
  - Direction 1.2 – Improve access to jobs across Melbourne and closer to where people live

- **Outcome 3 – Melbourne has an integrated transport system that connects people to jobs and services and goods to market**
  - Direction 3.1 – Transform Melbourne’s transport system to support a productive city
  - Direction 3.3 – Improve local travel options to support 20-minute neighbourhoods
  - Direction 3.4 – Improve freight efficiency and increase capacity of gateways while protecting urban amenity

In addition to the above, Plan Melbourne refers directly to NEL in the below passages:

- **A map of Melbourne 2050 Plan – North East Link is indicatively drawn following an alignment similar to the one proposed as part of the EES. This is shown as part of the assessment around ‘Potential Transport Infrastructure Projects’. The relevant exert from Melbourne 2050 Plan is reproduced on the following page at Figure 3.1.**

- **Policy 3.1.5 Improve the efficiency of the motorway network** – This policy talks to the productivity and liveability of a city by efficiently moving high volumes of people and goods over long distances.
  
  “Optimisation of the existing motorway network will be achieved through the use of technology and new and upgraded connections, including consideration of how to fill the missing North East Link on the Metropolitan Ring Road.”

- **Policy 3.4.1 Support sufficient gateway capacity with efficient landside access** – This strategy is about increasing the capacity of the land based freight network.
  
  “Long-term future projects, such as North East Link and the Outer Metropolitan Ring Road, may form part of the expanse of the freight network.”
Figure 3.1: Plan Melbourne – Melbourne 2050

Map 2

Melbourne 2050 Plan

Source: Department of Environment, Land, Water and Planning

12 (Plan Melbourne, 2017 - 2050, 2017, p. 16)
3.4. Victorian Freight Plan: Delivering the goods

The Victorian Freight Plan, delivering the goods, Department of Transport 2018 is state-wide freight plan for Victoria to support the movement of goods now and in the future. The plan has outlined four key objectives:

- Reducing the cost of doing business
- Improving the efficiency of moving freight while minimising adverse impacts
- Better connecting Victorian businesses with their local, interstate and export markets
- Providing sufficient future capacity

It also outlines five priority areas and their actions to achieve these objectives whilst also preparing the state for the challengers that lie in the future. Two relevant priority areas are:

- Manage existing and proposed freight corridors and places in conjunction with urban form changes
- Reduce the impact of congestion on supply chain costs and communities

On a strategic level, NEL will assist in delivering all four of the key objectives:

It reduces cost of doing business by improving travel times and efficiency between the northern and eastern suburbs. It minimises adverse impacts of moving freight by removing trucks off local roads. The interchanges into key arterial roads will provide key freight routes for local business whilst providing more freight capacity in the overall network.

NEL has been specifically mentioned in the document, as it is marked as a Major Investment and is a specific action in Priority 1 under the subsection Expand the HPFV network.

3.5. Victorian Cycling Strategy 2018-28

The Victorian Cycling Strategy 2018-28, Transport for Victoria 2017 sets out a vision for the future of cycling in the state and a pathway to deliver it. The strategy has two major goals with one being relevant to the Project:

Goal 1: Invest in a safer, lower stress, better-connected network.

Within that goal there are a number of Strategic Approaches that NEL will assist in delivering, these strategic approaches include:

- Provide a lower-stress cycling experience – by removing cycling paths off roads.
- Prioritise strategic cycling corridors (SCCs) for investment – by providing a segregated SUP between Greensborough and Bulleen. This will potentially qualify as a new SCC.
- Integrate cycling and public transport – the new SCC will integrate with new and existing public transport infrastructure.
• Incorporate new cycling infrastructure in major transport projects.

3.6. Australian Infrastructure Plan and Infrastructure Priority List 2019

The Australian Infrastructure Plan, Infrastructure Australia, 2019 provides an investment plan for Australia, outlining the challenges and opportunities as well as the solutions needed to ensure Australia is prepared for the future. Four headline aspirations are identified in the plan:

• Productive cities, productive regions
• Efficient infrastructure markets
• Sustainable and equitable infrastructure
• Better decisions and better delivery.

North East Link is one of three New High Priority Projects in 2019 for Infrastructure Australia. Infrastructure Australia have identified the North East Link as the ‘missing link’ between the M80 Metropolitan Ring Road and the M3 Eastern Freeway. They also identified how the current route between Rosanna Road, Greensborough Road and others is approximately 9.5km, congested and operating at or near capacity which limits commercial and freight activities.

The Plan goes on to recognise that NEL is required in response to population growth and the future planned future expansion of industrial precincts which will ultimately increase the number of orbital trips on the network.

It also gives a brief overview of the what the Project is and the benefits. The benefits are reproduced below:

“The project is expected to deliver large economic benefits, including travel time and reliability improvements, and environmental and safety benefits.”

3.7. Victoria’s 30-Year Infrastructure Strategy

With reference to their website, Infrastructure Victoria provides advice to government on specific infrastructure matters. The advice sought includes:

• Assessment of any major infrastructure projects proposed by government or the private sector (market-led proposals)
• Intergovernmental submissions
• Government’s infrastructure plans.

Infrastructure Victoria developed the state’s first ever 30-year infrastructure strategy in 2016.

“This state-wide, evidence-based strategy covers all types of infrastructure and was developed in consultation with stakeholders and the community.”

13 (30 Year Strategy, n.d.)
This strategy was prepared to advise the State Government on required infrastructure projects to ensure Victoria is prepared for planned growth.

The document includes a total of 137 recommendations and North East Link is recognised as a high priority project. In the strategy Infrastructure Victoria have highlighted 19 different needs, some of the key needs North East Link aligns with are reproduced below:

- Need 1: Address infrastructure demands in areas with high population growth
- Need 11: Improve access to middle and outer metropolitan major employment centres
- Need 13: Improve the efficiency of freight supply chains

Infrastructure Victoria refers directly to North East Link in two strategy recommendations which are:

- 11.5 Build new transport links to enhance the accessibility of the major employment centres
- 13.5 Increase the capacity and connectivity of Victoria’s freight transportation network

In both recommendations it states:

“this link would enhance access to major employment centres, particularly the La Trobe NEC and the Epping, Ringwood and Broadmeadows MACs, through improved orbital road connectivity and improve the capacity of the freight network, particularly from the southeast and Gippsland”.
4. REQUEST FOR INFORMATION

4.1. Preamble

In reviewing submissions, a range of issues necessitated the requirement for further analysis and background from the project technical team. A high-level summary of the additional information sought by GTA is set out below including those which have been received and those currently under development.

Where memorandum’s have been received, these are attached at Appendix D, these include:

- Response to GTA Primary Peer Review Report
- Response to GTA Microsimulation Modelling Report
- Watsonia Station Alternate Design Technical Analysis
- Nell Street, Watsonia Local Street Closure Impacts
- Eastlink (Mullum Mullum and Melba) Tunnel Performance Review
- Greensborough Bypass / Diamond Creek / Civic Drive Roundabout Performance Review

4.2. Memoranda Summaries

4.2.1. Response to GTA Peer Review Report

As outlined earlier in this report, GTA prepared a peer review of the TTIA. In performing the peer review, GTA reviewed iterative versions of the TTIA. Matters identified by GTA that required further clarification or revision were provided to the project team co-ordinating and preparing the TTIA to enable these matters to be responded to or addressed.

Upon receipt of additional information from the NEL project team, issues raised by GTA have either been resolved, or in the instance where practical, investigated independently to ensure that the potential impact of the matter was low. Any remaining items of concern were captured as recommendations. Upon issue of the final TTIA peer review report to SmedTech via Clayton Utz on 13 February 2019 there were three outstanding recommendations for further analysis.

SmedTech have prepared a memo, dated 13 June 2019, that responds to the outstanding recommendations from the GTA report. The SmedTech responses have been reviewed by the team who assisted with the peer review of the TTIA and believe all substantive recommendations have now been adequately resolved. The following section provides a summary of the GTA response to SmedTech’s memorandum.
Recommendation One: Watsonia Road Sensitivity Test

Original GTA Recommendation

A sensitivity test for Watsonia Road be considered which reflects the attractiveness of this route between its intersection with Grimshaw Street and Greensborough Road.

SmedTech Response

SmedTech conducted a sensitivity test and found that signal phasing adjustments could be used to mitigate the predicted increases in traffic along Watsonia Road as a result of North East Link by up to 40%.

The memo concluded with: “However, these treatments may cause other adverse impacts, such as additional traffic on Greensborough Bypass and additional travel time for local residents and businesses accessing Watsonia Road. These impacts would need to be carefully assessed alongside the benefits of reducing through traffic on Watsonia Road.”

GTA response

The intent of the sensitivity test was to refine and explore implications on Watsonia Road if changes were made to manage through or non-local traffic.

The results of the sensitivity test demonstrate that it is possible to implement interventions which reduce through traffic on Watsonia Road. I am satisfied that if the uplift in traffic volumes reported in the TTIA were to eventuate, then there are options available to mitigate the potential impacts. These options extend beyond green time adjustments and could include a range of treatments which reduce speed on this link including direct posted speed reductions, intersection control variations, vertical attenuation devices and other pedestrian prioritisation measures which increase travel time on the route.

Recommendation Two: Avon Street Access

Original GTA Recommendation

It is recommended the TTIA and Reference Design explore left-in / left-out arrangements to and from Avon Street at Bulleen Road.

SmedTech Response

SmedTech assessed the potential to implement a left-in / left-out arrangement at Avon Street and suggested that it is undesirable for the following reasons:

- as it would require the left-in / left-out treatment to be placed within a signalised intersection, creating confusion with respect priority
- as it may not eliminate potential rat-running as drivers could drive around the island to access the NEL ramps
• fully signalising the intersection would reduce performance along Bulleen Road and the NEL interchange ramps.

GTA Response

The memorandum sets out further explanation which on balance appears reasonable if the reference design interchange layout is delivered and Avon Street sits within the Bulleen Road off-ramp where it would require separate and independent signal control and could be subject to non-compliance by drivers using it as a short-cut to access NEL.

On the use of Thompsons Road as an alternate route from the south, I am of the view that it is more likely that drivers will rely on Bulleen Road, use Manningham Road and perform a U-turn at Carrathool Street. This observation is largely inconsequential to the extent that at least two arterial road options are available to residents located within Avon Street.

Recommendation Three: Bulleen Park and Ride details

Original GTA Recommendation

Commentary is provided on the proposed Bulleen Road Park and Ride facility including estimated number of car parking bays, general facilities and proposed access arrangements for general traffic and bus traffic.

SmedTech Response

SmedTech advised there was limited detail on the park and ride as it was not provided in the scope in the EES project description documents. SmedTech’s memorandum response provides details of the assumptions made in the microsimulation modelling of the impacts of the park and ride, including:

• Approximately 300 – 400 parking spaces
• Designed to accommodate up to 140 buses per hour (per direction) in peak periods
• Access between the neighbouring Manningham Club and Thompsons Road to be maintained
• General traffic access to/from the park and ride to be from Thompsons Road
• Bus traffic access via an at-grade intersection between the Doncaster Busway and Thompsons Road
• Westbound buses along Thompsons Road would use a dedicated diverge lane from Thompsons Road to join the Busway, while eastbound buses from the Park and Ride will turn left from the facility onto Thompsons Road

The memo also clarifies that the Department of Transport (DoT) is responsible for determining the following:

• Car and bicycle parking provision
• Bus stop design and bay provision
• Access points for buses, private vehicles and bicycles, and
• General facilities, including station buildings, ticketing, signage and drop-off zones.

**GTA Response**

The intention of the peer review recommendation was to ensure sufficient detail was provided to appreciate the potential impacts of the Bulleen Park and Ride facility. I am satisfied that, despite an absence of detail in the TTIA, the traffic impacts of the Bulleen park and Ride have been assessed within the EES microsimulation modelling.

After reviewing the additional information received and considering the reference design, as well as further discussions with the Project team, I consider it appropriate that the proposed Bulleen Park and Ride facility include traffic access which supports movement from the facility south of the Eastern Freeway without having to circumnavigate the Bulleen sub-regional area.

On options to improve egress access to the south, I understand that including a right turn exit onto Thompsons Road will adversely impact on the performance of Thompsons Road and more particularly the busway which involves priority access for up to 140 buses per hour (per direction) at the request of DoT.

Based on my appreciation of both network opportunities and constraints, I recommend that traffic access to the Bulleen Park and Ride include a link to Bulleen Road through an extension of a new network of streets proposed to land use north via the new the new set of traffic signals shown in the reference design or as an independent left-in/left-out access. The configuration of those proposed signals (if relied upon) will need to be reviewed if this change is supported by the IAC.

**Figure 4.1: Vehicle access to Bulleen Park and Ride**

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14 (Environmental Effects Statement Map book, 2019, p. 32)
4.2.2. Response to GTA Micro-simulation (Operations) Model Report

GTA prepared a peer review of the microsimulation model used to inform the TTIA. In performing the peer review, as GTA identified matters that required further clarification or revision, they were provided to SmedTech to enable the matters to be responded to or addressed.

Upon receipt of additional information from SmedTech, any issues raised by GTA have either been resolved, or recommendations originally made, updated. Upon issue of the final peer review report to SmedTech via Clayton Utz on 8 October 2018 there were 10 outstanding recommendations for either further action or requests for more information.

SmedTech have prepared a memo, dated 13 June 2019, that responds to the outstanding recommendations from GTA’s report. The SmedTech responses have been reviewed by the team who assisted with the peer review of the microsimulation model, and we are now satisfied that SmedTech have adequately responded to all GTA requests.

Table 4.1: GTA response to SmedTech memorandum on outstanding microsimulation peer review recommendations

<table>
<thead>
<tr>
<th>ID</th>
<th>GTA Response to SmedTech Memorandum</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation One V2</td>
<td>The response indicates that a review was completed investigating the impacts and interference of Hoddle Street on the Project corridor. This review revealed that whilst long queues are generated at the Hoddle Street exit eastward along the Freeway network, these queues are sufficiently quarantined from model extents. A check and comparison of 2017 and 2036 modelled outcomes indicates that average speeds on the Eastern Freeway remain close to posted speed limits during peak periods immediately west of Chandler Highway consistent with those reported in the EES.</td>
<td>No further action required.</td>
</tr>
<tr>
<td>Recommendation Two V2</td>
<td>The response shows that adequate measures were undertaken to ensure survey days were reflective of the time period which satisfies GTA’s recommendation.</td>
<td>No further action required.</td>
</tr>
<tr>
<td>ID</td>
<td>GTA Response to SmedTech Memorandum</td>
<td>Status</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td>It is stated that the raw data is available on file however there is no evidence that 2012 data for the M80 model is relevant for 2017 conditions. It is understood that the model was deemed suitable by VicRoads for use by scaling counts using historical data.</td>
<td>No further action required.</td>
</tr>
<tr>
<td></td>
<td>Response doesn’t respond to the intent of the recommendation. It is intended that documentation and reasoning behind adjustments to the model are made available upon request, not to calibrate the model in accordance with community consultation. The potential impact of the issue is minor, so I believe that no further action is required.</td>
<td>No further action required.</td>
</tr>
<tr>
<td></td>
<td>The TTIA has been updated in accordance with GTA’s recommendation to remove the potential of confusion for the reader.</td>
<td>No further action required.</td>
</tr>
<tr>
<td></td>
<td>Information provided appears reasonable to respond to the recommendation.</td>
<td>No further action required.</td>
</tr>
<tr>
<td></td>
<td>Documentation provided in the driver behaviour memo in conjunction with edits outlined in response 12 would indicate that sufficient explanation of driver behaviour has been undertaken, noting that GTA have not been provided or reviewed the latest models.</td>
<td>No further action required.</td>
</tr>
<tr>
<td></td>
<td>The response given to recommendation 12 is in line with GTA’s expectations, however, it is noted that GTA have not been provided with updated copies of the model and therefore are unable to confirm the adjustments have been made. It would be in GTA’s expectations that the same behaviour types are used in both the project and no project scenarios which GTA are unable to confirm.</td>
<td>No further action required.</td>
</tr>
</tbody>
</table>
The information provided in the updated TTIA confirms the same capacity constraining methodology was applied consistently across the 'no project' and 'with project' cases.

On review, sufficient information has been provided in the reports and the process of constraining future trips is considered acceptable.

In the event that the applied methodology is conservative on the high side (i.e. less demand eventuates in the shoulder peaks), the same result would broadly apply to both the 'with project' and 'no project outcomes' with shorter peak periods overall. As a result, the relativity of outcomes between the 'with project' and 'no project' results would likely remain unchanged.

Generally, the profiling procedure used appears reasonable.

4.2.3. Watsonia Station Alternate Design Technical Analysis

The Watsonia alternate design was released on the Project website but was not assessed as part of the EES technical report. To form a position on the alternate design, additional information was requested from the Project team on both the configuration and transport (operations) modelling implications.

A memorandum was prepared by SmedTech, dated 11 July 2019, which presented a background on the motivation for preparing an alternate design and the design features, along with the results of the microsimulation modelling.

The key issue the alternate design was seeking to resolve was a lack of connectivity to the Watsonia Activity Centre from the east and high traffic volumes on Greensborough Road creating a barrier for east-west movement.

The main design changes between the EES design and the alternate design are summarised at Table 4.2.
### Table 4.2: Summary of design changes between Watsonia EES and alternate designs

<table>
<thead>
<tr>
<th>Design Aspects</th>
<th>EES design</th>
<th>Alternate Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elder Street</td>
<td>Left and right-in / left-out off Greensborough Road, requiring drivers head south to the intersection with Watsonia Road before heading north</td>
<td>Full signalised intersection with all movements possible between Elder Street and Greensborough Road</td>
</tr>
<tr>
<td>Watsonia Station car park access</td>
<td>Access via Watsonia Road in via roundabout with limited space for queuing</td>
<td>Access via Greensborough Road with significant queuing opportunities</td>
</tr>
<tr>
<td>Pedestrian connectivity to Watsonia Station</td>
<td>Provided via an overpass south of Elder Street</td>
<td>At-grade signalised intersection with Elder Street</td>
</tr>
<tr>
<td>Pedestrian connectivity to Watsonia Road shops</td>
<td>Provided via overpass south of Elder Street, and at-grade signalised intersection at Watsonia Road requiring pedestrians’ cross multiple legs</td>
<td>At grade signalised intersection at Elder Street, and simplified at-grade signalised intersection at Watsonia Road</td>
</tr>
<tr>
<td>Project performance requirements</td>
<td>All intersections perform at LOS D or better.</td>
<td>All intersections perform at LOS D or better.</td>
</tr>
</tbody>
</table>

#### Daily traffic volumes

<table>
<thead>
<tr>
<th>Road</th>
<th>EES Design (vpd)</th>
<th>Alternate Design (vpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watsonia Road</td>
<td>19,000 – 25,000</td>
<td>19,000 – 25,000</td>
</tr>
<tr>
<td>Elder Street</td>
<td>5,000 – 7,000</td>
<td>6,000 – 8,000</td>
</tr>
<tr>
<td>Greensborough Road (south of Watsonia Road)</td>
<td>39,000 – 50,000</td>
<td>38,000 – 49,000</td>
</tr>
</tbody>
</table>

The intersection performance for key intersections in the vicinity are summarised at Table 4.3.
Table 4.3: Summary of 2036 ‘with project’ intersection performance compared between Watsonia EES and alternate designs

<table>
<thead>
<tr>
<th></th>
<th>EES AM Peak</th>
<th>Alternate AM Peak</th>
<th>EES PM Peak</th>
<th>Alternate PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First hour</td>
<td>Second hour</td>
<td>First hour</td>
<td>Second hour</td>
</tr>
<tr>
<td>Grimshaw Street</td>
<td>D</td>
<td>D</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Interchange</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watsonia Road</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Interchange</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elder Street</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Intersection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reviewing the designs including their layout and configuration, and the details contained in both Table 4.2 and Table 4.3, the Watsonia alternate design provides ‘on-balance’ a preferred transport outcome. Whilst I appreciate both designs are ‘reference designs’, the exercise as well as consideration of valid submissions around the environment and performance of Watsonia Road demonstrates that when progressing detailed design, the following is recommended:

- **Station (and commuter) car park access** should be directed to Greensborough Road, as access via Watsonia Road is likely (despite) memorandum estimates, deliver higher daily traffic demands than necessary within the Activity Centre noting the car park for commuters will be somewhere in the order of 400+ car spaces.

- **Access via the Devonshire Road roundabout** with a single circulating lane has limited redundancy and any upgrade of the roundabout if performance predictions and analysis was different to that documented would involve a significant cost upgrade given the intersection sits on structure above the Hurstbridge Railway Line.

- **It is preferred that intersections within Activity Centre’s are simplified and carry low levels of traffic activity to support access and reduce delays for pedestrians and cyclists.**

- **Elder Street serves an important collector road role and direct access between it and the Station should be retained to reduce access times.**

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• An at-grade pedestrian and cyclist crossing should be provided to the station, in recognition of the significant volumes of pedestrians and cyclists accessing the station. The existing condition surveys in the TTIA show that both Elder Street and Watsonia Station overpass have over 300 pedestrians per hour in their peak\(^{16}\). At-grade crossing are generally more direct and inclusive. Modelling indicates that these pedestrian demands can be satisfactorily managed across Greensborough Road under the Alternate Design.

• A pedestrian and cyclist overpass, similar to that proposed in the EES design would be an appropriate enhancement in addition to the at-grade crossing to support east-west access between the Watsonia Activity Centre and the residential area west of Greensborough Road. For people arriving from further afield and utilising the shared use path, this will likely decrease travel time and delays accessing the Watsonia Activity Centre. It is important to note that pedestrian demands across Greensborough Road would not meet relevant warrants for a grade separated treatment.

\(^{16}\) (Transport and Traffic Impact Assessment, 2019, p. 159)
5. EES SUBMISSIONS REVIEW

5.1. Preamble to Submissions

The EES was publicly released on 10 April 2019 and was available for public submissions until 7 June 2019. Eight hundred and seventy-four (874) submissions were received from a range of organisations including Councils, agencies, community groups and individuals.

I have reviewed and considered all submissions where issues around traffic and transport were raised. The submissions canvassed a range of issues in relation to the Project need, alignment and design, construction and post implementation operation.

Given the volume of responses and consistent with the GTA Peer Review Report, I have sought to reproduce and responded to issues considered to be of greatest potential concern to the project and consequently the IAC.

For matters raised by a state government department or agency, local government organisation or key stakeholder group, I have responded to each matter individually. Matters raised by members of the public have been grouped into themes, and I have responded to those developed themes.

The matters raised have either been listed as a ‘concern’ or a ‘request or recommendation’. They have been allocated a unique response number for reference, with ‘C’ numbers denoting ‘concerns’ and ‘R’ numbers denoting ‘requests or recommendations’.

Where I have observed overlaps in matters raised, I have sought to provide a summary of the matter raised by the submitter, to provide the IAC with transparency of issues. However, I have only responded to the matter the first time it’s raised, with all other responses referring back to the original response’s unique ID.

In responding to matters, I have sought to provide a description of the issue raised and then determine whether the impacts of the issue can be adequately managed through EPRs or require a modification in some form to the Project. Consistent with the original peer review process as issues or concerns have been flagged which require management, I have sought to test the strength and adequacy of the EPR’s. This has been done on a repeated (and looped) basis throughout this review and where appropriate, modifications recommended to the EPR’s to ensure project risks are adequately managed.

Reflecting the above, this section is structured to review elements in the following order:

- EES Scope and Reach
- State Government Departments and Agencies
- Local Government
• Key Stakeholder Groups
Followed by grouped themes as follows:
• Project Design
• Post Implementation
• Public Transport
• Active Transport
• Construction

5.2. **EES Scope and Reach**

5.2.1. **Selected Study Area**

Various submissions raised concern regarding the extent and breadth of the selected study area for the Project. Section 3.1 of the GTA Peer Review Report undertakes an assessment of the adequacy of the analysed study area and that document can be reviewed for a fuller explanation on this issue.

The GTA Peer Review Report reproduces the study area boundaries for both the strategic and corridor model assessments. That assessment found the selected study area (with an emphasis on the corridor model(s)) to be ‘fit-for-purpose’ subject to the inclusion and satisfactory replication of operating effects at the western end of the Eastern Freeway with Hoddle Street.

More broadly, I have expressed a view previously (as part of the Westgate Tunnel Project assessment) that as a guide, operational models should consider the corridor (Project) itself as well as the first major traffic node on either side of the corridor. By way of extension, this review should have regard to predicted strategic model forecasts which identify either an increase or decrease in transport demand. On this test, adjacent nodes could be either included or excluded depending on which of the two outcomes are predicted.

I am satisfied that the EES technical review generally adopts this methodology, except to note that at the north-east corner of the Project, it would be prudent to include analysis for the intersection of Greensborough Bypass, Diamond Creek Road and Civic Drive. Further discussion on this is provided later in this report.

5.2.2. **Transport Forecasting Process & Robustness**

A range of submissions have expressed concern with traffic demand forecasting relied upon to develop the Project reference design. On this issue, I set out earlier in my Evidence Statement that I will rely on others with suitable experience in this specialist field to provide comments on the adequacy and robustness of the strategic model forecasts which were subsequently relied upon to inform the corridor model (micro-simulation) assessments.
5.3. Response to Government Departments and Agencies

As outlined in Section 2.5, a Technical Reference Group (TRG) was established in February 2018, with representation from impacted government departments and agencies such as Transport for Victoria, Public Transport Victoria, VicRoads, VicTrack, DHHS and DELWP. As such, these departments and agencies have been involved in formulating the Scoping Requirements, highlighting their applicable policies, strategies and statutory provisions and reviewing and engaging with the technical study authors.

The following section outlines the relevant submissions received from government departments and agencies noting that for the most part, and logically given their continued involvement through the development if the EES, the submissions reflect a general level of support for the Project.

5.3.1. VicTrack (Submission 652)

VicTrack prepared a submission which expressed support for the Project. As a major custodial landowner in the vicinity of the Project corridor, VicTrack’s submissions outlined a range of requests for consideration.

R1. VicTrack is the custodial owner of 29,100 sqm of land located around the Victoria Park station between the Victoria Park playing ground and Hoddle Street. VicTrack highlights the Plan Melbourne and Yarra Council’s adopted Johnston Street Local Area Plan, which both state the potential for the area for urban renewal. VicTrack also recognise the potential for urban renewal, should the site not be required for transport. They recommend that future transport planning should be judicious in relation to encroachment on this site to avoid negative impacts on the site’s potential for urban renewal. VicTrack recognise that the Project is a reference design and wish to be consulted and offered the opportunity to comment on any proposed changes to the design.

The EES outlines the optineering completed during the development of the busway alignment. Transport for Victoria (now Department of Transport (DoT)) advised the busway was to connect directly to Hoddle Street, however, wishes to preserve an option for a potential future link from the Eastern Freeway busway to Victoria Park railway station17.

Given DoT’s request to connect directly to Hoddle Street, the land parcel at Victoria Park is not likely to be impacted by the Project. In the event that a material change was to occur, which could prejudice the urban renewal of Victoria Station, it would be appropriate for contact to be made with VicTrack and DoT to allow for a commensurate level of input and feedback.

Given the specificity of this requirement, I would expect that this detail would most suitably be considered as a requirement of any contract issued for the Project.

17 (North East Link Environmental Effects Statement, 2019, pp. 6-53)
5.3.2. Department of Transport (Submission 737)

The Department of Transport (DoT) prepared a submission in support of the Project. The submission outlined the recent incorporation of VicRoads and Public Transport Victoria (PTV) into DoT, reaffirmed their involvement in the development of the Project through the TRG and outlined the relationship of DoT to the Major Transport Infrastructure Authority (MTIA) which is the proponent to the Project. DoT’s submission also highlights their role in assessing and responding to submissions, stating: “this includes providing clarity on transport-wide matters that do not fall within the ambit of MTIA’s remit. This includes planning and transport system integration, the inter-relationship between the Project and the broader transport network.”

5.4. Response to Local Government Submissions

The following section provides summaries and responses of the submissions made by Local Government authorities. They have been ordered chronologically by submission number.

5.4.1. Yarra City Council (Submission 386)

Summary

Yarra City Council prepared a submission which outlines the anticipated impacts of the Project on the municipality and how the EES responds, followed by a summary of the strategic outcomes Council seeks from the Project. Most of the comments pertain to traffic and transport issues, with some relating to open space and vegetation.

Project Concerns

**Increased traffic**

C1. Yarra are concerned that daily traffic volumes on the Eastern Freeway could increase “significantly” which would result in additional traffic in Yarra, including on local and arterial roads as motorists seek alternate routes. They are concerned about the following specific impacts of increased traffic volumes:

- Congestion on local and arterial roads
- Delays to street-based public transport
- Increases in heavy vehicles
- Worsened cycling conditions

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18 MTIA or Major Transport Infrastructure Authority oversees the Level Crossing Removal Project, Rail Projects Victoria, WGT, NELP and Major Road Projects Victoria.
The TTIA presents results of changes in forecast vehicle kilometres travelled on arterial and local roads by municipality. The modelling results show that Yarra is forecast to result in a zero-net change in traffic volumes between 2036 ‘with project’ and ‘no project’ scenarios.\(^{19}\)

The EES notes that traffic on Hoddle Street is predicted to increase by a modest 2 per cent value across the day in the 2036 ‘with project’ scenario compared to the 2036 ‘no project’ scenarios, which falls within the typical day-to-day fluctuations of general traffic.\(^{20}\)

For reference, Table 5.1 below summarises changes in traffic volumes between the 2036 ‘no project’ and 2036 ‘with project’ scenarios for various roads within Yarra.

**Table 5.1: Daily traffic volumes on streets in City of Yarra\(^{21}\)**

<table>
<thead>
<tr>
<th>Street Segment</th>
<th>2036 ‘no project’ volume</th>
<th>2036 ‘with project’ volume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eastbound/ Northbound</td>
<td>Westbound/ Southbound</td>
</tr>
<tr>
<td>Alexandra Parade – Queens Parade to Hoddle Street</td>
<td>35,000 – 45,000</td>
<td>31,000 – 41,000</td>
</tr>
<tr>
<td>Hoddle Street – Eastern Freeway to Johnston Street</td>
<td>42,000 – 55,000</td>
<td>42,000 – 55,000</td>
</tr>
<tr>
<td>Johnston Street – Wellington Street to Hoddle Street</td>
<td>8,000 – 11,000</td>
<td>9,000 – 11,000</td>
</tr>
<tr>
<td>Queens Parade – Hoddle Street to Alexandra Parade</td>
<td>8,000 – 10,000</td>
<td>9,000 – 11,000</td>
</tr>
<tr>
<td>St Georges Road – Holden Street to Alexandra Parade</td>
<td>9,000 – 11,000</td>
<td>10,000 – 13,000</td>
</tr>
<tr>
<td>Victoria Parade – Hoddle Street to Lansdowne Street</td>
<td>26,000 – 34,000</td>
<td>24,000 – 31,000</td>
</tr>
</tbody>
</table>

As shown in the Table, traffic volumes are not expected to materially increase on key links in Yarra and in some cases, decrease by a nominal amount.

By way of a safeguard, EPR T5 which requires the contractor to:

\(^{19}\) (Transport and Traffic Impact Assessment, 2019, p. 323)
\(^{20}\) (Transport and Traffic Impact Assessment, 2019, p. 291)
\(^{21}\) (Transport and Traffic Impact Assessment, 2019, pp. D-32 to D-46)
“Undertake traffic monitoring on selected roads (arterial and non-arterial) identified in consultation with the relevant transportation authorities and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete. As part of the selection process, consideration must be given to roads that carry public transport services. Implement local area traffic management works in consultation with the local relevant councils.”

I am satisfied that this provides a suitable framework to intervene if select streets are identified as carrying higher traffic levels than forecast (noting that some interpolation will be required between 2027-2029 transport demands and those forecast for 2036 under the EES). Where Yarra have raised specific modal impacts, I have reviewed and present discussion below.

**Delays to street-based public transport**

As outlined above, traffic increases are expected to be relatively nominal in Yarra across the average day.

Modelling indicates that public transport travel times at the whole-of-route level are expected to remain unchanged or marginally decrease, as shown in Table 5.2 for routes that run through Yarra.

**Table 5.2: AM peak inbound travel time change – 2036 ‘with project’ compared to 2036 ‘no project’ (negative change in travel time means quicker journey)**

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
<th>Travel time change</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>West Preston – Victoria Harbour Docklands</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>48</td>
<td>North Balwyn – Victoria Harbour Docklands</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>86</td>
<td>Bundoora RMIT – Waterfront City Docklands</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>109</td>
<td>Box Hill – Port Melbourne</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>200</td>
<td>Bulleen – City (Queen Street)</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>207</td>
<td>Doncaster SC – City (Queen Street)</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>250</td>
<td>La Trobe University – City (Queen Street)</td>
<td>-5% to -10%</td>
</tr>
<tr>
<td>302</td>
<td>Box Hill – City (Lonsdale Street)</td>
<td>0% to -5%</td>
</tr>
</tbody>
</table>
The TTIA notes that a small number of intersection approaches worsen for bus routes in the ‘with project’ scenario, however these delays are more than offset by decongestion elsewhere on the network as well as specifically assigned routes where a net reduction in bus travel time is estimated.  

Further, EPR T1 requires the contractor to: “Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Work with relevant public transport authorities 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 North East Link.”

EPR T1 sets an appropriate benchmark on facilitative works for public transport (noting requirements under the Public Works Order with EPR T5 also requiring the contractor to undertake traffic monitoring on selected roads which I expect will be identified through the TMLG. On this basis, I am satisfied these issues are satisfactorily managed under the proposed management framework.

**Increase in heavy vehicle traffic**

Modelling results show that the Eastern Freeway between Chandler Highway and Hoddle Street (at the boundary of Yarra) is expected to carry an additional 200 trucks inbound (westbound) and 300 trucks outbound (eastbound) on an average weekday in the 2036 ‘with project’ scenario compared to the 2036 ‘no project’ scenario. This represents less than 10% of the 2036 ‘no project’ average weekday truck volumes.

On the other hand, the Project is expected to decrease truck volumes at other gateways, including Hoddle Street (north of the Eastern Freeway) by 200 vehicles inbound (southbound) and 200 vehicles outbound (northbound) and on St Georges Road inbound (southbound) by 100 vehicles, compared to the ‘no project’ scenario.

Considering this net change in truck movements, the change into the Yarra LGA is minor if not more favourable under the ‘with project’ scenario.

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22 (Transport and Traffic Impact Assessment, 2019, p. 413 to 414)  
23 (Transport and Traffic Impact Assessment, 2019, p. 399)  
24 (Transport and Traffic Impact Assessment, 2019, p. 270)
Consistent with earlier observations, EPR T5 provides a suitable framework to monitoring demand on select roads.

**Cycling conditions**

As referenced earlier, the strategic modelling results show that Yarra is forecast to result in a zero-net change in traffic volumes on local and arterial roads between the 2036 ‘with project’ and ‘no project’ scenarios\(^\text{26}\). Whilst there may be traffic redistribution within Yarra, analysis indicates that there will be a negligible change in traffic volume.

C2. Concerns regarding the impact of increased demand for cycling to and through Yarra, particularly along corridors which connect to NEL pathways. The submission notes that complementary improvements will be required along a number of key cycling routes (which are listed). Yarra also expressed concerns regarding potential increased maintenance costs associated with new off-road shared paths delivered by the Project, or loss of parking to deliver cycling projects. Seeks proposals to remove on-street parking directly improve travel conditions for people travelling by non-motorised transport modes.

On this issue, I have sought guidance from the Public Works Order, the evaluation objective contained within the Scoping Requirements, the Reference Design and the EPRs noting that Section 5.9 of this Evidence Statement sets out a detailed review of specific active travel

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\(^{25}\) (Transport and Traffic Impact Assessment, 2019, p. 399)

\(^{26}\) (Transport and Traffic Impact Assessment, 2019, p. 323)
projects raised in submissions as potential ‘complementary projects’ for inclusion as part of the overall Project.

In that section, discussion is provided on a range of guiding tests, developed to assist with determining the appropriateness of including or excluding a specific active travel projects by submitters. This section included projects raised by the City of Yarra.

On the issue of any increased maintenance burden, it would be reasonable to expect that increased active travel infrastructure will, the face of it, increase costs of maintenance. The acceptability of these cost increases is balanced by:

1. Increased active travel connectivity within Yarra and the broader network which is consistent with a range of state and local policies which seek to support sustainable transport practices, and
2. A project which will help facilitate productivity improvements within Yarra and broader Melbourne in support of further population, employment and educational growth for all Victorians.

On my review of the EES, there are no obvious changes to the network that appear to result in losses of parking for the Yarra LGA. On the ultimate project being delivered, detailed design would need to be optimised in consultation with Council in accordance with EPR T1.

C3. Seeks further detail on where and how bus travel time improvements will be realised in non-freeway environments (i.e. inner city and eastern suburbs).

Travel time improvements for buses will be realised through the North East Link’s ability to attract trips onto the corridor from local and arterial roads.

The TTIA notes that travel speeds across the bus and tram network in the north-east are forecast to increase by approximately 3 per cent in the morning and evening peak periods and by 2 per cent across the day. Modelling also shows that whole-of-route travel times for bus services are predicted to decrease by up to 10 per cent, which “reflects the general decongestion of the north-eastern arterial road network”.27

Modelling Approach/Extents

C4. Comment that the modelling has been undertaken to a satisfactory level, however the submission contends that no raw survey data has been provided and no independent check of raw survey data has been undertaken.

The GTA Peer Review Report included an independent peer review of microsimulation (operations) modelling. The GTA Peer Review Report noted that no raw survey data was provided and GTA recommended that an independent check be undertaken to on the raw survey

27 (Transport and Traffic Impact Assessment, 2019, p. 412 to 413)
data to confirm the validity and suitability for use. In raising this issue with project technical team (SmedTech), GTA was advised that data has been shared with VicRoads for information and review, with no issues raised.\(^{28,29}\) SmedTech also advised that they compared the survey day data to that of the full month and found that it was representative of typical traffic volumes.\(^ {29}\)

On the adequacy of strategic modelling relied upon by the Project, this was undertaken by a separate, independent peer reviewer and is outside the scope of this assessment.

C5. Concerns that microsimulation modelling does not include the interchange of Hoddle Street/Eastern Freeway, despite the preceding section of the Eastern Freeway having “the lowest average vehicle speed of all freeways in Melbourne”.

The GTA Peer Review Report raised a similar question and recommended replicating “the operational effects associated with the Hoddle Street and Eastern Freeway junction to ensure those characteristic elements are appropriately considered on the operation of the broader corridor”.\(^ {30}\)

The memorandum of information provided to GTA during the preparation of this evidence statement confirms that consideration was given prior to settling the EES technical report to ensuring that any back-queue from Hoddle Street into the Eastern Freeway was reviewed, documented and subsequently relied upon to inform the 2036 ‘no project’ and ‘with project’ outcomes. That memorandum indicates that back-queueing extends to around 1km during the AM peak. This compares with an offset between Hoddle Street and the Chandler Highway of around 3km.

Further, it is worth noting that the forecast increases in transport demand at this end of the corridor are modest during the road network AM and PM peak periods. This modesty reduces the flow on effect of queues generated at the Hoddle Street node back into the operations model.

Lastly, in raising this matter with SmedTech, we have been advised that the model scope was also discussed and agreed with VicRoads, including the decision not to specifically include the Hoddle Street interchange.\(^ {31}\)

C6. Concerns that an existing year assessment has not been undertaken as the 2026 road network performance will be primarily driven by population and employment growth between 2016 and 2036. Concerns that absence of this assessment means that congestion hotspots are not identified.

\(^ {28}\) (North East Link Microsimulation Model Peer Review, 2018, p. 8)
\(^ {29}\) SmedTech memo dated 24/09/18, as cited in (North East Link Microsimulation Model Peer Review, 2018), Appendix C
\(^ {30}\) (North East Link Microsimulation Model Peer Review, 2018, p. 8)
\(^ {31}\) SmedTech memo dated 24/09/18, as cited in (North East Link Microsimulation Model Peer Review, 2018), Appendix C
The methodology applied to the EES, which involves a 10-year post implementation planning horizon, is consistent with my experience.

On identifying hot spots on the network, considerable effort has been exercised on reviewing current network operation in and around the Project corridor. These investigations have influenced coding of the models for both the existing condition and ‘with project’ and ‘no project’ outcomes for the 2036 evaluation year.

C7. The City of Yarra raise the following concerns relating to the strategic modelling inputs and assumptions:

- Comment that a spreadsheet model is used to convert ‘partially constrained’ strategic modelling demand to constrained traffic demand by shifting excess demand to either side of the peak period. Concern that this approach does not capture re-routing on oversaturated routes and that this re-routing will impact the local community.
- Concerns that scenario testing of different growth and transport infrastructure improvements were not undertaken to understand impacts.
- Questions basis of why East West Link was not included in the list of committed transport projects that will be completed by 2036, given it is a high-profile project with Federal budget allocation.
- The submission contends that no review of the forecast modelling has been undertaken.

An expert evidence statement for strategic modelling is being prepared by a separate, independent witness and falls outside of the scope of this review.

Recommendations & Requests

R2. Seeks for the Project to meet objectives of the Transport Integration Act (2010), particularly those related to ‘Environmental Sustainability’, ‘Integration of Transport and Land Use’ and ‘Safety and Health and Wellbeing’.

Section 3 of this Evidence Statement outlines an assessment of the Project’s alignment with key transport policies, strategies and relevant reference legislation.

Active travel

R3. Seeks complementary improvements along a number of Yarra’s key cycling routes – Wellington Street, Roseneath Street, South Terrace, Trenerry Crescent, Gipps Street.

Complementary active transport projects are considered at Section 5.9.3.

R4. Seeks all new shared use paths delivered by the Project be a minimum of 3.0m in width, be signed off by Council and be in accordance with Design Guidance for Strategically Important Cycling Corridors and other policies and standards.
I do not consider there to be a need for the EPRs to prescribe a specific guideline or practice. However, this request highlights that the EPRs should be adequately drafted to ensure the Project is designed to a suitable standard.

The EPR related to the design outcomes of the Project is EPR T1 which states:

Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils 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, bicycle connectivity, and shared use paths
• Work with relevant public transport authorities 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 North East Link

The current wording of the EPR only requires interchanges and intersections to be designed to meet relevant road and transport authority requirements. Upon reflection it may be appropriate to consider revisions to the EPR to broaden the requirement of the Project works to meet relevant road and transport authority requirements beyond interchanges and intersection design.

On this change, it would be appropriate to broaden the application of the third bullet point of EPR T1 to read:

• Design the Project to meet relevant road and transport authority requirements

On whether the EPRs should prescribe a specific guideline such as the Institute for Transportation and Development Policy suggested by the submitter. However, I believe it is appropriate for the EPRs to require the Project meet the design requirements of relevant road and transport authorities as applied in the applicable jurisdiction and which are relevant at the time of design. This should sufficiently balance the ability for the Project to encourage innovation whilst ensuring minimum standards are met.

R5. Seeks better opportunities be provided for pedestrians and cyclists to cross major roads connecting with the NEL Project area such as the Eastern Freeway, Alexandra Parade and Hoddle Street.

This complementary active transport project is considered at Section 5.9.3.

R6. Seeks that the ability to extend pedestrian crossing times on Alexandra Parade and Hoddle
Street should not be refused due to additional traffic caused by the Project. Transport flows will change as a result of this Project. Decisions to alter pedestrian phasing following implementation of the Project would need to be subject to an assessment by DoT and evaluated independently of this Project as the specified locations sit outside the nominated Project corridor area.

**Doncaster busway and integration with the broader network**

**R7.** Seeks for the Project to not preclude construction of Doncaster rail in the future.

As outlined in Chapter 6 of the *EES*[^32], a future Doncaster Rail option would not be precluded by North East Link, as the dimensions of the Doncaster Busway corridor are consistent with those required to accommodate heavy rail in the future. On the deliverability of heavy rail, I have been instructed that the busway would need to be removed and replaced.

**R8.** Seeks that the intersection of Hoddle Street/Eastern Freeway and other intersections along Hoddle Street and Victoria Parade used by rapid bus services to be modelled to understand impacts.

Please refer to response to C5 and R10.

**R9.** Seeks a ‘bus operational plan’ be prepared to complement delivery of the busway and ensure benefits are fully realised. This plan should include detail regarding minimum headway provision, various commitments to enhance quality and comfort (listed), commitment to electrified fleet on the busway route and for the busway to meet ‘BRT gold standard’ compared to international best practices.

Operational analysis completed in support of the *EES* includes specific consideration of busway infrastructure and headway operating times. Set out elsewhere in this Evidence Statement, the *EES* operations modelling allows for bus frequencies of up to 140 buses per hour (per direction) or just over two buses every minute indicating approximate 30 second headways.

The request for an operational plan is a matter for DoT rather than the Project team given that they (as a department) co-ordinate the overall bus network. I expect DoT will have an ongoing role on this Project in support of preparing a detailed design concept before implementation in accordance with requirements set out under EPR T1. This involvement will determine the standard and detail around the busway provision using the Public Works Order and Project Scoping Requirements as a guide.

**R10.** The City of Yarra identified there to be a gap in public transport provision along Alexandra Parade needs urgent rectification. They also seek improvements to bus operating environment between CBD and Eastern Freeway, including potential full-time bus lanes or other infrastructure to facilitate bus movement. This may include two high-quality bus lanes.

[^32]: (North East Link Environmental Effects Statement, 2019, pp. 6-8)
corridors on Hoddle Street, Victoria Parade, Johnson Street, Alexandra Parade, Wellington Street, Nicholson Street and Lygon Street. The City of Yarra express concerns that supporting works may require removal of car parking. They request compensation for any removal of paid parking.

As I interpret the reference design and EES, public transport services for the most part, are upgraded along the Eastern Freeway to a location immediately east of the Hoddle Street / Alexandra Parade junction and matching in after that with existing infrastructure. On the acceptability of this approach, the Scoping Requirements provide a schematic diagram of the Project outline which on my interpretation indicates that Alexandra Parade sits outside the selected Project outline area.

Noting that the reference design represents one amongst a range of potential solutions for east-west public transport services, opportunities do exist to extend infrastructure further west noting that there is no clear or evident “gap” that would be filled by extending these services to the Project outline edge. On this, it is evident that a strategy which involved extending public transport access exclusivity (if that is what is inferred) along Alexandra Parade would require careful consideration of other impacts including:

- The likely impact of the productivity and functioning of Alexandra Parade through the likely required re-allocation of road space,
- Other strategic plans and design solutions which involve a broader strategic remit around east-west travel along Alexandra Parade and beyond,
- Contributions made by DoT on the need to extend public transport services beyond those shown in the EES reference design through its role on the TRG.

Lastly, given that the EES concept plan reflects a reference design, an opportunity remains to extend public transport services further west through EPR T1, which requires the contractor to:

Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Work with relevant public transport authorities 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 North East Link.

On improvements between the Eastern Freeway and the CBD, the Hoddle Street streamlining project is currently on foot. This project includes holistic transport upgrades along that corridor as outlined in the exert below which includes changes around the Eastern Freeway and Johnston Street. Areas beyond this section of Hoddle Street extend well outside the Project corridor and therefore outside the area contemplated by the gazetted Public Works Order as well as requirements set out under the Project Scoping Requirements.
On any loss of on-street car parking, a review of the reference design indicates that there is currently no proposal to remove on-street parking within the City of Yarra to deliver the Project. On any detailed design, EPR T1 provides a framework for the minimised loss of car parking in consultation with the relevant local council.

Figure 5.2: Streamlining Hoddle Street: Project Overview

R11. Seeks for Council to be consulted regarding route options for Doncaster bus services between the Eastern Freeway and the CBD.

In the event that a meaningful change is proposed to existing routing, this is considered reasonable and is satisfactorily captured by EPR T1. At this stage, the reference design does not propose any meaningful change to routes along these roads.

R12. Seeks proposals to extend the hours or length of Clearways to deliver bus improvements after complying with associated legal procedures and industry agreements.

The Project does not propose to extend the hours or length of Clearways to support upgrades to bus corridors in Yarra. Given the requirement to navigate a range of independent processes which need to be undertaken independent of the Project I would not recommend the Project.

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33 (Streamlining Hoddle Street: Project Overview)
include these changes but rather they be pursued separately and independently of current *EES* planning.

R13. Seeks compensation for the Project’s removal of any paid parking bays to deliver bus corridor upgrades.

The Project does not propose to upgrade bus corridors or remove paid parking bays to support upgrades to bus corridors in the City of Yarra beyond the extents of the Project (as defined by the Public Works Order and as shown in the reference design). I would expect consultation to occur with the relevant council should the detailed design consider these changes. A request and need for compensation from / to an LGA I would expect would be one amongst a range of issues considered before selecting to adopt this type of change.

R14. Seeks that the Project does not result in additional traffic growth or through traffic on local roads or through key centres and that any growth be offset through funding to improve walking, cycling and public transport.

Growth in traffic at a local level is dealt with by the strategic model relied upon to inform outcomes associated with the Project. Local areas are represented as ‘zones’ in the network wide model, with estimates subsequently provided for higher order roads on the network including roads which bisect key centres in and around the City of Yarra municipality. The *EES* subsequently assesses the impacts of this traffic growth noting that meaningful levels of transport activity will be attracted to the corridor and off other roads within the City of Yarra when comparing the 2036 ‘with project’ and ‘no project’ scenarios.

Where local roads within the municipality might be potentially adversely affected, EPR T5 provides a sufficient mechanism to allow the City of Yarra to nominate streets of concern and be consulted in relation to the development of local area traffic management works to respond to the findings of traffic monitoring where required.

R15. Seeks implementation of a post construction monitoring framework to quantify changes in traffic flow, including measuring traffic volumes, public transport delay and other impacts. Seeks a funding pool to deliver works to respond to these monitoring outcomes.

EPR T5 requires “traffic monitoring on selected roads (arterial and non-arterial) identified in consultation with the relevant transportation authorities and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete”. The EPR requires that “consideration must be given to roads that carry public transport services” and that local area traffic management works are to be implemented in consultation with the local relevant Councils.

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34 (Transport and Traffic Impact Assessment, 2019, p. 323)
On developing a specific framework, I expect the TMLG group will take a leading role in coordinating and managing this requirement, drawing on experiences from other major transport projects currently underway in Melbourne and Victoria.

I expect the Project proponent will have funds allocated for works required to support the treatment or intervention of adverse outcomes associated with the monitoring programme.

R16. Contends that traffic associated with NEL should not be used to support a future business case for East West Link.

Any business case for East-West Link will need to consider implications associated with NEL subject to their being a government commitment and or delivery of the NEL Project (i.e. it proceeding).

5.4.2. Manningham City Council (Submission 316)

Summary

Overall, Council provides in-principle support for the Project, recognising its benefits to the north-east and broader Melbourne. The Council does not however support the Project as presented in the reference design due to its impacts on Manningham and surrounds. The submission covers a broad range of themes and disciplines, including traffic and transport issues.

These issues are summarised below, along with my responses to assist the IAC.

Project Concerns

Evaluation of Risk

C8. Concerns that the risk ratings adopted for the Project are overly optimistic and underestimate the likelihood of an event, underestimate the consequences of an event and overestimate the efficacy of mitigation strategies. Concerns that data gaps make it difficult to make credibly evaluate risk.

The GTA Peer Review Report provided commentary on the risk evaluation process outlined in the TTIA. The GTA Peer Review Report “does not explore the accuracy or appropriateness of the identified potential threats and/or effect on the environment” but found that “the process and methodology set out in the risk assessment appears consistent with peer review expectations...
noting that further detailed risk assessments are expected to be prepared by contractors during both construction and operational phases of the project. It is expected that these assessments would be prepared in connection with advancement of the project design beyond that currently represented by the reference design.”.  

I am satisfied that these comments remain valid and that risk has been appropriately considered for this stage of planning.

**Construction Impact and Amenity**

C9. Concerns that properties in Estelle Street, Bulleen will be particularly affected by construction.

Refer to response to C103.

C10. Concerns that construction activity will occupy some recreational trails for up to six years, with no alternative recreational trails in proximity to some sections of the Koonung Trail.

Refer to response to R145.

**Impact on Bulleen Industrial Precinct**

C11. Concerns of the impact of the reference design on the Bulleen Industrial Precinct, vegetation and open space.

Refer to response to R17 and C33.

C12. Concerns that the reference design does not provide any access to the Bulleen Industrial Precinct and that alternative design provides only limited access. Notes lack of clarity around proportion of land will be remain available to industrial or other uses following completion of the Project. Concerns that neither the reference or alternative design provides access to the former Bulleen Drive-In site.

Section 10 of the TTIA presents an indicative construction work zone over the industrial properties between Bulleen Road, Manningham Road and the on and off-ramps. It is not clear from the TTIA what the likely ultimate land use will be for the acquired properties, therefore it is difficult to make an informed assessment of the likely local access impacts of the interchange on these sites.

Until decisions are made to determine the highest and best use of any excess and developable land around the Manningham Road interchange, it would be premature to outline any transport access outcomes."
**Safety and Access**

C13. Supports the position of Heide Museum of Modern Art with respect to the Bridge Street access it is seeking.

The reference design indicates a range of issues around citing access from the museum via Bridge Street including:

1. A need to restore access for a handful of residential properties adjacent to Bridge Street itself which limits any opportunity for further access to other land uses.

2. Limitations on providing direct access from a short street length which provides an important role in supporting regional traffic and transport activity as part of a larger state significant infrastructure project.

3. Access at present is already served from Lower Templestowe Road and the Project does not proposed to alter that existing configuration.

4. I am not aware of any practical reason why access must be derived from Bridge Street.

**Pedestrian and Cycling Bridges**

C14. Considers that the provision of like-for-like pedestrian and cycling bridges over the Eastern Freeway does not improve upon current connections between communities.

Several submissions, including this one, refer to the need for the Project to enhance a range of outcomes or deliver complementary projects. To assist the IAC in navigating these concerns and requests, an attempt has been made to articulate the boundary or extent of responsibility this Project has on delivering specific projects in and around the project corridor.

The Public Works Order[^37] for North East Link defines the extent to which the North East Link Project is `public works`, and therefore subject to the EES process and inquiry. The public works comprise the following:

- **Western Ring Road to Lower Plenty Road** – from the M80 and Greensborough Bypass to the northern tunnel portal, this section would include a mixture of above, below and at surface road sections, with new road interchanges at M80, Grimshaw Street and Lower Plenty Road.

- **Tunnels** – from the northern tunnel portal located just north of Lower Plenty Road to south of Manningham Road, twin tunnels would travel under residential areas, Banyule Flats and the Yarra River. Near each tunnel portal supporting tunnel infrastructure would be required, including ventilation structures, substations and associated infrastructure. This section would include a new interchange at Manningham Road.

[^37]: (Public Works Order: North East Link Project, 2016)
- **Bridge Street to Eastern Freeway** – this section would include open cut and bored or mined tunnel with the southern tunnel portal located south of the Veneto Club. Further south, surface road and viaduct structures would connect to the Eastern Freeway via a new interchange.

- **Eastern Freeway upgrades** – from around Hoddle Street in the west through to Springvale Road in the east, modifications to the Eastern Freeway would include widening to accommodate future traffic volumes, provision of new dedicated bus lanes for rapid bus services and associated works; and

- **Relevant ancillary temporary works to support the construction project.**

I note that the Public Works Order discusses predominantly road links and supporting infrastructure (ventilation, substations, viaducts) and provision of bus lanes on the Eastern Freeway. I also note that the Public Works Order does not necessarily preclude additional projects from being delivered, but under my interpretation, they are not required to be planned for, or scrutinised under the EES inquiry. This essentially defines the scope of the project for the purposes of the EES.

The Public Works Order also sets geographic bounds for the Project extent, as reproduced at Figure 5.3.

**Figure 5.3:** Schematic Diagram of the Outline of the Project

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(Scooping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 3)
With the extents established, the **Scoping Requirements** for the **EES** define the requirements for the extent of material to be assessed and described in the Project’s Environment Effects Statement. With respect to transport, the Scoping Requirements set an evaluation objective:

“To increase transport capacity and improve connectivity to, from and through the northeast of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the project on the broader and local road, public transport, cycling and pedestrian transport networks.”

On my interpretation, this evaluation objective applies to the public works scope defined in the Public Works Order. The Scoping Requirements thus add the additional requirement for the Project to deliver the scope set out in the Public Works Order including:

“while managing the effects of the project on the broader and local road, public transport, cycling and pedestrian transport networks.”

To demonstrate that the Project can achieve this, the Scoping Requirements stipulate that the **EES** must describe a number of design and mitigation measures. The transport-related mitigation measures are reproduced below (and numbered to assist with subsequent responses):39

- **Describe the proposed approach to managing transport network conditions during the project’s construction** such as any staging proposed to maintain transport system function and the proposed nature and duration of diversions including for pedestrian and cycle links.

- **Describe the potential routing of spoil transport** from tunnelling works and other construction-related transport movements to minimise traffic and amenity impacts.

- **Describe any potential public transport priority treatments**, such as signal priority and tram/bus lanes, to enhance public transport access and uptake and minimise any adverse impacts on traffic and other public transport users’ journeys including travel to stops and stations during construction.

- **Describe the proposed transport network design features and approach** to optimise and integrate the project with the existing or modified transport network, including any proposed solutions to accommodate placarded and over-dimensional vehicles.

- **Describe the proposed transport network design features and approach** to optimise and integrate the project with the existing pedestrian and bicycle network, including any

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39 (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 13)
proposed solutions to enhance pedestrian and bicycle access in the vicinity of the project (bold my emphasis).

- Describe traffic calming or other management tools that could be used to modify travel behaviour on the project and local roads such as managed motorway systems, intelligent transport systems, tolls, clearways, truck curfews and bans.

- Describe measures to maintain or enhance community linkages or replace linkages that may be disrupted by the project.\(^{40}\)

Beyond these requirements (and others as outlined in the Scoping Requirements) and taking into account the bounds established in the Public Works Order, the Project is not required to provide, nor does it preclude provision of, any other infrastructure or services except where it can be demonstrated as required to “optimise and integrate the Project” with existing facilities.

On this criterion, the delivery of any isolated active transport facilities, new public transport services or other complementary projects which do not “optimise and integrate” the NEL Project also fall outside the scope of public works, except relevant temporary works to support construction of the Project (sub-point five of the Public Works Order above) or works to manage the effects of the Project on broader transport networks (Scoping Requirements).

With this in mind, the reference design prepared to support the EES inquiry considers both the Public Works Order and the Scoping Requirements to deliver an example Project outcome that meets the relevant Project requirements. On review, the reference design would appear to extend beyond the scope of the Project in several respects including for example, the provision of additional shared paths along the North East Link corridor. These new networks may (and logically should) serve as future Strategic Cycling Corridors (SCC’s).

With this context, Council’s desire for better than like-for-like pedestrian facilities over the Eastern Freeway are misaligned with requirements set down for the Project, unless of course they are required to optimise and integrate the Project with the existing pathway network.

On this issue, the Environment Performance Requirements (EPRs), form a ‘safeguard’ to protect the outcomes of the Project during design optimisation, construction and operation. Several draft EPRs have been proposed in the EES to which GTA provided feedback on within the GTA Peer Review Report and again provides feedback later in this Evidence Statement after considering the submissions received on the Project.

Reaffirming the above, the Department of Transport’s (the ‘Department’) submission to the EES (Submission 737) confirms that the Department will provide:

\(^{40}\) (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 16)
“clarity on transport-wide matters that do not fall within the ambit of MTIA’s remit. This includes planning and transport system integration, the inter-relationship between the Project and the broader transport network”.  

It is my interpretation, then, that planning and integrating the Project with the broader transport network is the role and jurisdiction of the Department of Transport outside of the EES process and not within the remit of the Project proponent.

Considering the above, in response to concern C14, I am satisfied that it is not the role of the Project to necessarily improve upon current connections between communities (refer Scoping Requirement sub-point 7).

This outcome is reaffirmed in EPR T1 sub-point 4 which requires a contractor to “Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity and shared use paths”.

In summary, the intention is commendable, and the reference design does not preclude such outcomes, but improving connections extends beyond the remit and scope of the Project.

Recommendations & Requests

R17. Concerns that both reference and alternative designs of the Manningham Road interchange are convoluted and fail to provide local residents with good access to North East Link. Seeks a fully directional design of Manningham Road interchange with logical connections.

Three options were considered for the Manningham Road interchange, including a more ‘traditional’ diamond-style interchange which avoids the need for large ‘looped’ entry and exits ramps, as can be seen in the reference design.

On this design response, the EES notes that a diamond interchange was found to be unworkable due to unsuitable ramp grades to and from the tunnel and “insufficient capacity as connections would only be provided to Manningham Road and not Bulleen Road”. The diamond interchange was also found to have impacts on sensitive areas north of Bridge Street, including within the Heide Museum of Modern Art site and significant surface construction works that were determined to have an unacceptable impact on properties and stakeholders surrounding the interchange.

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41 MTIA = Major Transport Infrastructure Authority
42 Submission 737 to the North East Link EES (Department of Transport), pp. 4
43 (North East Link Environmental Effects Statement, 2019, pp. 27-62)
44 (North East Link Environmental Effects Statement, 2019, pp. 6-43)
The reference design which was progressed seeks to strike a more appropriate balance between these trade-offs after applying a multi-criteria assessment involving a range of planning disciplines.

I understand a member of the Project technical team will be available at the hearing to elaborate further on the design considerations which have informed the layout of the Manningham Road interchange.

R18. Seeks that the changed access arrangements from Bulleen Road to Avon Street and Austin Street be determined in consultation with the affected residents and Council in the final design.

The TTIA explains this closure:

"With the implementation of North East Link, Avon Street will be closed off from Bulleen Road and Austin Street will be reconfigured as left-in/left-out only. These measures have been deliberately incorporated into the design to protect Avon Street and Austin Street from potential 'rat-running' traffic to/from the North East Link ramps.

Traffic bound for Bulleen Road from Avon Street will be required to utilise neighbouring connections at Austin Street or York Street/Manningham Road (an additional 500 metres to one-kilometre travel distance, or approximately one to two minutes’ additional travel time). Given the small residential catchment along Avon Street, the impact on traffic volumes along Austin Street and York Street is anticipated to be negligible."45

The need and consideration of this network change was raised in the GTA Peer Review Report with subsequent further work completed by the Project team comprising a memorandum of information dated 13 June 2019.

The memorandum of information sets out further explanation which on balance appears reasonable if the reference design interchange layout is delivered and Avon Street sits within the Bulleen Road off-ramp where it would require separate and independent signal control and could be subject to non-complaint by drivers using it as a short-cut to access NEL.

On the use of Thompsons Road as an alternate route from the south, I am of the view that it is more likely that drivers will rely on Bulleen Road, use Manningham Road and perform a U-turn at Carrathool Street. This observation is largely inconsequential to the extent that at least two arterial road options are available to residents located within Avon Street.

45 (Transport and Traffic Impact Assessment, 2019, p. 334)
R19. Seeks for Bulleen Road between the Eastern Freeway and Manningham Road be maintained as a State highway (rather than downgraded in classification).

The TTIA states that due to the general diversion of traffic away from arterial and local roads (reduction in traffic demand and freight network functions), several roads are intended to be downgraded in General Traffic category with implementation of the Project. Firstly, I acknowledge that traffic demand is expected to increase, rather than decrease, on Bulleen Road.

‘General Traffic’ (or ‘GT’) categories are part of the state government’s Movement and Place framework and refer to the classification of the road and its role in moving private vehicle users (as opposed to freight or public transport users) across different areas. GT classifications are listed on a scale of 1 to 5, where 1 is the highest movement function (state- or national-level movement, such as M80 or the Eastern Freeway) and 5 is the lowest movement function (local movement).

For example, a classification of ‘GT2’ means the road provides (or is anticipated to provide) “significant movement of people by private vehicle on routes connecting municipalities or providing primary access to Regional level places”. A classification of ‘GT3’ means the road provides “moderate movement of people by private vehicle on routes connecting municipalities or providing primary access to Municipal level places”.

In the case of Bulleen Road, the General Traffic function is anticipated to be reduced from a GT2 in the ‘no project’ scenario to a GT3 in the ‘with project’ scenario. It is noted that the downgrade in classification is not necessarily a reflection of ownership or management of the road, but rather the way the road is intended to function and the users it is envisaged to service. Downgrading Bulleen Road sets the expectation that following Project implementation, the link will have a “greater focus on servicing local municipalities” and commensurately, the link may not necessarily require the degree of movement centric upgrades or modification expected of a higher-order category. This may reflect an effort to manage traffic impacts along the road, rather than catering to increased demand by widening or upgrading Bulleen Road in the future.

R20. Seeks inclusion of the duplication of Templestowe Road as part of the Project, including turning lanes, signalised intersections and shared paths.

This request refers to potential measures to manage the impacts of the Project. Modelling shows that Templestowe Road is expected to carry reduced or unchanged traffic volumes as a result of North East Link, compared to a scenario where the Project is not delivered. Average

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46 (Transport and Traffic Impact Assessment, 2019, p. 310)
47 (Transport and Traffic Impact Assessment, 2019, pp. D-33)
48 (Transport and Traffic Impact Assessment, 2019, p. 85)
weekday daily traffic volumes along various links of Templestowe Road in the 2036 ‘no project’ and 2036 ‘with project’ scenarios are reproduced from the TTIA at Figure 5.4.

Figure 5.4: 2036 ‘no project’ average daily weekday traffic volumes compared to 2036 ‘with project’ volumes on Templestowe Road

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Direction</th>
<th>2017</th>
<th>2036 ‘no project’</th>
<th>2036 ‘with project’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Templestowe Rd</td>
<td>Near Birrarung Park</td>
<td>Eastbound</td>
<td>8,000–11,000</td>
<td>14,000–18,000</td>
<td>14,000–18,000</td>
</tr>
<tr>
<td>Templestowe Rd</td>
<td>Near Birrarung Park</td>
<td>Westbound</td>
<td>7,000–10,000</td>
<td>13,000–17,000</td>
<td>11,000–14,000</td>
</tr>
</tbody>
</table>

While there are other reasons for upgrades beyond road capacity, for the purposes of determining the Project’s contribution to the need for these upgrades, the Project is not anticipated to degrade traffic conditions on this link. Therefore, I am satisfied that this upgrade does not fall within the obligations or scope of the Project.

On active transport, complementary projects are considered at Section 5.9.3 of this Evidence Statement.

R21. Seeks an improved access arrangement for the Bulleen Park and Ride, noting the reference design does not provide for a right-turn out of the facility into Thompsons Road.

A memorandum was issued which sets out some useful information on parameters around the scale and function of the facility and the extent to which it had been included in modelling for the Project. I refer to my response to the memorandum in Section 4.2.1, where I recommend that traffic access to the Bulleen Park and Ride include a link to Bulleen Road through an extension of a new network of street links proposed to land immediately north and via a new set of traffic signals or an alternate left-in / left out arrangement directly via Bulleen Road.

R22. Concerns regarding the proximity of the proposed access to Doncaster Park and Ride to Hender Street. Seeks a safe access arrangement to Doncaster Park and Ride (relative to Hender Street) that protects local residents.

The reference design shows a vehicle access to Doncaster Park and Ride in relatively close proximity to Hender Street. I share Council’s initial concerns around this facility and recommend it be further investigated before inclusion as part of the Project.

This potential change is suitably captured by EPR T1 which requires the contractor to:

“Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Design interchanges and intersections to meet relevant road and transport authority requirements” and “Work with relevant public transport authorities 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 North East Link”.

49 (Transport and Traffic Impact Assessment, 2019, pp. D-44)
As well as EPR T4 which requires the contractor to:

“Undertake independent road safety audits after each stage of detailed design and after construction. The project design and operational activities must meet all relevant road and transport authority requirements with respect to transport network user safety.”

R23. Seeks detail on how the future provision of Doncaster rail will not be precluded.

Chapter 6 of the EES provides commentary on this issue and advises that a future Doncaster Rail option would not be precluded by North East Link, as the dimensions of the Doncaster Busway corridor are consistent with those required to accommodate heavy rail in the future.

On delivering heavy rail, enquiries indicate that should heavy rail be required by government, the busway would need to be removed and replaced.

R24. Seeks for selection of the northern TBM launch site be preferred as it appears to reduce duration of construction in Manningham with no impact to construction duration in Banyule.

Two options for the TBM launch are outlined in the EES. At this stage no firm decision has been made on which launch site will be relied upon. Given that a range of planning disciplines will need to contribute to any decision around which site is selected, I consider it inappropriate for this Evidence Statement to recommend one option over the other but note that from a traffic and transport perspective, both options appear feasible.

R25. Seeks signalisation of the intersection of Barak Street/Thompsons Road during construction.

In the event that the Project has any substantial reliance on Barak Street for access under either a temporary or permanent nature, further investigations will be required to determine the need to signalise this intersection including the consideration of the level of additional demand as well as the time that demand is generated.

I am satisfied that EPR’s T1 and T2 address this issue satisfactorily.

R26. Seeks restriction of spoil haulage such that access to the Kampman Street compound is provided via Thompsons Road and access to the Katrina Street compound is provided via the Eastern Freeway.

Refer to response to C99.

R27. Seeks sequencing measures to ensure the construction of the Manningham Road interchange would not coincide with the upgrade of Fitzsimons Lane (as part of the Northern Roads Upgrade project).

EPR T2 provides controls for the preparation of Transport Management Plans (TMPs) during construction. Sub-point five requires that the TMP has “consideration of construction activities for other relevant major projects occurring concurrently with construction activities for North East

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50 North East Link Environmental Effects Statement, 2019, pp. 6-8
Link and potentially impacting modes of transport in the same area”. EPR T5 requires monitoring and practicable mitigation measures where adverse impacts are identified.

TMPs will have input from a range of agencies and will be reviewed and approved by the relevant authorities. I am satisfied that the EPRs (including preparation of TMPs) provide adequate protection from this concern.

R28. Seeks for the following infrastructure to be included in the reference design and delivered as part of the Project:
   o New shared paths along Bulleen Road

   Agree noting that the reference design includes these facilities on both sides of the road.
   o New walking and cycling bridge across the Yarra River connecting Yarra Street and Banksia Park

   This complementary active transport project is considered at Section 5.9.3.
   o Walking and cycling infrastructure in accordance with Council’s Yarra River Concept Plan (including bridges and continuous walking paths between Bulleen Park and Finns Reserve).

   This complementary active transport project is considered at Section 5.9.3.

R29. Notes that the EES does not show footprints for the busway or provide information on its stops. Seeks for footprints for the busway and information on its stops.

   The reference design included within the EES Map Book\(^{51}\) shows the footprint of the proposed busway.

   The reference design included within the EES Map Book\(^{52}\) also shows the proposed busway stations at Doncaster Park & Ride and Bulleen Park & Ride. The EES notes that the preferred reference design busway option does not preclude bus stations at the Chandler Highway and Burke Road interchanges.\(^{53}\)

R30. Notes that the EES does not include the Eastern Freeway and Hoddle Street interchange within the Project boundary. Seeks inclusion of the Eastern Freeway and Hoddle Street interchange within the Project boundary.

   Please refer to response to C5.

R31. Notes that the EES does not have consideration of the future provision of bus rapid transit as part of an integrated transport network between Melbourne CBD and Doncaster. Seeks inclusion of this.

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\(^{51}\) (North East Link Environment Effects Statement Map Book - Part 2, 2019)

\(^{52}\) (North East Link Environment Effects Statement Map Book - Part 2, 2019), Sheet 32 & 35

\(^{53}\) (North East Link Environmental Effects Statement, 2019, pp. 6-57)
Refer to response to C14 - the planning and integration of the Project with the broader bus network (including routes) is not within the remit or scope of the Project.

R32. Submits that the Project should include provision of bus services:

- Along Templestowe Road
- Along Bulleen Road to connect Bulleen Park and Ride to Heidelberg
- From Templestowe Village to Heidelberg and La Trobe NEIC

Refer to response to C14 – the planning and integration of the Project with the broader bus network (including routes) is not within the remit and scope of the Project.

Notwithstanding, the TTIA notes that:

“Transport for Victoria [now Department of Transport] is undertaking a review of bus routes across the north-east to integrate the new project scope with the broader public transport network”.

EPR T1 requires the contractor to:

“Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Work with relevant public transport authorities 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 North East Link”.

I am satisfied that the EPR will satisfactorily preserve required Project outcomes.

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54 (Transport and Traffic Impact Assessment, 2019, p. 276)
55 (North East Link Environmental Effects Statement, 2019, pp. 27-62)
5.4.3. Maroondah City Council (Submission 402)

Summary

Overall, Council supports the objectives of the Project, conditional on appropriate traffic considerations and ancillary works being made to areas affected by the Project, including the impact of the Project on the EastLink tunnels, the Ringwood Bypass and the Ringwood Activity Centre.

Project Concerns

C15. Concerns regarding the impact of the Project on the EastLink tunnels the Ringwood Bypass and the Ringwood Activity Centre. Cites a previous study commissioned by Council that indicates “the project would potentially fail” and have a detrimental impact on the Ringwood Activity Centre without ancillary works to alleviate pressure on EastLink tunnels and the Ringwood Bypass.

The TTIA notes that:

“Traffic flow near the EastLink tunnels often breaks down in peak periods, however, this is not due to a lack of capacity in the tunnel itself, but rather upstream and downstream bottlenecks… In the AM peak, the inbound Springvale Road on-ramp carries high traffic volumes which enters the freeway without the control of ramp signals. This uncontrolled entry causes flow breakdown on the Eastern Freeway, which then sends a congestion ‘shockwave’ back through the EastLink tunnels. This is exacerbated by unmetered traffic entering from the Ringwood Bypass onto EastLink before the tunnel. This high-volume movement is very close to the tunnel portal and when combined with the congestion caused by the Springvale Road entry ramp, average speeds in the tunnel drop significantly.”

GTA’s independent review of the operations model for the ‘with project’ case confirms that the above statement is accurate. Outputs from the model for Tunnel Link Average Speeds, reflecting an average of the AM and PM 2-hour peaks are set out in Table 5.3. The posted speed limit within the tunnels is 80km/hr. The result in the table indicate satisfactory operation will be maintained despite increases in traffic demand.

56 (Transport and Traffic Impact Assessment, 2019, p. 129)
Table 5.3: EastLink Tunnel Average Speeds for 2036 ‘with project’ Outcome

<table>
<thead>
<tr>
<th>Period</th>
<th>Direction</th>
<th>Average Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM Peak</td>
<td>WB</td>
<td>78.04km/hr</td>
</tr>
<tr>
<td></td>
<td>EB</td>
<td>82.95km/hr</td>
</tr>
<tr>
<td>PM Peak</td>
<td>WB</td>
<td>79.61km/hr</td>
</tr>
<tr>
<td></td>
<td>EB</td>
<td>81.57km/hr</td>
</tr>
</tbody>
</table>

Finally, the project team have made available a memorandum setting out further and detailed advice on EastLink tunnel performance. The conclusions in that memorandum, include:

“Modelling indicates that the traffic performance of the EastLink tunnels and surrounds is forecast to generally improve in the ‘with project’ scenario. The key outcomes from this analysis were:

- Inbound AM peak travel speeds at the approach to the Springvale Road interchange are forecast to improve significantly. This is primarily due to the implementation of ramp metering at the inbound Springvale Road entry ramp.
- Travel speeds inside the EastLink tunnels are forecast to remain approximately unchanged between the ‘with project’ and ‘no project’ scenario, and operate at close to sign-posted speeds in both cases.
- Outbound PM peak travel speeds at the Blackburn Road overpass are predicted to improve due to the removal of the lane drop.

This shows that no physical capacity improvements (such as lane widening) is required in the EastLink tunnels due to the North East Link.”

C16. Concern that, alternatively, the Project would displace users onto arterial roads near the Ringwood Activity Centres to avoid route sections with capacity shortfalls.

Modelling presented in the TTIA shows that traffic volumes on arterial roads in the vicinity of Ringwood Activity Centre (including Ringwood Bypass, Maroondah Highway, Warrandyte Road and Mt Dandenong Road) are expected to remain unchanged (or increase negligibly) over the course of a day in the 2036 ‘with project’ scenario compared to the 2036 ‘no project scenario’.  

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57 (Transport and Traffic Impact Assessment, 2019, p. 294)
The TTIA also presents an assessment of LOS at Ringwood Bypass/Ringwood Street and Maroondah Highway at EastLink during peak hours. The LOS is generally expected to remain unchanged or improve as a result of the Project.\(^{58}\)

C17. Concerns that the lack of detail available until design is completed and the EES is released does not allow the implications of the four alignment options to be understood.

Project corridors were subject to separate technical investigations and community consultation in 2017, during which Corridor A was selected.\(^{59}\) The selection of the Project boundary is set by the Public Works Order (which broadly reflects Corridor A) for North East Link\(^{60}\) and is not subject to review through this EES process.

Recommendations & Requests

R33. Seeks for the selected alignment to best meet the high-level objectives of the Project and the Transport Integration Act 2010.

Section 3 of this report outlines an assessment of the Project’s alignment with key transport policies, strategies and relevant reference legislation.

R34. Full traffic modelling and detailed assessment of the Ringwood Bypass and the Ringwood Activity Centre to determine the impacts of the Project on Ringwood.

Detail is provided in the EES on nodes outside the Project corridor which include Ringwood Street and the Maroondah Highway with EastLink. Traffic performance outcomes for these nodes appears to be consistent or better than those under the ‘no project’ outcome.\(^{61}\)

R35. Seeks ancillary projects to be included in the Project, such as:

- additional road capacity into and out of Ringwood, such as upgraded/duplicated tunnel access to the Ringwood Bypass
- delivery of the ‘Northern Arterial’
- delivery of the Healesville Freeway
- introduction of a right-turn exit off EastLink onto Maroondah Highway from the south

Refer to response to C14.

- consideration or bus or rapid bus transit between activity centres and along any new arterial roads

Refer to response to C14 – the planning and integration of the Project with the broader bus network (including routes) is not within the remit or scope of the Project.

- complementary rail upgrades (Hurstbridge, Lilydale, Belgrave)

\(^{58}\) (Transport and Traffic Impact Assessment, 2019, p. E117 to E120)
\(^{59}\) (North East Link Environmental Effects Statement, 2019)
\(^{60}\) (Public Works Order: North East Link Project, 2018, p. 3)
\(^{61}\) (Transport and Traffic Impact Assessment, 2019, p. E117 to E120)
Refer to response to C14, noting that the Scoping Requirements indicate that “North East Link’s construction activities may require upgrade of rail infrastructure such as signalling, overhead and track assets and access works within the existing rail reserve between Greensborough railway station and Grimshaw Street and between Watsonia railway station and Macleod railway station. These works would be required to support changes to rail operations that may result from any alteration, construction or installation or structural works over the Hurstbridge Rail Line”.62

- active transport along the full length of the project and any complementary ancillary projects.

Complementary active transport projects are considered at Section 5.9.3.

5.4.4. Knox City Council (Submission 681)

Summary

Knox City Council prepared a submission which provided comments general to the Project, as well as specific concerns in the context of the municipality. All of the comments pertain to traffic and transport issues, particularly at the Eastern Freeway interface and through wider traffic impacts along EastLink and at its interchanges. Overall, Council is generally supportive of the need for the Project.

The concerns raised in Knox City Council’s submission are outlined below, followed by my response to assist the IAC.

Project Concerns

Impact of Suburban Rail Loop

C18. Acknowledging its announcement may have come late in the EES process, the submission contends that the orbital rail proposal will service many key trip attractors in Melbourne’s north and east and its impacts on the Project should be considered. The orbital rail proposal may change the outcomes of the Project.

The North East Link Project Public Works Order was gazetted in February 2018 and the EES Scoping Requirements were settled in June 2018. The Suburban Rail Loop was announced in August 2018, which is after the core scoping documents were confirmed and therefore the Project sits outside the scope of assessment within the EES.

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62 (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 2)
Design

C19. Concern regarding the scale of impact and loss of amenity of the proposed Bulleen Road interchange. The submission notes that the quantum of traffic lanes appears “extreme” and exceeds that of the Monash Freeway at its widest point.

To assist with any review, Table 5.4 below summarises the number of lanes in each section of the Eastern Freeway under existing conditions and in the ‘with project’ reference design.

**Table 5.4: Number of Traffic Lanes on Eastern Freeway**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Eastbound</th>
<th>Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Future</td>
</tr>
<tr>
<td>Hoddle Street to Chandler Highway</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chandler Highway to Belford Road</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Belford Road to Burke Road</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Burke Road to Bulleen Road</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Bulleen Road to Doncaster Road</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Doncaster Road to Tram Road</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Tram Road to Middleborough Road</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Middleborough Road to Blackburn Road</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Blackburn Road to Springvale Road</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

As shown, up to four additional lanes are added in each direction to the Eastern Freeway. There are three key reasons for this, outlined below, drawing on advice provided by the Project team on similar queries raised by the community:

“Widening the Eastern Freeway to increase the number of lanes is required to meet the performance targets of Level of Service D. Without these lanes, traffic performance on the

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63 (Eastern Freeway Overall Alignment Plan - Reference Design Update 1 - Rev A, 2019)
Eastern Freeway would deteriorate which may see traffic diverting to and further congesting local roads and the arterial network".64

This outcome is in part the product of choosing Corridor A through the business case process. Using the Eastern Freeway brings efficiencies in use of existing infrastructure; however, some capacity improvements are needed to accommodate the additional forecast traffic demand. This is also the product of a more dominant bias (75%) of the North East Link traffic travelling to/from the eastern portion of the Eastern Freeway.65

Further, the reference design proposes a ‘collector-distributor’ design which separates traffic travelling along the length of the corridor (i.e. from the city to Middleborough Road, Blackburn Road and beyond) to ‘express lanes’, divided by solid safety barriers and essentially creating two parallel networks in each direction for part of the corridor. This arrangement improves freeway efficiency and safety by minimising weaving but requires new lanes to separate traffic remaining on the freeway from traffic entering and exiting the freeway standard corridor.66

Lastly, the section of the Eastern Freeway between Tram Road and Middleborough Road is currently used by locals for short trips between Doncaster and Box Hill, with approximately 400-500 vehicles during peak periods. The EES notes that this is “largely because the nearest alternative arterial road routes, Doncaster Road and Whitehorse Road, are remote from the Eastern Freeway and there are no easily usable local road alternatives between Doncaster Road and Whitehorse Road”. Instead, the reference design provides dedicated lanes for trips between Tram Road and Middleborough Road to maintain these traffic movements without impacting on freeway or local arterial road functionality.67

Planning Approach

C20. The submission commends the provision of bus rapid transit along the Eastern Freeway, however, notes that it does not represent a significant shift from existing operational model.

Please refer to C14 –delivering an outcome that ‘significantly shifts’ the bus operational model is beyond the remit and scope of the Project.

C21. The submission challenges whether greater consideration to addressing public transport gaps in Melbourne’s east as complementary projects would reduce the need for such an “extreme outcome”. Concerns that the project was planned as a ‘road project’ and did not consider a number of public transport opportunities, such as:

- Modelling of a rail-based public transport corridor along the freeway reservation and its impacts on private vehicle travel.

64 (Transport and Traffic Impact Assessment, 2019, p. 63)
65 (Transport and Traffic Impact Assessment, 2019, p. 317)
66 (North East Link Environmental Effects Statement, 2019, pp. 6-48)
67 (North East Link Environmental Effects Statement, 2019, pp. 6-50)
The North East Link Project Business Case defines the problem and high-level objectives for the Project to:68

- Improve business access and growth in Melbourne’s north, east and south east
- Improve household access to employment and education in Melbourne’s north, east and south east
- Improve freight and supply chain efficiency and industrial growth across the north, east and south east
- Improve access, amenity and safety for communities in the north east

The Business Case then describes 15 potential strategic interventions to address the problems and objectives, including increasing supply by “adding a new rail connection”, albeit not along the freeway corridor. Instead, this intervention explored “constructing a spur line from Hurstbridge railway line to La Trobe NEIC or extending Tram Route 86 to employment centres in the north east”68 as a ‘public transport and freight’ package, in order to meet the freight objective.

The options assessment found that this would be the most expensive option, several orders of magnitude higher than the progressed option, as:

“a significant proportion of the cost comprises the new intermodal freight rail network, which assumes a major upgrade to the existing Craigieburn and Cranbourne-Pakenham railway lines (approximately 73 km) to facilitate rail freight between Donnybrook and Dandenong. This would require extensive tunnelling underneath the central city, significant land acquisition along the rail corridors (which traverse densely populated growth areas) and conversion of railway tracks from broad gauge to standard gauge to suit the existing interstate rail network”.

Aside from monetary cost, the ‘public transport and freight’ option was found to “comprise significant planning and construction lead time” and “present the most risk” compared to other options due to the need for land acquisition, potential disruption to rail services and to implement rail operational changes. As a result, other options were preferred over the ‘public transport and freight’ package, and the option was not progressed.

In my view, public transport alternatives have been given some consideration and revisiting the business case sits outside of the terms of reference for the EES as well as the IAC.

- Extension of the proposed dedicated bus rapid transit corridor along the Eastern Freeway beyond Doncaster Road, potentially to Springvale Road.

68 (North East Link Business Case: Section 1: Melbourne’s orbital mobility challenge: Chapters 1 to 4, 2018), p. 3-6 (objectives), p. 4-2 (interventions), p. 4-4 (rail intervention)
As established in the response to C14, the Public Works Order for North East Link sets the extent of the Project’s bounds and includes *Eastern Freeway upgrades - Eastern Freeway upgrades – from around Hoddle Street in the west through to Springvale Road in the east, modifications to the Eastern Freeway would include widening to accommodate future traffic volumes, provision of new dedicated bus lanes for rapid bus services and associated works*”.69

The Business Case for North East Link provides further detail on the extent of the busway corridor east of Doncaster Road, noting that:

“due to limited space, there is no provision made for Doncaster Busway lanes east of Doncaster Road. Consistent with existing Eastern Freeway bus services, Doncaster Area Rapid Transit (DART) buses will operate via hard shoulder running east of this point or via the central express lanes. The DART buses will be able to use the hard shoulder except at entry and exit ramps and at two underpass locations (with minimum shoulder widths provided at the underpasses), where buses will merge into and out of mainline traffic”.70

I understand the EES relied on this previous review as well as sought guidance from DoT to extend the busway beyond Doncaster Road.

- **Provision of high-quality bus services along the full length of North East Link.**

Refer to response to C14 – the planning and integration of the Project with the broader bus network (including routes) is not within the remit or scope of the Project.

Notwithstanding, the TTIA notes that “Transport for Victoria [now Department of Transport] is undertaking a review of bus routes across the north-east to integrate the new Project scope with the broader public transport network”.71

The Project does allow the opportunity for buses to travel along other parts of the freeway corridor in a manner that is better than a ‘no project’ outcome, however movement would be commingled with other traffic.

C22. **Comment that nominal differences between the modelled volumes of the Project Case compared to the No Project Case (particularly in peak direction) imply the EastLink tunnels are already operating at capacity. Concern that additional traffic cannot be borne by the existing tunnels.**

A range of factors contribute to forecasts in transport demand on a road network including the capacity of the link. Others include overall origin-destination patterns as well as where growth in

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69 (Public Works Order: North East Link Project, 2018, p. 1)
70 (North East Link Project Business Case: Section 3: The North East Link - Chapters 6 to 10, 2018, pp. 6-12)
71 (Transport and Traffic Impact Assessment, 2019, p. 276)
population and employment is forecast to occur and the availability of supportive and complementary transport routes.

The forecasts set down for the corridor including the tunnels are from the strategic model. Enquiries can be made with the strategic modellers around the assumptions being made for the tunnels and the volume to capacity ratios which eventuate for this section of the project.

On performance of the tunnels themselves, the GTA modelling team reviewed the operations model and confirm satisfactory performance within the tunnels. Importantly, these model reviews confirm observations made by the project technical team which indicate upstream operational improvement, particularly on the Eastern Freeway addresses an existing congestion shockwave which stretches along the corridor and into the tunnels.

Recommendations & Requests

A summary of the recommendations, requests or suggestions (including those referred to in-text) is outlined below. It is reiterated that these recommendations are summarised and are the views of the respondent – I have provided by response to each recommendation beneath to assist the IAC.

R36. Query as to why operational performance at the Hoddle Street end of the Project was deemed out of the scope of the traffic modelling. The submission contends that this represents a significant flaw in understanding the performance of the Project as a whole. Modelling of Hoddle Street end of the Project should be addressed immediately.

Please refer to response to C5.

R37. Concerns the EES does not provide commentary on the additional traffic anticipated in the vicinity of EastLink and the Mullum Mullum tunnels. Concerns that the Project may have a material impact on the performance of the tunnels and key interchanges immediately to the north and south of the tunnels. Comment that a more detailed assessment of the overall performance of EastLink in the vicinity of the Mullum Mullum tunnels is warranted.

Investigations indicate that the Mullum Mullum and Melba Tunnels connecting Eastlink with the Eastern Freeway are forecast to experience modest increases in traffic activity under the 2036 ‘with project’ compared to 2036 ‘without project’ outcome.

The operations model prepared for the Project includes the tunnels as well as key nodes on either side of the tunnels including Springvale Road to the west and the Maroondah Highway and Ringwood Street to the east. Nodes both sides of the tunnels operate in the 2036 planning horizon either at ‘no project’ levels or better (refer LOS diagrams contained in the EES).

On performance of the tunnels themselves, refer response to C15.
5.4.5. Nillumbik Shire Council (Submission 691)

Summary

The submission from Nillumbik Shire Council covers a broad range of themes and disciplines, including a number of matters related to traffic and transport issues. The submission is structured to present Council’s concerns, alongside a proposed response or action. The Council also provides a list of complementary projects which it seeks to be delivered as part of the Project. This structure is reflected below, along with my response to assist the IAC.

Overall, Council recognises the need for the Project and its role in providing the ‘missing link’ in Melbourne’s north-east and reaffirms its preference for Corridor A. Council acknowledges that the Project does not run through the Nillumbik’s boundaries, but notes that the Project will have both direct and indirect impacts on the municipality. Many of the concerns regard the way the Project is framed in the EES, with a focus on the eastern suburbs and limited reference to areas to the Project’s north-east.

Project Concerns

Project Extent/Focus of EES

C23. Concerns that the map (Figure 9-21) of existing cycling infrastructure does not adequately regard the Principal Bicycle Network and Strategic Cycling Corridors north of, or abutting, the NEL study area, particularly given there are key attractors which would benefit from improved cycling infrastructure.

Figure 9-21 shows the North East Link corridor in the context of existing Strategic Cycling Corridors, Principal Bicycle Networks and activity centres. A review of that figure confirms that it does not show cycling corridors or bicycle networks to the north of the NEL study area.72

The relevant Scoping Requirement stipulates that the EES must:

“Describe the proposed transport network design features and approach to optimise and integrate the project with the existing pedestrian and bicycle network, including any proposed

[72] (North East Link Environmental Effects Statement, 2019, pp. 9-41)
solutions to enhance pedestrian and bicycle access in the vicinity of the project”\(^{73}\)\(\text{bold my emphasis}\).

Despite the context map not showing cycling links or activity centres to the north, I am satisfied that the reference design provides adequate linkages to existing cycling trails, including new shared paths or connections to existing shared paths along the M80 corridor and Greensborough Bypass, which link to the Plenty River Trail and beyond.\(^{74}\) Other active transport complementary projects have been assessed separately where requested, with my findings presented at Section 5.9.3. Beyond the Project boundary, new walking or cycling works would fall outside the scope of the Project (refer to response to C14) unless there were any identifiable gaps which connect the project with existing path networks.

C24. Concerns that the map (Figure 9-37) of upgrades in the context of schools and activity centres does not have regard for University Hill immediately to the north of the map extents and the importance of how these precincts connect to the south.

Figure 9-37 shows cycling upgrades along the Greensborough Road corridor in the context of schools, activity centres and the road network. I agree that Figure 9-37 does not show University Hill and RMIT University immediately to the north of the map extents.\(^{75}\)

However, I am satisfied that adequate connections have been provided to existing shared paths in accordance with the Project Scoping Requirement (including shared paths which connect to provide pedestrian access to University Hill).

Given other projects (such as a new cycling link to University Hill) would fall outside the scope of the Project (refer to response to C14), it is my view that the outcomes would not differ had University Hill been shown on the map.

Construction Impact

C25. Notes conflicting statement that 24-hour construction would avoid workers arriving in on-road peak hour traffic with subsequent statement that construction would operate in two shifts from 7am-7pm and 7pm to 7am – that is, in on-road peak hours.

The GTA Peer Review Report raised a similar finding. A review of VicRoads Traffic Profiles in the vicinity of North East Link construction sites identified a morning peak occurring at 7:00am and a wider evening peak occurring at approximately 5:00pm.\(^ {76}\) From this review, construction traffic is anticipated to arrive at or immediately before the peak of the morning peak period and depart near the evening peak hour.\(^ {77}\)

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\(^{73}\) (North East Link Environmental Effects Statement, 2019, pp. 9-41)

\(^{74}\) (North East Link Environment Effects Statement Map Book - Part 1, 2019), Sheets 2 and 3

\(^{75}\) (North East Link Environmental Effects Statement, 2019, pp. 9-104)

\(^{76}\) VicRoads Traffic Profiles, as cited in (North East Link (NEL) Environment Effects Statement: Traffic and Transport Peer Review, 2019, p. 68)

\(^{77}\) (North East Link (NEL) Environment Effects Statement: Traffic and Transport Peer Review, 2019, p. 68)
On this issue, EPR T2 provides a suitable safeguard which requires Traffic Management Plans to be supported by “an appropriate level of transport modelling and must include… requirements for maintaining transport capacity in the peak periods”, “a monitoring program to assess the effectiveness of the TMPs on all modes of transport” and “where monitoring identifies adverse impacts, practicable mitigation measures”.\(^{77,78}\)

C26. Concerns about traffic movement through the Shire towards construction sites.

Refer to response to R134.

**Environmental Performance Requirements (EPRs)**

C27. Concerns that EPR T2 does not provide any measure relating to construction worker traffic.

EPR T2\(^{79}\) requires that:

“Prior to commencement of relevant works, develop and implement Transport Management Plan(s) (TMP) to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and bicycle movements and existing public facilities during all stages of construction.”

EPR T2 further requires that the TMP “must be informed and supported by an appropriate level of transport modelling” and must include:

\(^{78}\) (North East Link Environmental Effects Statement, 2019, pp. 27-63)

\(^{79}\) (North East Link Environmental Effects Statement, 2019, pp. 27-63)
• Requirements for maintaining transport capacity in the peak periods
• Requirements for limiting the amount of construction haulage during the peak periods
• A monitoring program to assess the effectiveness of the TMPs on all modes of transport
• Where monitoring identifies adverse impacts, practicable mitigation measures.

I am satisfied that the wording of the EPR is sufficiently broad to account for construction worker traffic as part of any TMP and the required assessment of the adequacy of that plan through monitoring.

C28. Concerns that EPR T2 does not clearly define “practicable” in the context of construction haulage avoiding local streets where practicable.

Refer to response to R135.

C29. Concerns that EPR T2 has made no consideration to the quantum of vehicles per day impacting local streets.

Refer to response to C104.

Recommendations & Requests

R38. Seeks that Corridor A remains the ‘final route’ at the conclusion of the EES process.

The selection of the Project boundary is set by the Public Works Order for North East Link and is consistent with Corridor A. On my review of the IAC terms of reference, the Project route cannot be changed through the EES process.

R39. Concerns regarding impact of Project (construction and operation) on Diamond Creek Road, including projected increase of 10,000 trips per day between the M80/Greensborough Bypass and Yan Yean Road. Concerns that this has not been explicitly mentioned in the list of local and arterial roads which would experience increased volumes. Seeks an upgrade of Diamond Creek Road between Greensborough Bypass and Yan Yean Road with additional lanes and urban design improvements due to increased traffic volumes from NEL and population growth.

The change in traffic volumes between the 2036 ‘no project’ and 2036 ‘with project’ cases on Diamond Creek Road and the Greensborough Bypass (north of the M80) are reproduced at Table 5.5.

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80 (Public Works Order: North East Link Project, 2018, p. 3)
Table 5.5: 2036 ‘no project’ average weekday daily volumes compared to 2036 ‘with project’

<table>
<thead>
<tr>
<th>Road Segment</th>
<th>2036 ‘no project’</th>
<th>2036 ‘with project’</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greensborough Bypass – M80 interchange to Diamond Creek Road (eastbound)</td>
<td>26,000–33,000</td>
<td>31,000–40,000</td>
<td>+5,900</td>
</tr>
<tr>
<td>Greensborough Bypass – M80 interchange to Diamond Creek Road (westbound)</td>
<td>29,000–38,000</td>
<td>33,000–43,000</td>
<td>+4,600</td>
</tr>
<tr>
<td>Diamond Creek Road – Civic Drive to Yan Yean Road (eastbound)</td>
<td>24,000–31,000</td>
<td>28,000–37,000</td>
<td>+5,200</td>
</tr>
<tr>
<td>Diamond Creek Road – Civic Drive to Yan Yean Road (westbound)</td>
<td>24,000–32,000</td>
<td>28,000–36,000</td>
<td>+4,300</td>
</tr>
</tbody>
</table>

As shown, volumes are expected to increase in the order of 4,000-6,000 vehicles per day on these links. It is noted that reference to an increase of “10,000 trips per day” per Council’s submission likely refers to the two-way differential.

To better understand the impacts of these traffic volume increases, further information was requested from the technical team on the operational performance of this part of the network.

The memorandum received from the project team indicates that this part of the network would reach an undesirable level of stress and will be required to be upgraded. The memorandum goes on to note that the upgrade will be delivered by others (DoT, formerly VicRoads). Specific details of the upgrade were not available at the time of writing this report.

R40. Seeks upgrade of the intersection of Diamond Creek Road/Civic Drive intersection due to increased traffic volumes from NEL and population growth.

Refer response to R39 above.

R41. Seeks installation of signals across Diamond Creek Road at the Pipe Track.

Complementary active transport projects are considered at Section 5.9.3.

R42. Seeks on-road bicycle lanes between Civic Drive, Greensborough and existing lanes on Heidelberg – Kinglake Road in Diamond Creek.

Complementary active transport projects are considered at Section 5.9.3.

R43. Seeks upgrade of Fitzsimons Lane, Eltham, including urban design improvements and upgrades to pedestrian access at Falkiner Street.

Complementary active transport projects are considered at Section 5.9.3.
R44. Seeks upgrade of Main Road, Eltham between Fitzsimons Lane and Bridge Street to increase capacity and provide safety improvements.

Traffic volumes on Main Road, Eltham are projected to decrease by a nominal amount as a result of North East Link, as shown in Table 5.6.

Table 5.6: 2036 ‘no project’ average weekday daily volumes compared to 2036 ‘with project’ volumes – Main Road, Eltham between Bridge Street and Fitzsimons Lane.

<table>
<thead>
<tr>
<th>Road link</th>
<th>2036 ‘no project’</th>
<th>2036 ‘with project’</th>
<th>Change (assuming midpoint)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Road – at Diamond Creek (northbound)</td>
<td>13,000–17,000</td>
<td>12,000–16,000</td>
<td>-1,000</td>
</tr>
<tr>
<td>Main Road – at Diamond Creek (southbound)</td>
<td>13,000–16,000</td>
<td>11,000–15,000</td>
<td>-1,500</td>
</tr>
</tbody>
</table>

While there are other reasons for upgrades beyond road capacity, for the purposes of determining the Project’s contribution to the need for these upgrades, the Project is not expected to increase but rather decrease traffic demand on this link.

I am therefore satisfied that upgrades of Main Road, Eltham between Fitzsimons Lane and Bridge Street falls outside the scope of this Project.

R45. Seeks signalisation of intersection of Mt Pleasant Road/Main Road in Eltham.

Main Road in Eltham is envisaged to have reduced or unchanged traffic volumes as a result of North East Link. Average weekday daily traffic volumes along various links of Main Road in the 2036 ‘no project’ and 2036 ‘with project’ scenarios are reproduced from the TTIA at Figure 5.6.

Figure 5.6: 2036 ‘no project’ and 2036 ‘with project’ average weekday daily volumes at various segments of Main Road, Eltham

81 (Transport and Traffic Impact Assessment, 2019, pp. D-40 to D-41)
While there are other reasons for upgrades beyond road capacity, for the purposes of determining the Project’s contribution to the need for these upgrades, the Project is not anticipated to degrade traffic conditions on this link. Therefore, I am satisfied that this upgrade does not fall within the scope of NEL.

R46. Seeks provision of a Park and Ride Facility at Eltham Lower Park within the carpark area on the eastern side of Main Road, Eltham.

The Project Scoping Requirements state under Design and Mitigation Measures:

“Describe any potential public transport priority treatments, such as signal priority and tram/bus lanes, to enhance public transport access and uptake and minimise any adverse impacts on traffic and other public transport users’ journeys including travel to stops and stations during construction”.

The requested project falls outside this Project Scoping Requirement. The Project Scoping Requirement Evaluation objective goes on to require the management of effects on sub-disciplines such as public transport. The proposed Park and Ride Facility sits outside the applicable “management objective”.

R47. Seeks road and pedestrian safety improvements along Bible Street, Eltham.

The Project Scoping Requirement’s state under Design and Mitigation Measures:

“Describe the proposed transport network design features and approach to optimise and integrate the Project with the existing pedestrian and bicycle network, including any proposed solutions to enhance pedestrian and bicycle access in the vicinity of the Project.”

The requested project falls outside the Project Scoping Requirements based on the test around vicinity.

R48. Seeks upgrade of intersection of Eltham-Yarra Glen Road and Kangaroo Ground – St Andrews Road in Kangaroo Ground.

Eltham-Yarra Glen Road is expected to have reduced or unchanged traffic volumes as a result of North East Link. Average weekday daily traffic volumes along various links of Eltham-Yarra Glen Road in the 2036 ‘no project’ and 2036 ‘with project’ scenarios are reproduced from the TTIA at Figure 5.7.
As shown in Figure 5.8, volumes are also projected to decrease or remain unchanged along Kangaroo Ground-St Andrews Road.

Figure 5.8: 2036 ‘no project’ and 2036 ‘with project’ average weekday daily volumes at various segments of Kangaroo Ground-St Andrews Road

While there are other reasons for upgrades beyond road capacity, for the purposes of determining the Project’s contribution to the need for these upgrades, the Project is not anticipated to degrade traffic conditions on this link.

On this basis as well as being well outside the vicinity of NEL, I am satisfied that this upgrade does not fall within the scope of the Project.

R49. Seeks pedestrian safety and urban design improvements on Aqueduct Road, Diamond Creek.

Complementary active transport projects are considered at Section 5.9.3.

R50. Seeks completion of the Aqueduct Trail between Greensborough and Yarra Glen, generally along the Maroondah Aqueduct.

Complementary active transport projects are considered at Section 5.9.3.

R51. Seeks safety and alignment improvements to the Diamond Creek Shared Trail between Alastair Knox Park and Edendale Farm.

Complementary active transport projects are considered at Section 5.9.3.

R52. Seeks extension of the Diamond Creek Trail between Diamond Creek and Hurstbridge.

Complementary active transport projects are considered at Section 5.9.3.

R53. Seeks delivery of a trail along the rail corridor between Eltham and Montmorency.

Complementary active transport projects are considered at Section 5.9.3.
R54. Seeks removal of the level crossing at Main Hurstbridge Road, Diamond Creek.

Traffic volumes are anticipated to remain unchanged or marginally increase across the day on Main Hurstbridge Road as a result of the Project, as shown at Table 5.9.

Table 5.9: 2036 ‘no project’ and 2036 ‘with project’ average peak hour volumes on Main Hurstbridge Road at Diamond Creek

<table>
<thead>
<tr>
<th>Road Segment</th>
<th>2036 ‘no project’</th>
<th>2036 ‘with project’</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AM peak traffic – two-hour volumes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastbound</td>
<td>900-1,200</td>
<td>900-1,200</td>
<td>Nominal</td>
</tr>
<tr>
<td>Westbound</td>
<td>1,800-2,300</td>
<td>1,900-2,400</td>
<td>+100</td>
</tr>
<tr>
<td><strong>PM peak traffic – two-hour volumes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastbound</td>
<td>2,000-2,600</td>
<td>2,100-2,700</td>
<td>+100</td>
</tr>
<tr>
<td>Westbound</td>
<td>1,400-1,800</td>
<td>1,400-1,800</td>
<td>Nominal</td>
</tr>
</tbody>
</table>

Train services are also relatively infrequent in this section – appreciating there may be uplift in services in the future, there are currently up to three inbound services per hour and three outbound services per hour at Diamond Creek in the weekday peak hours.

While there are other reasons for upgrades beyond road performance, for the purposes of determining the Project’s need for this level crossing removal, considerations reveal an insufficient evidential basis to justify its inclusion. The location of this upgrade is also well outside the declared Project boundary.

R55. Seeks installation of bicycle cages at Diamond Creek, Wattle Glen and Hurstbridge railway stations.

Complementary active transport projects are considered at Section 5.9.3, however these stations are sufficiently remote from North East Link that they would not fall outside the Scoping Requirements of the Project.

R56. Seeks signalisation of intersection of Pryor Street/Main Road in Eltham.

The intersection of Pryor Street and Main Road in Eltham is currently an unsignalised intersection providing left-in, left-out access, with a nearby right-turn lane immediately to the south providing dogleg access to Eltham Station.

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84 (Transport and Traffic Impact Assessment, 2019, pp. D-40)
Consistent with response R45, traffic volumes on Main Road in Eltham are expected to decrease as a result of the Project, including in both directions along the segment which Pryor Street intersects (Wattletree Road to Bridge Street). While there are other reasons for upgrades beyond road performance, for the purposes of determining the Project’s contribution to the need for upgrade, the Project is not anticipated to materially degrade traffic conditions on this link. Therefore, I am satisfied that this upgrade does not fall within the scope of the Project.

R57. Seeks additional bus services to rural communities (some examples listed).
Refer to response to C14. I consider this outside the scope of the Project.

R58. Seeks controls to mitigate the risk of road-related wildlife crashes on the Nillumbik road network.
Refer to response to C14. I consider this outside the scope of the Project.

R59. With respect to EPR T1, seeks clarification as to why there are proposed adverse impacts on all transport modes, including walking and cycling, as a result of Project operation. Seeks to change EPR T1 to specify locations where this statement is relevant.

It is noted that in many cases (and in the case of the Project overall), travel times will improve as a result of the Project. However, in some localised locations, travel times may deteriorate – for example, by creating a more circuitous route or increasing demand for a particular link. The intention of EPR T1 is to provide a suitable safeguard so that when the contractor optimises the design of the works as part of the detailed design process, the outcomes minimise these negative (adverse) impacts.

On specifying locations, the exhibited Project design is a reference design and represents one Project outcome. An alternate Project or sub-project outcome may eventuate which could have different impacts on specific parts of the traffic and transport network. Maintaining a more general application is therefore considered appropriate.

R60. Seeks to change wording of EPR T1 to “enhance and where not practical as agreed by relevant authorities, maintain” (as opposed to ‘maintain, and where practical, enhance’).
Refer to response to C14. The Scoping Requirements set the overarching evaluation objective for the Project “to increase transport capacity and improve connectivity to, from and through the northeast of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the project on the broader and local road, public transport, cycling and pedestrian transport networks”.

It is my interpretation that the role of the Project is not to enhance all aspects of the transport network, but to increase transport capacity and improve connectivity within the Project’s bounds, while managing the effects on broader networks. I am satisfied that the wording of EPR T1 is consistent with this objective to maintain active transport movements as a minimum, whilst facilitating improvements where they are practicable.
R61. Seeks clarification on proposed construction shifts relative to on-road peak hour.  
Please refer to response to C25.

R62. Seeks that consideration be given to quantum of construction vehicles (per day) to ensure movements are appropriately spread (in terms of time and across areas).

Refer to response to C104.

R63. Seeks further work and consideration to rectify gaps in the off-road bicycle network including expanding the cycling network to connect with Diamond Creek and Eltham Activity Centres along creek corridors and via an expanded trail network through the delivery of Aqueduct Trail.

Complementary active transport projects are considered at Section 5.9.3.

R64. Seeks further assessment of how to mitigate potential construction impacts to regional facilities (examples listed), including access and noise.

Refer to response to C103.

R65. Seeks full access to the Construction Management Plan.

Following completion of the EES, the successful contractor will complete individual construction Transport Management Plans (TMPs). Preparation of the TMPs is guided by a number of requirements outlined within draft EPR T2, including the need for “an appropriate level of transport modelling”. The TMPs will require input from a number of agencies and stakeholders and will be approved by the relevant authorities.
5.4.6. Banyule City Council, Boroondara City Council and Whitehorse City Council – Joint Submission (Submission 716)

Summary

Maddocks Lawyers prepared a joint submission on behalf of Banyule City Council, Boroondara City Council and Whitehorse City Council (‘the Councils’). The issues cover a broad range of disciplines and matters, including many related to transport and adjacent disciplines, such as urban design. The overarching position of the Councils is that the Project should not be approved and cannot be justified as it is presented in the EES. The submission contends that:

“the decisions which have been made to date about the location and form of the Project described in the EES are misguided, based on biased, incomplete and incorrect data, reports and information and unfairly impose too great a burden on the environment and the people who live in the areas most affected than the alleged and overstated benefits of the Project justify” (paragraph 1.10)

The submission further notes that not all flaws are fatal to the Project and could be addressed by changes to design or EPRs, however there are aspects of the Project which raise fundamental concerns about its acceptability and that cannot be properly managed. Based on current material, the Councils are not satisfied that the Project will resolve environmental concerns and contend that benefits are not proven, and if proven, are not sufficient to justify the environmental and other costs of the Project.

The body of the submission provides the Councils’ overall views of the Project, followed by specific concerns raised by each Council. I have reflected a similar structure in summarising and responding to the traffic and transport issues below.

Project Concerns

Process

C30. Comment that the EES is based on a theoretical reference design, rather than the actual project and that the merit of this approach is dubious.

This approach is one of a range of available to government when considering the delivery of a major infrastructure project. An alternate format would include a design and construct
approach. Recent projects within Victoria include the Melbourne Metro project (reference design) and the Westgate Tunnel project (D&C).

In this case, the reference design reflects a ‘proof of concept’ and supports the preparation of an environmental impact (technical) review such as the exhibited TTIA. A reference design by its nature can be modified and is usually varied to account for innovation brought by market to the Project. Innovation may include either design, construction or both.

Finally, the origin of the requirement for a reference design is set down within the exhibited and subsequently approved Project Scoping Requirements (refer Section 3.3, Project Description).

Alignment

C31. Concerns regarding the suitability of Corridor A.

Project corridors were subject to separate technical investigations and community consultation in 2017 as part of the Business Case for North East Link. The suitability of this corridor sits outside the IAC terms of reference noting that the Project boundary is set out in the Public Works Order.

C32. Difficulty in understanding how ‘improved access to La Trobe NEIC’ will be realised in the absence of a direct connection to/from the Project, particularly given this contributed to the selection of Corridor A.

The La Trobe NEIC encompasses a broad area which stretches between Bundoora in the north, Preston to the south-west and Heidelberg to the south as depicted in the La Trobe National Employment and Innovation Cluster Draft Framework Plan March 2017 extract provided at Figure 5.10.

The Project corridor sits immediately east of the Latrobe NEIC and provides improved transport connectivity through the following key traffic routes:

- An extension of Kingsbury Drive via Ruthven Street and Erskine Road,
- Lower Plenty Road through a new Project interchange, and
- Banksia Street through a new Project interchange.

Beyond these transport accessibility routes, the Project delivers a range of active travel projects along the Project corridor, connecting the corridor to existing facilities contained within the Victorian Principle Bicycle Network (PBN) including other Strategic cycling corridors (SCC’s) such as the Darebin Creek Trail. The active travel enhancements complete and respond to a number of gaps in the strategic cycling network which will improve access to the La Trobe NEIC.

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85 (North East Link Environmental Effects Statement, 2019)
86 (Public Works Order: North East Link Project, 2018, p. 3)
87 (Transport and Traffic Impact Assessment, 2019, p. 425)
Lastly, the TTIA indicates that North East Link’s improved network connectivity will deliver general travel time improvements on the local arterial road network\(^{88}\). The TTIA also shows that bus travel times on routes to/from La Trobe University are expected to improve by between 5% and 15% in the AM peak inbound.\(^{89}\)

**Figure 5.10: La Trobe NEIC extract\(^{90}\)**

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**Design**

C33. Concerns regarding the design of the interchange of NEL at the Eastern Freeway and at Bulleen Road and the resulting environmental, social and urban design impacts. The submission contends that alternative designs which avoid some of these impacts have not been given adequate consideration or been properly assessed. Broader concerns regarding poor urban design outcomes at major interchanges.

The EES states that three options were assessed for potential interchange arrangements between North East Link and the Eastern Freeway. A tunnel to the south of the Veneto Club and short viaduct to the Eastern Freeway was progressed to the reference design. This option was selected based on balance of traffic functionality, footprint, visual and amenity impacts and

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\(^{88}\) (Transport and Traffic Impact Assessment, 2019, p. 393)

\(^{89}\) (Transport and Traffic Impact Assessment, 2019, p. 414)

\(^{90}\) (Plan Melbourne, 2017 - 2050, 2017)
impacts to residential properties and community facilities following the preparation of a multi-criteria assessment.\(^91\)

Three options were also assessed for the Manningham Road interchange, with a split diamond interchange with access to Avon Street selected as the reference design and a split diamond interchange without access to Avon Street selected as an alternate design. These options were selected based on a need to balance outcomes including a requirement to achieve suitable ramp grades, network capacity, traffic performance, cost and complexity and impact on properties and stakeholders surrounding the interchange (including Heide Museum of Modern Art).\(^92\)

Other factors (such as the need to maintain a performance target Level of Service of D or above) also shaped the reference design – refer to response to C19.\(^93\)

C34. Concerns the design of interchanges at Lower Plenty Road, Grimshaw Street and the M80 require extensive land, present poor urban design outcomes and offer sub-optimal traffic functionality.

The EES states that the M80 interchange reference design was progressed as it improves service road and local road access (including pedestrian overpasses) and allows for intersections at Grimshaw Street and Lower Plenty Road. The reference design also minimises visual and amenity impacts as it would be located within existing road corridors.\(^94\)

The Grimshaw Street interchange reference design was progressed as it improves traffic functionality and provides connectivity between Watsonia Neighbourhood Village and Grimshaw Street and service roads interface with the interchange and allow movements in all directions.\(^95\)

The Lower Plenty Road interchange reference design was progressed taking into account grades, suitable cover for a tunnel and minimising impacts on the community.\(^96\)

The proposed design meets Level of Service (LOS) project objectives which from a transport functionality perspective is one of the tests required to be met.

C35. Contention that consideration should be given to identifying opportunities to rationalise or reduce infrastructure where North East Link runs adjacent to Greensborough Highway (between the M80 and Lower Plenty Road).

It is agreed that where appropriate, allowing for the requirements under the Project Scoping Requirements and Public Works Order, consideration should be given to identifying opportunities.

\(^91\) (North East Link Environmental Effects Statement, 2019, pp. 6-22 to 6-27)
\(^92\) (North East Link Environmental Effects Statement, 2019, pp. 6-43 to 6-45)
\(^93\) (Transport and Traffic Impact Assessment, 2019, p. 276)
\(^94\) (North East Link Environmental Effects Statement, 2019, pp. 6-33)
\(^95\) (North East Link Environmental Effects Statement, 2019, pp. 6-36)
\(^96\) (North East Link Environmental Effects Statement, 2019, pp. 6-37)
opportunities to rationalise or reduce infrastructure where North East Link runs adjacent to Greensborough Highway”.

It is important however that LOS requirements for the project are met under an alternate design.

C36. Overall concerns that the Project is an engineering-led solution that has not had sufficient regard for, and in instances detracts from, urban design outcomes.

I defer to other experts called to give evidence on the Project by the proponent to advise on the adequacy of the urban design outcomes of the Project. On my review of the EES technical review report, project operational objectives around LOS are met.

C37. Opportunities to better integrate North East Link with the local area (as presented at Appendix F of the Business Case) warrant further consideration.

The statement is broad and requires specificity to more directly assist the IAC. Procedurally, the business case was followed by the preparation of the Public Works Order as well as the Project Scoping requirements. These have been relied upon to subsequently develop the EES. These documents provide a framework which informs the level of integration required by the Project.

Finally, it would appear that elements contained in Appendix F of the Business case have been transferred to the EES and reference design.

Over-Design

C38. Concerns the Eastern Freeway Upgrades are overdesigned and that the extent of the upgrades are excessive compared to future demand, with environmental impacts that are not justified. The submission contends that an alternative and more efficient design would provide more appropriate urban design, environmental and open space outcomes. The submission also seeks that if the significant upgrades are in anticipation of a future (unstated) project, this should be made transparent and the project assessed on its merit.

Refer to response to C19.

Impact on Surrounding Roads

C39. Concerns regarding local road closures and resultant impact on redirecting vehicle trips along other local roads. The submission contends that truncation of local roads connecting to arterial roads should be reviewed and retained where feasible. Concerns that the Project will cause unacceptable increases in traffic volumes on roads in the vicinity of the Project, with the potential for flow-on effects such as rat-running, frustration, inappropriate gap choice and reduced level of service. The submission contends the safety and impact of the Project have not been adequately assessed.

The GTA Peer Review Report highlighted where select local street truncations and or modifications could have an impact on network functionality and performance. It is evident that
where changes are proposed either through truncation or modification that the Project will generate localised redistributions.

The submission unfortunately is not location specific. Given this lack of specificity, to the extent I can comment, I agree that where feasible, local road connections to arterial roads should be maintained.

To the extent that the *EES* has considered these impacts, a range of strategic local streets have been specifically considered, these include Erskine Road and Watsonia Road. Traffic demands on these streets have been estimated and documented in the *TTIA* and respond, to the extent possible, to Scoping Requirements which require an assessment of redistributed traffic on both the regional and local street network.

The *TTIA* proposes several potential changes to local access to reduce ‘rat running’ and to facilitate improved performance on the approaches to the Project, such as closure of Avon Street and reconfiguration of Austin Street. Other local streets on the network are generally more minor in nature (have a low order role and function) and are not likely to involve the re-direction of high levels of traffic activity where the issues raised in the submission can be expected. I do however note that further research has been completed around the proposed truncation of Nell Street in Greensborough with a memorandum outlining the impact of changes to this part of the corridor network.

That memorandum provides background data for key local streets in the area and goes on to note that a high proportion of traffic along Nell Street is traffic which is bypassing Grimshaw Street given current day congestion along this corridor. A portion of this demand is expected to re-route to Grimshaw Street through improved performance of the network under the ‘with project’ outcome. The balance of demand (around 800 vehicles per day) is forecast to re-route to other local streets in the area. Based on this memorandum, forecast outcomes appear manageable.

On the requirement to specify traffic calming measures, the *TTIA* stops short of outlining traffic calming mitigation measures on any specific local roads which may be required to mitigate Project impacts. Acknowledging the (coarseness) limitations of the strategic model, the approach outlined in the *TTIA* is considered acceptable. This acceptability however is dependent on ensuring that the Project EPRs relating to mitigating local street impacts are sufficiently robust both during construction and under the post implementation phase of the Project to capture where necessary the installation of such features.

On this, EPR T5 requires that traffic monitoring be completed pre-construction, during construction and post-implementation and that local area traffic management works be

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97 (Transport and Traffic Impact Assessment, 2019, p. 334)
implemented in consultation with the local relevant Council. I am satisfied that this EPR provides adequate protection against potential adverse impacts.

C40. Concerns regarding delays associated with increased congestion in the absence of mechanisms to address congestion and queues at either end of the Eastern Freeway.

The EES as well as a subsequent memorandum of information and model review by GTA confirm that the effects at either end of the Eastern Freeway are manageable noting that around Ringwood performance is either no worse or better than the 'no project' outcome and around Hoddle Street, forecast uplift is minor and within day to day fluctuations for this part of the network. Further commentary on this is provided in the GTA Peer Review Report.

Impact on EastLink Tunnels

C41. Concerns that projected traffic volumes will contribute to the need to the duplicate the existing EastLink tunnels, which has not been considered in transport modelling or as a consequential effect of the Project. The submission contends that the cost, extents and land use implications of this Project need to be examined.

The TTIA notes that any increases in peak period traffic volumes at the EastLink tunnels would be within typical day-to-day fluctuations and could be accommodated by the road network.98

Also refer response C40.

Impact on Watsonia Activity Centre

C42. Concerns that insufficient consideration has been given to the impact of the Project on the Watsonia Activity Centre, including interaction between access/egress arrangements for motor vehicles and public transport.

Refer Section 4.2.3 of this report for a summary of additional information provided by the project technical team. Information contained within the EES and the subsequent memorandum provide sufficient consideration of operational issues within the Watsonia Activity Centre.

C43. Concerns an alternate Watsonia design was exhibited prior to the EES, but was not included in the EES.

The alternate design was subsequently uploaded for consideration separate to the EES. I expect the IAC will consider the alternate design at the upcoming hearing.

Amenity & Environmental Impacts (General)

C44. Concerns the open trench design of NEL between Grimshaw Street and Lower Plenty Road will divide communities in the area and impact liveability and social cohesion. Concern that

98 (Transport and Traffic Impact Assessment, 2019, p. 73)
the Project will exacerbate existing division of Watsonia. The submission contends that an extension of the tunnel from Lower Plenty Road to a short distance south of Grimshaw Street should be examined and expresses concern that it was not fully explored in the EES. Concerns that providing the freeway in a trench between Lower Plenty Road and Greensborough represents a poor-amenity outcome.

The EES notes that the trench approach was progressed to the reference design over a tunnel alternative for the following reasons:

- Gradient of the ramps from a tunnel would be too steep for vehicles to exit the tunnel at Grimshaw Street and Lower Plenty Road interchanges, in part to avoid impacting the Hurstbridge rail line.
- In a tunnel scenario, Lower Plenty Road interchange could not be constructed due to ramp grade issues with ramps only available to the north at the Grimshaw Street interchange, which limits access in these areas.

By comparison, a trench provides more amenable ramp gradients, reduces the number of large vehicles travelling south on Greensborough Road to Rosanna Road (via Lower Plenty Road).99

On any severance effect the TTIA notes that land bridges will be provided across the trench along Greensborough Road and existing pedestrian bridges have been retained.100 I also note that Greensborough Road and the rail corridor present existing severance challenges in this area.

Whilst I expect the issue of severance will be more specifically addressed by the urban design expert, I have undertaken a comparison of available east-west pedestrian connections along the Greensborough Road corridor between Kempston Street and Lower Plenty Road between existing and reference design scenario.

**Table 5.7: Pedestrian connectivity between existing and reference design scenarios**

<table>
<thead>
<tr>
<th>Crossings of Greensborough Highway (Existing)</th>
<th>Crossings of Greensborough Highway and NEL (Reference Design)(^\text{101})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kempston Street Underpass</td>
<td>Kempston Street Underpass</td>
</tr>
<tr>
<td>Grimshaw Street At-Grade Crossings</td>
<td>Grimshaw Street At-Grade Crossings</td>
</tr>
<tr>
<td>Nell Street Overpass</td>
<td>Teresa Street Overpass (relocated north)</td>
</tr>
<tr>
<td>Elder Street At-Grade Crossings</td>
<td>Frensham Reserve Overpass (relocated south)</td>
</tr>
</tbody>
</table>

99 (North East Link Environmental Effects Statement, 2019, pp. 6-19 to 6-22)
100 (Transport and Traffic Impact Assessment, 2019, p. 423)
101 (North East Link Environment Effects Statement Map Book - Part 1, 2019)
As shown in Table 5.7, crossings are broadly comparable between the two comparison scenarios, with three new crossings towards the south of this segment at Wattle Drive, Drysdale Street and Strathallan Road. Both types of crossings (overpasses/underpasses versus at-grade crossings) have advantages and disadvantages – for example, overpasses can be circuitous and at-grade crossings may require pedestrians to wait for an opportunity to cross. Separately, provision of a trench does reduce some ability for informal (between intersection) crossing across along the Greensborough Highway, which will be mitigated to some extent by provision of land bridges. Given forecast traffic levels on the Greensborough Highway, this type of activity (without control) will remain undesirable.

C45. Concerns the construction period will have significant impacts which have not been accounted for in the EES, including quantifying impact on productivity or travel times.

At this stage of planning, the role of the TTIA is to provide general indications of likely construction activity, proposals and their associated impacts, based on current information and in accordance with the project scoping requirements.

The construction assessment requires a range of assumptions, including those surrounding methodology and timeframes. By the time a detailed design is developed, and contractors seek to mobilise, the preferred tender or contractor may well propose an alternate methodology which alters the impacts associated with the construction of the project, including that resulting from design changes, inefficiencies or opportunities for innovation.

I am satisfied that at this stage of planning, the TTIA provides adequate consideration of potential construction routes, worksite arrangements and extents of closures and provide some further analysis as could be reasonably expected. Beyond this, it is the role of the EPRs to establish a clear framework to ensure those charged with undertaking a review of the detailed design(s) do so in a manner which aligns with best practice and is consistent with the requirements of the EES process.
To this end, the outcomes will depend largely on the proposed methodology and timeline proposed by the preferred tenderer or contractor(s) and that considerations around the volume and location of closures can be adequately considered within the framework of the proposed EPRs.

**Purported Benefits & Disbenefits**

C46. Submission contends that travel time savings (which are a considerable factor in calculating benefits) are overstated because the model assumes free flow conditions and does not adequately consider queues and congestion. While the EES acknowledges this constraint, it does not address the issue or reduce the benefits that flow from it.

The proponent has engaged an expert to report on the adequacy and robustness of the strategic modelling outputs relied upon by the EES from which these estimates have been derived. On calculated benefits, these have been relied upon to inform the Business Case which has since been resolved and relied upon to select Corridor A, well before the EES process commenced.

C47. Submission contends the sensitivity analysis undertaken in the Business Case assumed an un-tolled scenario and that application of tolls would likely have a material impact on traffic volumes.

The proponent has engaged an expert to report on the adequacy and robustness of the strategic modelling outputs relied upon by the EES from which forecast transport demand estimates have been derived.

C48. Submission contends that the modelled increase of 100,000 vehicles per day along the Eastern Freeway in the 2036 Project Case compared to the 2036 No Project Case cannot be explained.

The TTIA shows the anticipated traffic volume increases along various links of the Project corridor. The largest increase on the Eastern Freeway (2036 ‘with project’ compared to 2036 ‘no project’) is on the segment between North East Link and Doncaster Road, where an increase of 95,000 vehicles per day is expected.\(^{102}\) The traffic volume increases on this link are the result of the majority (75%) of North East Link traffic travelling to/from the south-east.\(^{103}\) I suspect this query may have arisen as Figure 9-10 does not show North East Link itself, but shows its traffic volume impact increasing significantly on the Eastern Freeway where the interchange would be located, therefore the location of the increase appears somewhat arbitrary. North East Link is not shown because it does not exist in the 2036 ‘no project’ scenario and therefore cannot be compared between the two scenarios.

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\(^{102}\) (Transport and Traffic Impact Assessment, 2019, p. 293)
\(^{103}\) (Transport and Traffic Impact Assessment, 2019, p. 317)
Lastly, the proponent has engaged an expert to report on the adequacy and robustness of the strategic modelling outputs relied upon by the EES from which forecast transport demand estimates have been derived.

C49. Submission contends that the modelled increase of 70,000 vehicles per day along the M80 in the 2036 Project Case compared to the 2036 No Project Case cannot be explained. The submission also contends that the 2036 Project Case volumes are “at odds” with Greensborough Bypass and Plenty Road.

The largest increase as a result of the Project (2036 ‘with project’ compared to 2036 ‘no project’) on the M80 is on the segment between North East Link and Plenty Road, where an increase of 72,000 vehicles per day is expected. The traffic volume increases on this link are a consequence of O-D routes which anticipate that much of the traffic is expected to continue from North East Link along the M80. As for the response to C47, I suspect this query may have arisen as Figure 9-9 does not show North East Link itself, but shows its traffic volume impact on the surrounding road network increasing significantly on the M80 where the interchange would be located, therefore the location of the increase appears somewhat arbitrary. North East Link is not shown because it does not exist in the 2036 ‘no project’ scenario and therefore cannot be compared between the two scenarios.

Lastly, the proponent has engaged an expert to report on the adequacy and robustness of the strategic modelling outputs relied upon by the EES from which forecast transport demand estimates have been derived.

C50. Submission contends that the known travel time disbenefits or negative impacts on level of service have not been addressed and that social and environmental costs of increased congestion on the Eastern Freeway and longer commute times for people in the outer suburbs have not been captured.

The evaluation objective for the Project is set out in the Scoping Requirements which states that the Project is:

“To increase transport capacity and improve connectivity to, from and through the northeast of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the project on the broader and local road, public transport, cycling and pedestrian transport networks”.

It is my interpretation that the objective of the Project does not need to address all travel time disbenefits or negative impacts, indeed, it would be unexpected for a project of this scale to have solely positive impacts across all networks and disciplines. Instead, the objective of the Project from a transport perspective is to improve capacity and connectivity and manage the

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104 (Transport and Traffic Impact Assessment, 2019, p. 292)
105 (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 12)
effects of the Project on the broader network. I am satisfied that the TTIA adequately considers these factors and validates that the outcome on a network basis, as it relates to LOS, is on balance better under the ‘no project’ outcome.

Management of Impacts

C51. Concerns the EES relies too heavily on EPRs for management of impacts.

Refer to response to C14 – the process is intended to make allowance for the contractor to identify opportunities to introduce innovation, optimise design or identify efficiencies in the detailed project design. The EPRs are intended to function as a ‘safeguard’ to guide this process. The EES relies on EPRs because they are prescribed as the ‘approach to manage performance’, as follows:

“Describe the environmental performance requirements to set transport network outcomes that the Project must achieve.” 106

To the extent possible, it would have been helpful if the submission more specifically outlined where any excessive reliance is expected.

Strategic Alignment

C52. The submission notes that the Project is mentioned as a long-term future project in Plan Melbourne, but is not otherwise committed in any particular period. Contends the Project is not responding to any short or medium-term planning policy imperative.

Section 3 of this Evidence Statement sets out detailed review of the Project’s alignment with various strategic planning policies and or plans including Plan Melbourne. Plan Melbourne

“….is our plan to manage growth in the city and suburbs to the year 2050. It seeks to integrate long-term land use, infrastructure and transport planning, and, in doing so, meet the city’s future environmental, population, housing and employment needs.” 107

Given its broad strategic remit, Plan Melbourne does not specify timing provisions for transport infrastructure. On the other hand the Australian Infrastructure Plan, developed by Infrastructure Australia, 2019 nominates the NEL Project as a high priority project.

C53. The submission infers that the Project (or its alignment) lacks explicit strategic policy support and is inconsistent with the Planning Policy Framework.

The Project Work Order directs the proposed alignment and corridor boundary. This alignment is a product of the Business Case.

C54. The submission notes that other planning policies in Victoria seek to encourage greater use of sustainable transport.

106 (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 13)
107 (Plan Melbourne, 2017 - 2050, 2017, p. 3)
The Business Case for the Project explored a range of potential options for addressing the identified problems in Melbourne’s north-east, including many sustainable transport initiatives such as travel behaviour change, dedicated pedestrian and cycling routes, bus improvements and a new rail connection. The option progressed in the Business Case included dedicated pedestrian and cycling routes and bus improvements, alongside upgrades to the road network.

The Project Scoping Requirements set out the extent to which sustainable transport natives need to be considered, noting that they are required to “optimise and integrate the Project with existing pedestrian and bicycle networks”.

I am satisfied, based on commentary provided throughout this Evidence Statement, that the Project meets these requirements.

C55. The submission contends that the distribution of benefits is such that people with longer commute times are negatively impacted by the Project and people in inner-suburbs (in areas closer to rail infrastructure) accrue the greatest benefits from the Project.

The TTIA sets out the study area which has been relied upon to inform forecasting which has been subsequently relied upon by the TTIA. The study area is broader and represents a significant part of metropolitan Melbourne.

Direction from the Project Scoping Requirements confirms that NEL is a new road project which improves the efficiency of the traffic and transport movement in the north east of Melbourne.

The TTIA undertakes travel time and accessibility analysis for the impacts of the Project on a range of routes in the north east corridor. The assessed routes are shown at Figure 5.11.

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108 (North East Link Business Case: Section 1: Melbourne’s orbital mobility challenge: Chapters 1 to 4, 2018, pp. 4-5)
The TTIA found that most routes see an improvement in travel times as a result of the Project, not only compared to the current conditions but future conditions without the Project (2036 ‘no project’).\textsuperscript{109}

C56. The submission contends that the Project is inconsistent with ESD principles and the Transport System Objectives and Decision Making Principles in the Transport Integration Act.

Section 3 of this Evidence Statement outlines an assessment of the Project’s alignment with the Transport Integration Act.

C57. Concerns that bridges and major road crossings will deteriorate from pedestrian and cyclist experience, including inclines, exposure to elements, barrier to those with poorer mobility and removal from social surveillance.

Please refer to C14, I am satisfied that it is not the role of the project to necessarily provide improvements to the pedestrian and cyclist experience beyond delivering and or maintaining connectivity. The contractor may, but is in my view not obligated to, enhance such outcomes as part of detailed design.

\textsuperscript{109} (Transport and Traffic Impact Assessment, 2019, p. 106)  
\textsuperscript{110} (Transport and Traffic Impact Assessment, 2019, p. 387)
Recommendations & Requests

A summary of the recommendations, requests or suggestions (either listed within the Recommendations section of the submission, or in other sections) is outlined below. It is reiterated that these recommendations are summarised and are the views of the respondent – I have provided by response to each recommendation beneath to assist the IAC.

R66. The EES should be amended to include the Watsonia alternate design.

The Watsonia alternate design was released on the Project website, but was not assessed under the EES. A subsequent memorandum has been produced which assist with the documentation of impacts associated with this alternate configuration. Of the two available design responses, I am of the view that the alternate design delivers a better balanced, local area outcome.

R67. Proposed design of the Lower Plenty Road interchange should allow oversized and placard goods vehicles to access North East Link, north of the interchange.

The NEL tunnel extends north of Lower Plenty Road a short distance to Blamey Road before re-emerging as an open trench. At the Lower Plenty Road interchange, the entry/exit ramps descend from Lower Plenty Road via an open cut trench into the tunnel, and vehicles are required to travel in a short tunnel before re-emerging at Blamey Road.

In Melbourne, placard and oversized loads are generally banned from tunnels as a precautionary measure. Aside from using the open-road route, there are two potential outcomes to this scenario:

1. Consider a deviation from standard practice for trucks to travel in this short section of tunnel, or
2. Consider a recommendation which requires any detailed design to consider an alternate configuration for Lower Plenty Road which removes the short tunnel section to allow placard and oversized loads access to the Project at this location (rather than relying on Greensborough Road for access).

R68. Clarify why the width of the Eastern Freeway has been proposed given it is not necessary for the anticipated traffic flows.

Refer to response to C19.

R69. The Project should incorporate additional walking and cycling infrastructure and preserve the potential for heavy rail to the Doncaster Activity Centre.

Complementary active transport projects are considered at Section 5.9.3.

Refer to response to R7 for the potential for heavy rail.
R70. Consider alternative designs of the M80 interchange to minimise land take.

The EES states that the M80 interchange reference design was progressed as it improves service road and local road access (including pedestrian overpasses) and allows for intersections at Grimshaw Street and Lower Plenty Road. The reference design also minimises visual and amenity impacts as it would be located within existing road corridor.\(^{111}\)

R71. Redesign Lower Plenty Road interchange to minimise impact on trees, open space and local amenity.

The Lower Plenty Road interchange reference design was progressed taking into account grades, suitable cover for a tunnel and minimising impacts on the community.\(^{112}\)

R72. Provide tunneled entry/exit ramps at the Bulleen Road interchange to minimise impacts on open space.

The EES notes that two options were considered which extend the tunnel further south towards the Eastern Freeway – one as a mined (bored) tunnel and one as cut and cover tunnel. Neither option was progressed as the reference design because despite improved visual impacts, the design of the east-facing tunnel (on the eastern side of Bulleen Road) would not provide adequate traffic functionality or provide sufficient stopping sight distance due to the tight curvature. The tunnel options would also require a larger project footprint at the Eastern Freeway in order to accommodate the tunnel portals and ventilation structures, which would permanently impact on parkland, community facilities and, if cut and cover was chosen, extensive property acquisition and surface level impacts.\(^{113}\)

R73. Shift the alignment of the Bulleen Road Interchange north-east so as not to preclude future use and development of land occupied by the Boroondara Tennis Centre.

The reference design shows the land currently occupied by the Boroondara Tennis Centre being used as a future Bulleen Park and Ride facility. I do not expect that this request is practical or feasible without removing the Bulleen Park and Ride facility from the Project.

R74. Investigate the option to extend the tunnel from Watsonia Station to the Grimshaw Street interchange, funded by toll revenue. In a separate part of the submission, the Councils note that design and potentially the alignment of the Project should consider extending the tunnel between Lower Plenty Road to a short distance south of Grimshaw Street.

Please refer to response to C44.

R75. Rationalise the scale of capital works in the Eastern Freeway corridor to reduce impacts on open space, vegetation and residential properties.

\(^{111}\) (North East Link Environmental Effects Statement, 2019, pp. 6-33)
\(^{112}\) (North East Link Environmental Effects Statement, 2019, pp. 6-37)
\(^{113}\) (North East Link Environmental Effects Statement, 2019, pp. 6-24 to 6-25)
Refer to response to C19.

R76. Alternatively, defer upgrades to the Eastern Freeway so that future planning for the duplication of the EastLink tunnels is resolved through a strategic assessment process. Defer upgrades to the Eastern Freeway until there is a funding commitment to duplicate the EastLink tunnels. The full extent of the required duplication of the EastLink Tunnels and connecting roads should form part of the EES.

Refer response to C15 noting that the Eastlink project at present remains an uncommitted project with no evidence of the project being re-considered in the near future. Accordingly, I would not support this request.

R77. Fund a package of measures to mitigate impacts to “local arterial road networks”.

Traffic volumes on several arterial and local roads are expected to increase as a result of the ‘with project’ (compared to the ‘no project’ scenario), particularly roads running north-south on the south of the Eastern Freeway. In most cases, the majority of the traffic increase is outside of peak periods where capacity is available on the network to absorb additional traffic activity. An example showing the greatest growth occurring outside of peak periods is Springvale Road is shown at Figure 5.12.

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114 (Transport and Traffic Impact Assessment, 2019, p. 292 to 294)
115 (Transport and Traffic Impact Assessment, 2019, p. 319 to 322)
On available network capacity, I undertook an assessment of anticipated demand on various arterials under the 2036 ‘with project’ scenario compared to midblock capacity, based using AustRoads interrupted flow parameters, with results presented at Table 5.8.

Table 5.8: Anticipated ‘with project’ demand compared to indicative midblock capacity

<table>
<thead>
<tr>
<th>Road Section</th>
<th>2036 ‘with project’ volumes (two-way)</th>
<th>Indicative midblock capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulleen Road (Eastern Freeway to Doncaster Road)</td>
<td>18,000 – 23,000</td>
<td>26,000 – 30,000</td>
</tr>
<tr>
<td>Elgar Road (Belmore Road to Whitehorse Road)</td>
<td>32,000 – 42,000</td>
<td>51,000 – 56,000</td>
</tr>
<tr>
<td>Station Street (Eastern Freeway to Whitehorse Road)</td>
<td>29,000 – 37,000</td>
<td>43,000 – 49,000</td>
</tr>
</tbody>
</table>

116 (Transport and Traffic Impact Assessment, 2019, p. 322)
Table 5.8 indicates for the most part that local arterial roads are likely to operate within acceptable parameters, noting that these estimates reflect mid-block outcomes as opposed to nodal performance estimates. The EES reviews nodal performance and sets out a comprehensive review of those outcomes.

Where issues have been identified, particularly around the Greensborough Bypass and Diamond Creek Road, further information was sought from the project technical team. Memorandums attached to this report indicates that upgrades will be required in and around the Civic Drive roundabout and this work will be completed as a complementary project by others (DoT / VicRoads).

Outside of the above works, EPR T5 requires monitoring on both arterial and non-arterial roads to understand the impact of the Project pre-construction, during construction and up to two years after construction is complete. The EPR also requires local area traffic management works to be implemented in consultation with relevant local councils to manage the impacts of the Project. I am satisfied that this provides adequate protection on local arterial road performance issues.

Lastly and to assist the IAC, for those roads where demand is expected to exceed capacity, potential measures may seek to make certain links less attractive (such as by reducing speed or...
increasing roadside friction and activities) or taking a network-based approach to redistribute traffic movements, such as a Movement and Place approach.

R78. Review and retain access (where feasible) between existing local roads to arterial roads (i.e. where those local roads are to be truncated by the Project).

The submission unfortunately is not location specific. Given this lack of specificity, to the extent I am able to comment, I agree that where feasible, local road connections to arterial roads should be maintained.

R79. Identify and deliver complementary projects as part of the Project.

The EES Scoping Requirements do not stipulate any mandatory requirement for complementary projects to be undertaken. As discussed in my response to C14, many complementary provisions have already been made, such as active transport facilities along much of the length of the Project. Further to that, I have instructed my office to undertake a review of other complementary projects arising from public submissions, with responses provided to assist the IAC in various sections of my Evidence Statement. I am satisfied that adequate consideration has been given to complementary projects.

Banyule City Council – Specific Concerns

C58. Concerns the existing connection from Watsonia Station to Elder Street will be removed, worsening community severance.

The Watsonia Station Alternate design overcomes any perceived severance issues. I have recommended to the IAC this option is pursued in comparison to the EES exhibited option.

C59. Concerns the alternative design of Watsonia reinstates access to Elder Street via a land bridge but no enhancements to local connections are proposed.

The alternate design maintains existing access which is the minimum requirement set out in the Project Scoping Requirements.

C60. Concerns locations (including Watsonia Station Car Park Reserve and Council car park at Watsonia Road Reserve) will be occupied during construction and partially occupied during operation which will impact on existing services, operations and ability to meet community expectations. Submits that acquisition of the Watsonia Road Reserve is not acceptable due to impacts on shopper car parking and viability of the Watsonia Shopping Centre.

EPR T2 satisfactorily manages issues around car parking displacement and temporary relocation.
C61. Concern regarding impact of Project on Watsonia Activity Centre, including occupation of car parking for construction purposes.

Please refer to response for C60 above.

C62. Concerns traffic impacts due to sporting club displacements has not been captured in the EES.

At this stage of the planning process, it is unclear where many sporting clubs are expected to relocate and as such, it is difficult to assess how changes to traffic movements could be expected to impact on the road network. Notwithstanding, it is anticipated that sporting clubs will likely generate traffic outside of the road network peak periods and represent a small proportion of the overall demand and as such, I do not expect that sporting club movements will materially impact on network performance.

C63. Concerns provision of direct and unobstructed paths east-west across North East Link is limited.

Refer to response to C44.

C64. Concerns there is no provision of a continual shared path from Greensborough to the CBD, particularly a safe, direct and unimpeded connection to the Main Yarra Trail across Banksia Street, Heidelberg. Concerns the current route is unsafe, subject to flooding and indirect.

Complementary active transport projects are considered at Section 5.9.3. The reference design\textsuperscript{118} shows the Project will deliver a continual shared path along the North East Link section from Greensborough, noting some road crossings are required. The NEL shared path connects to the existing River Gum Walk shared path near the intersection of Lower Plenty Road and Greensborough Road, which extends continuously to new and existing shared paths along the Eastern Freeway and Yarra River to the CBD. Alternatively, the shared paths provide access to on-street bike lanes in Clifton Hill and Abbotsford.

On review of those complementary projects, I recommend a pedestrian and cycle bridge be provided across the Yarra River at Banksia Street, Heidelberg. On flooding issues, where new infrastructure or replacement infrastructure is being provided, I expect that the design will consider and satisfy relevant authority standards.

C65. Concerns land bridges are not appropriate in number or location to support connections to open space areas.

Refer to response to C44 – the number of pedestrian crossings along the trenched section remains relatively unchanged, with two additional crossings near Wattle Drive and Drysdale Street. The number and location of land bridges remains flexible through detailed design,

\textsuperscript{118} (North East Link Environment Effects Statement Map Book - Part 1, 2019)
subject to meeting relevant criteria. EPR T1 provides protection regarding pedestrian and cycling connectivity and travel times.

Other planning experts including urban design may be able to further contribute to this issue.

C66. Concerns a lack of complementary projects are outlined in the EES.

Please refer to response to R97.

Banyule City Council – Recommendations & Requests

R80. Concerns the Project will increase volumes on Diamond Creek Road, Grimshaw Street, Erskine Road and Watsonia Road which will have unacceptable impacts, including safety, amenity and reducing bus service reliability. Requests improvements to Grimshaw Street.

The change in traffic volumes between the 2036 ‘no project’ and 2036 ‘with project’ cases on the listed roads is reproduced at Table 5.9.

Table 5.9: 2036 ‘no project’ average weekday daily volumes compared to 2036 ‘with project’ – select roads

<table>
<thead>
<tr>
<th>Road Segment</th>
<th>2036 ‘with project’</th>
<th>Change from 2036 ‘no project’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond Creek Road - Civic Drive to Yan Yean Road (eastbound)</td>
<td>28,000-37,000</td>
<td>+5,200</td>
</tr>
<tr>
<td>Diamond Creek Road - Civic Drive to Yan Yean Road (westbound)</td>
<td>28,000-36,000</td>
<td>+4,300</td>
</tr>
<tr>
<td>Grimshaw Street (west of NEL) – Watsonia Road to Greensborough Highway (eastbound)</td>
<td>14,000-18,000</td>
<td>+2,000&lt;sup&gt;120&lt;/sup&gt;</td>
</tr>
<tr>
<td>Grimshaw Street (west of NEL) – Watsonia Road to Greensborough Highway (westbound)</td>
<td>12,000-15,000</td>
<td>+1,000&lt;sup&gt;120&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>119</sup> (Transport and Traffic Impact Assessment, 2019, pp. 298-303)

<sup>120</sup> (Transport and Traffic Impact Assessment, 2019, p. Appendix D) NB. Change from 2036 ‘no project’ calculated by assuming the mid-point of the range when comparing 2036 ‘no project’ to ‘with project’ volumes.
Grimshaw Street (east of NEL) – Greensborough Highway to The Circuit (eastbound)  
20,000-25,000  -1,700

Grimshaw Street (east of NEL) – Greensborough Highway to The Circuit (westbound)  
16,000-21,000  -300

Erskine Road – Ferguson Street to Argyle Street  
(eastbound)  
5,000-7,000  +1,200

Erskine Road – Ferguson Street to Argyle Street  
(westbound)  
4,000-6,000  +1,100

Watsonia Road – Princes Street to Bungay Street  
(northbound)  
10,000-13,000  +2,000

Watsonia Road – Princes Street to Bungay Street  
(southbound)  
8,000-10,000  +2,000

As shown, traffic volumes on these roads are likely to increase in the order of 0 – 2,000 vehicles per day on most links, with higher increases on Diamond Creek Road. This segment (and Greensborough Bypass between Diamond Creek Road and the M80/North East Link interchange) has been considered separately by a memorandum of information which indicates upgrades works will be required on this part of the corridor to satisfactorily manage project impacts (refer to response to R39).

Further exploration of the remaining links in peak periods, when the network is most constrained, is outlined below.

**Grimshaw Street (west of NEL)**

Traffic volumes on Grimshaw Street (between Watsonia Road to Greensborough Highway) are expected to increase by up to 1,000 vehicles across the two-hour AM peak period (eastbound), or about 8-9 vehicles per minute on average. Smaller increases are expected in other directions or in other peak periods. This is not expected to significantly impact on network performance, especially given nodal upgrades which will improve network throughput.

**Grimshaw Street (east of NEL)**

Traffic volumes on Grimshaw Street (between Greensborough Road and The Circuit) are expected to increase by up to 200 vehicles across the two-hour PM peak period (westbound), or
less than two vehicles per minute on average. Volumes are expected to decrease in the eastbound direction in both peak hours, with a smaller increase westbound in the AM peak (150 vehicles over two hours). This is not expected to significantly impact on network performance, especially given nodal upgrades which will improve network throughput.

**Erskine Road**

Traffic volumes on Erskine Road are expected to increase by up to 200 vehicles across the two-hour AM peak period (westbound), or less than two vehicles per minute on average. Smaller increases are expected in other directions or peak periods. This is not expected to significantly impact on network performance except to note that the GTA Peer Review Report expressed concerns with daily traffic volume levels on this street which could exacerbate any impact on the environmental performance of the link as well as the functional performance of other connecting roads which link with Ruthven Drive.

EPR T5 provides parameters to measure and monitor traffic volumes on this part of the network where it may be the case that some form of intervention may be required to ensure outcomes are acceptably managed. Impacts on this link will need to be closely monitored.

**Watsonia Road**

The GTA Peer Review Report expressed concerns with daily traffic volume levels on this street given its role and function around supporting land use within the Watsonia Activity Centre and immediate surrounds.

Enquiries with the project team indicate that a high proportion of traffic within Watsonia Road is non-local to the area. A memorandum of information was prepared to assess the sensitivity of this non-local activity. A summary of the memorandum is set out at Section 4 of this Evidence Statement and indicates that green time adjustments at the Watsonia Road bookends could reduce demand within the link by up to 40% and re-direct activity back onto Greensborough Road. This coupled with preference for the adoption of access principles set out in the Alternate Design are supported.

Based on these observations, I am satisfied that EPR T5 which requires ongoing monitoring and makes provision for mitigation measures during early years of operation is capable of addressing higher than desirable levels of traffic activity through this link.

**R81. Simplify the Watsonia Road/Greensborough Road intersection to discourage Watsonia Road as a potential through-route.**

Further to comments provided on R80 above, and despite no specificity around any proposed change, the observation is supported in principle, noting that removing the left turn slip lane from Greensborough Road into Watsonia Road is commendable.
R82. Concern interchange design at Lower Plenty Road is overly cumbersome and counterintuitive for motorists, particularly from the east, west or south of the interchange intending to travel southbound. Concerns that changes to access to Edward Street, Strathallan Road and Sydney Street will restrict access for residents and change traffic flow. Consider a more efficient arrangement for Lower Plenty Road interchange, including alternatives to the proposed changes to Edward Street, Strathallan Road and Sydney Street access.  

The Lower Plenty Road interchange reference design was progressed taking into account grades, suitable cover for a tunnel and minimising impacts on the community. The performance of the interchange achieves LOS requirements set down for the project. An alternate layout maybe achievable however it will be required to meet LOS benchmarks set down for the project.  

With respect to changed access arrangements to Edward Street, Strathallan Road and Sydney Street, a new northbound service lane is proposed to be constructed to protect from 'rat-running' traffic from the new North East Link ramps. The TTIA notes that as a result, traffic from these streets will no longer be able to turn right (southbound) at Greensborough Road and will instead need to use Erskine Road or Torbay Street. The TTIA notes that this will add approximately one kilometre (or three minutes) of travel and some "very small" increases in traffic along Torbay Street. I am satisfied that the impacts of these changes are manageable given the small size of the catchment.  

R83. Concerns the Project does not provide direct connectivity to La Trobe NEIC. Provide direct connectivity between the Project and the La Trobe NEIC.  

Refer to response to C32.  

R84. Concerns the trench section of the Project further severs communities in the east and west of the municipality. Provide a transport corridor over Watsonia rail tracks by extending Elder Street to Watsonia Road  

On severance, refer to response to C44.  

On the requested transport corridor, complementary active transport projects are considered at Section 5.9.3. Providing such a connection would likely require acquisition to serve local access and has the potential to significantly alter traffic movements in the area, the impacts of which are potentially beyond the remit of this Project and inconsistent with the Watsonia Activity Centre Strategic Plan. It is noted that the Project retains pedestrian and active travel links from the east side of the corridor to Watsonia.  

In response, I am satisfied that the reference design provides an adequate response to Project requirements.

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121 (North East Link Environmental Effects Statement, 2019, pp. 6-37)
R85. Provide a direct shared user path across NEL and the railway to connect from the east side of NEL to Watsonia Shopping Centre and Watsonia Railway Station.

Complementary active transport projects are considered at Section 5.9.3. Both the reference design and alternative design incorporate a shared path across NEL and the rail corridor to connect to Watsonia Shopping Centre, either via overpass from the linear reserve or Elder Street, or further south at the intersection of Watsonia Road and Greensborough Road via land bridge.

The reference design is shown in Figure 5.13 to illustrate (with paths emphasised in red). Similar paths are available under the Alternate Design albeit, at grade.
R86. Upgrade Watsonia Station to include DDA access (i.e. lift access/escalator access to the platforms)

Any new link that includes connectivity to ground level should satisfy contemporary design standards including those relevant to accessibility. Having regard to applicable Project Scoping Requirements, any independent upgrade to Station facilities would fall outside the scope of this Project.

122 (North East Link Environment Effects Statement Map Book - Part 1, 2019), Sheet 9 of 42
R87. Provide direct, covered pedestrian/cyclist access between the multi-deck car park and the railway station.

Given at present the station car park is an at grade car park without weather-proof facilities between it and the station, this feature could (potentially) qualify as a complementary project.

On application of the Project Scoping Requirement though, this complementary project would not optimise and integrate the project as described in the Public Works Order but rather enhance the Watsonia Station design response which is being modified (and upgraded) as a consequence of the projects permanent effect.

On this criterion, an all-weather protection is not required but could be considered as an optional further enhancement.

R88. Explore possibilities to split Greensborough Road further north to allow pedestrian/cycling crossing to occur via one set of crossings.

The reference design exhibited with the EES shows the Greensborough Road carriageway divided into a northbound and southbound carriageway on either side of the North East Link trench north of Watsonia Road, converging back to an undivided carriageway on the west side of the trench south of Watsonia Road. Under this arrangement, pedestrians accessing from the south-east are required to traverse five carriageway crossings to access Watsonia shops, as shown in Figure 5.14. This compares with three carriageway crossings at present.
Whilst the proposed outcome increases delay for pedestrians crossing Greensborough Road at this location it appears to impact a relatively small catchment of people travelling to/from the immediate south-east (i.e. between approximately Thomas Street and Harborne Street) as people further south could cross at Wattle Drive and further north could cross at the Frensham Reserve overpass.

The Alternative Design for Watsonia shows a consolidated design which reduces the number of pedestrian crossing legs from five to three, consistent with the existing condition and an enhancement if the zebra crossing on the exit from Watsonia Road is included.

This design indicates that a simplification can be delivered without having to relocate any bifurcation of the Greensborough Road further north.

Commentary on the alternate Watsonia Station configuration and layout is provided elsewhere in this report.

123 (North East Link Environment Effects Statement Map Book - Part 1, 2019), Sheet 9 of 42
Figure 5.15: Watsonia Road/Greensborough Road intersection – alternative design (emphasis added to show crossings in red)\textsuperscript{124}

R89. Design Watsonia as a Park & Ride station and explore opportunities to provide additional car parking spaces (beyond the 60 additional spaces).

Watsonia Station consistent with other railway stations around metropolitan Melbourne which contain car parking, operate as a Park and Ride facility.

The TTIA notes that it is proposed to “maintain or increase the number of car parks within the facility [at Watsonia Station] with a multideck structure”.\textsuperscript{125} The TTIA also notes that “the final number of parking bays at Watsonia railway station… is being developed with Transport for Victoria [now Department of Transport]”.\textsuperscript{126}

Enquiries with the project team indicate that the multi-deck car park arrangement shown in the reference design includes a net increase of around 60 car spaces.

\textsuperscript{124} (Alternate design around Watsonia Station and shops, 2019, p. 3)
\textsuperscript{125} (Transport and Traffic Impact Assessment, 2019, p. 416)
\textsuperscript{126} (Transport and Traffic Impact Assessment, 2019, p. 66)
R90. Reinstall all facilities at the end of occupation to the relevant standard applicable at the time of reinstatement.

This issue is satisfactorily dealt with by drafted EPR’s LV2 and B4 as follows:

**EPR LV2:**

“Minimise landscape impacts during construction

Temporary and construction works are to be designed and carried out generally in accordance with the Urban Design Strategy guidance on using design to help manage construction impacts. Areas disturbed by temporary and construction works are to be reinstated in consultation with the relevant land manager.

Develop and implement measures to use temporary landscaping, features or structures (including viewing portals) during construction to minimise adverse visual impact of project works and provide visual appeal. Temporary landscape treatments, features or screening must be reused across the project, where appropriate.

Implement landscaping enhancement (as part of permanent works) prior to construction works commencing, where practicable.”

**EPR B4:**

“Minimise access and amenity impacts on businesses

Any reduction in the level of access, amenity or function of any business or commercial facility must be minimised to the extent and duration necessary to carry out the relevant construction related works. Affected business and commercial facilities must be provided with adequate notification of potential impacts and temporary access arrangements. Emergency access must be maintained at all times. Access must be maintained for customers, delivery and waste removal unless there has been a prior arrangement with affected businesses.

All permanent access to business and commercial facilities affected by North East Link works is to be reinstated, or relocated as agreed with the relevant property owner, including associated landscaping and reinstatement works, and temporary access arrangements put in place for construction must be removed when relevant construction activities have ceased.”

R91. Redesign Lower Plenty Road interchange to provide more direct access to North East Link.

The Lower Plenty Road interchange reference design was progressed taking into account grades, suitable cover for a tunnel and minimising impacts on the community. Any modification to the design will need to ensure LOS benchmarks for the project are satisfied.

R92. Concerns the Drysdale Street connection to Greensborough Road will present issues as it will
be closed during construction and located at the Lower Plenty Road interchange during operation, which may put pressure on the alternative arterial road access via Crew Street to Lower Plenty Road. Consider opening Drysdale Street on to Lower Plenty Road to facilitate improved local movements during and after construction.

The proposal reflects a potential contingency if modified temporary access delivered for the precinct effect is determined through monitoring under the relevant EPR to be problematic. Relevant EPR’s set out requirements for monitoring and subsequent changes should they be required.

R93. Review truck routes on existing arterial roads between the M80 and Eastern Freeway.

The EES undertakes this review and sets out a framework for managing freight movement on the identified network including regular trucks above and below 16.5 tonnes GVM, placard loads as well as trucks which qualify as HPFVs.

R94. Extend the North East Truck Curfew to 24 hours.

The TTIA notes that “it is not proposed to introduce truck bans on Rosanna Road as this route will still be used by some trucks not permitted to travel through the tunnels”.

R95. Concern that closure of Nell Street, Thompson Street, Temby Street and Nepean Street at their intersection with Greensborough Road will create unacceptable changes to traffic volumes and patterns in local streets, including Longmuir Road. Requests amendments to the design to retain current road and intersection arrangements at Nell Street, Thompson Street, Temby Street and Nepean Street.

Refer response to item C39.

R96. Concerns the upgrade of Greensborough Secondary College grounds for sports teams will impact traffic movements within local roads, particularly given Nell Street will be closed in the Project design. Requests detailed traffic assessment of local areas needs to be undertaken around relocated sports facilities.

Sporting clubs typically generate traffic outside of the road network peak periods and represent a small proportion of the overall demand. Accordingly, these demands are not expected to materially impact on network performance.

R97. Provision of complementary projects including, but not limited to:

- Public transport upgrades
- Cycling and pedestrian paths

128 (Transport and Traffic Impact Assessment, 2019, p. 65)
Road network improvements

The EES Scoping Requirements do not stipulate any requirement for complementary projects to be undertaken. As discussed in my response to C14, many complementary provisions have already been made, such as active transport facilities along much of the length of the Project. Further to that, I have instructed my office to undertake a review of other complementary projects arising from public submissions, with responses provided to assist the IAC in various sections of my Evidence Statement. I am satisfied that adequate consideration has been given to complementary projects.

Concerns of potential adverse economic effects on public transport investment in the catchment.

It is my opinion that this project will not jeopardise investment or benefits of investing in public transport. The Project makes provision for public transport through the Doncaster Busway and broader public transport improvements will undergo the usual planning processes or business cases to be appraised on their own merit. The project is not expected to change overall mode share for metropolitan Melbourne or the north-east,[1] and so I am satisfied that economic benefits of patronage are not likely to be materially affected.

Boroondara City Council – Specific Concerns

Note that Boroondara City Council specific concerns have been incorporated into the recommendations and requests below.

Boroondara City Council – Recommendations & Requests

R98. The relocated Boroondara Tennis Centre must allow for continuity of access during the construction phase of the Project.

Boroondara Tennis Centre is proposed to be relocated in order to accommodate the proposed modifications to the corridor, including a proposed Bulleen Park and Ride. Given the location of the relocated Tennis Centre is not known, nor is the period of its reconstruction, it would be difficult to provide comment on whether it is feasible to provide continuity of access while the Project is being constructed.

Notwithstanding, per response to C104, I am satisfied that the EPR T2 and T3 provide sufficient mechanism to ensure that access to properties will be provided where practicable.

[SmedTech, 2019], page 288
I also refer to response to R120, where I recommended the IAC consider amending EPR T3 to read:

The TMLG must include representatives from the State, VicRoads, emergency services, the Project, relevant transportation authorities and relevant local councils. Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, consideration should be given, by the TMLG, to inviting representatives from stakeholder or community groups to relevant meetings.

This would allow Boroondara Tennis Centre to be invited to relevant meetings where the TMLG propose to discuss matters that impact their access during construction and beyond where relocation is being considered.

R99. Concerns there is no detail about how the Doncaster busway preserves the Doncaster rail reservation. Seeks detail about how the Doncaster Busway preserves the Doncaster Rail reservation, including details about how the busway can be retrofitted to accommodate heavy rail.

As stated in Chapter 6 of the EES\textsuperscript{129}, a future Doncaster Rail option would not be precluded by North East Link, as the dimensions of the Doncaster Busway corridor are consistent with being able to accommodate heavy rail in the future. Enquiries with the project team indicate that in the future, should heavy rail be recommended by government, the busway would need to be removed and replaced.

R100. Concerns there are no clearly defined walking and cycling access routes from the south of the Eastern Freeway to the Bulleen Park and Ride. Seeks good-quality walking and cycling access to Bulleen Park and Ride facility from all directions.

The reference design\textsuperscript{130} shows that walking and cycling access will be enhanced on the east side of Bulleen Road via a signalised and independent SUP overpass. This addition will complement existing crossings on both sides of Bulleen Road at the interchange.

The overpass feature along with a range of defined routes can be seen at Figure 5.16.

\textsuperscript{129} (North East Link Environmental Effects Statement, 2019, pp. 6-8)
\textsuperscript{130} (North East Link Environment Effects Statement Map Book - Part 2, 2019), Sheet 23 of 42
Complementary active transport projects are also considered at Section 5.9.3.

R101. Provide high-quality and suitably located bike parking at Bulleen Park and Ride facility.

Detailed design for the park and ride facility is expected to include bicycle parking. This level of detail is not expected within the EES.

R102. Submits the proposed access and egress arrangements to and from the Bulleen Park and Ride facility are inappropriate, including that vehicle egress from the Park and Ride is left-out only onto Thompsons Road with no ability for vehicles to travel west to Bulleen Road. Seeks right- and left- out movements from the Bulleen Park and Ride facility.

Please refer to response to R21.

R103. Submits that the proposed use of two local streets to access the proposed Koonung Creek Reserve compound from Doncaster Road is not appropriate or supported. Reconsider the use of the Koonung Creek Reserve and local streets for construction purposes.

131 (North East Link Environment Effects Statement Map Book - Part 2, 2019), Sheet 32 of 42
The TTIA notes that the Koonung Creek Reserve compound (Site 9) is proposed to be access via Larbert Avenue and Walnut Road, with connections to Doncaster Road. The TTIA notes that the site would receive approximately 10 deliveries per site, occurring during daylight hours, which would result in approximately 2 deliveries per hour. I am comfortable with the findings in the TTIA that these movements could be accommodated by the surrounding road network and as such, are not expected to create adverse transport impacts which cannot be managed through the EPRs.\textsuperscript{132}

The suitability of access arrangements and mitigating treatments will be developed and reviewed by relevant authorities as part of the Transport Management Plans produced by the construction contractor prior to commencing works, including the requirement that:

- Potential routes for construction haulage and construction vehicles travelling to and from the Project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable.

It is my experience that the road authorities ensure that the applicant (the contractor) must perform adequate checks to confirm that the geometries of the streets being utilised are suitable for the vehicle size proposed.

R104. Concerns the impacts of the proposed Doncaster Road bridge replacement works and associated temporary lane reductions and closures are not well articulated and concerns on local road impact as motorist find alternate routes. Seeks detail of the local impacts and suggested mitigation measures associated with the proposed Doncaster Road bridge replacement.

The EES sets out the arrangement proposed for the re-construction of the Doncaster Road interchange including a need to operate with a single right turn from east to north and the potential flow on effects and interventions to manage outcomes during its construction phase.

On more specific day to day modifications, Construction Transport Management Plans (TMPs) will articulate specific nuanced closures, lane reductions and proposed detour routes.

TMPs are subject to a range of requirements at EPR T2, including the need for “an appropriate level of transport modelling”. The TMPs will take input from a number of agencies and will be reviewed and approved by the relevant authorities prior to the implementation of any closures.

\textsuperscript{132} (Transport and Traffic Impact Assessment, 2019, p. 462)
R105. Concerns construction and operation will result in an increase in traffic on local roads. Construction and operation must avoid increasing traffic on local roads. The Project should identify and upgrade alternative arterial routes to avoid impacts on local streets.

I am satisfied that the EES and drafted EPR’s establish an acceptable framework to manage construction impacts.

R106. All design of walking and cycling facilities must follow best practice and mode separate all shared paths impacted, built, renewed or upgraded by the Project.

Please refer to the response to C14. The EES Scoping Requirements do not set an obligation for the project to deliver ‘best practice’ outcomes or mode-separated facilities.

The SmedTech response to a similar community consultation question within the TTIA noted that:

“it is not possible to provide separated shared (sic) paths along North East Link due to space constraints. However, these may be provided if space is available and the warrants are met”

While this initiative is commendable, it is outside of the remit and scope of the Project.

R107. Submits a lack of complementary projects are outlined in the EES. Seeks provision of complementary projects including, but not limited to:

- Public transport upgrades
- Cycling and pedestrian paths
- Road network improvements

Please refer to response to R97.

Whitehorse City Council – Specific Concerns

C68. Concerns that there will be a deterioration in the performance of local roads, with no plans to mitigate the solution. Council has particular concerns at the following intersections:

- Station Street/Woodhouse Grove intersection
- Grosvenor Street/Surrey Road intersection
- Katrina Street/Middleborough Road/Heathfield Rise intersection
- Ashwood Drive/Springvale Road intersection

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133 (Transport and Traffic Impact Assessment, 2019, p. 67)
The performance of local roads which sit within or directly adjacent the project boundary has been measured with respect to Level of Service.

The respective Levels of Service for each approach and the whole junction of the identified intersections has been compared between the 2036 ‘no project’ and 2036 ‘with project’ scenarios in Table 5.10. Rows in brown denote local road approaches.

Table 5.10: Peak period Level of Service (LOS) results – specific intersections in Whitehorse (results lower than LOS D emphasised in red)134

<table>
<thead>
<tr>
<th>Approach</th>
<th>2036 ‘no project’</th>
<th>2036 ‘with project’</th>
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134 (Transport and Traffic Impact Assessment, 2019), page 234 (no project/AM/first hour), page 236 (no project/AM/second hour), page 239 (no project/PM/first hour), page 241 (no project/PM/second hour), page 368 (with project/AM/first hour), page 370 (with project/AM/second hour), page 373 (with project/PM/first hour), page 375 (with project/PM/second hour)
Overall, the ‘with project’ outcome delivers for each intersection either an equal or better level of service.

C69. Concerns regarding high traffic volumes along arterial roads in Whitehorse and the impact of this on car and public transport travel times along these arterial roads. Specific concerns are raised regarding the performance at the intersection of:

- Whitehorse Road/Springvale Road
- Whitehorse Road/Station Street
- Whitehorse Road/Elgar Road

Outlined earlier in this report, it is generally the case that the operations modelling would consider the corridor itself as well as the first major node outside the corridor. The nodes mentioned in this submission sit outside that first major node requirement.

Accordingly, to assist the IAC, I have sought to review the magnitude of (forecast) demand on these nodes between the 2036 ‘no project’ and the 2036 ‘with project’ scenario. Assessments focus on the peak hour, when the network is likely to be most constrained and for which intersections are generally designed. The assessments are summarised in Table 5.11 to Table 5.13.
Table 5.11: Magnitude of peak hour change in volume between 2036 ‘no project’ and 2036 ‘with project scenarios - Whitehorse Road/Springvale Road

<table>
<thead>
<tr>
<th>Approach at intersection</th>
<th>Direction</th>
<th>Change (AM) – two-hour volume</th>
<th>Change (PM) – two-hour volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehorse Road (west of Springvale Road)</td>
<td>Eastbound</td>
<td>-100</td>
<td>-150</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>-100</td>
<td>-50</td>
</tr>
<tr>
<td>Whitehorse Road (east of Springvale Road)</td>
<td>Eastbound</td>
<td>-100</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Springvale Road (north of Whitehorse Road)</td>
<td>Northbound</td>
<td>+800</td>
<td>+250</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>+150</td>
<td>+800</td>
</tr>
</tbody>
</table>

The table indicates that during the AM two-hour peak on the Springvale Road segment immediately north of the intersection, volumes are expected to increase by 800 vehicles in the northbound direction and 150 vehicles in the southbound direction. This represents a total of 950 additional vehicles in a two-hour peak, or about 425 vehicles per hour on average (about seven additional vehicles per minute). This increase is relatively modest, and I wouldn’t expect this change to have a significant impact on intersection performance, particularly as it is partially offset by reductions in east-west movements. No data is available for the south approach of Springvale Road, but I anticipate volumes on the northern approach/exit capture most of the additional vehicle impact on the southern leg.

The increase is relatively similar (albeit in opposite directions) in the PM peak, about 1,050 vehicles over two hours, or about 9 vehicles per minute, partially offset by the reduction in east-west movement. Again, I anticipate this will have only a modest impact on intersection performance.

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135 (Transport and Traffic Impact Assessment, 2019, p. Appendix D)

NB: The change in AM and PM two-hour volumes was calculated by finding the average of the difference between the top and bottom of the ranges between ‘with project’ and ‘no project’ values.
Table 5.12: Magnitude of peak hour change in volume between 2036 ‘no project’ and 2036 ‘with project scenarios’ - Whitehorse Road/Station Street

<table>
<thead>
<tr>
<th>Approach at intersection</th>
<th>Direction</th>
<th>Change two-hour volume (AM)</th>
<th>Change two-hour volume (PM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehorse Road (west of Station Street)</td>
<td>Eastbound</td>
<td>-50</td>
<td>-200</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>Negligible</td>
<td>-50</td>
</tr>
<tr>
<td>Whitehorse Road (east of Station Street)</td>
<td>Eastbound</td>
<td>-100</td>
<td>-100</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>-100</td>
<td>Negligible</td>
</tr>
<tr>
<td>Station Street (north of Whitehorse Road)</td>
<td>Northbound</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>50</td>
<td>Negligible</td>
</tr>
</tbody>
</table>

The Whitehorse Road/Station Street intersection is expected to see decreases in volumes on some approaches, or negligible changes on others.

Table 5.13: Magnitude of peak hour change in volume between 2036 ‘no project’ and 2036 ‘with project scenarios’ - Whitehorse Road/Elgar Road

<table>
<thead>
<tr>
<th>Approach at intersection</th>
<th>Direction</th>
<th>Change two-hour volume (AM)</th>
<th>Change two-hour volume (PM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehorse Road (west of Elgar Road)</td>
<td>Eastbound</td>
<td>-50</td>
<td>-250</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>-200</td>
<td>-100</td>
</tr>
<tr>
<td>Whitehorse Road (east of Elgar Road)</td>
<td>Eastbound</td>
<td>-50</td>
<td>-200</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>Negligible</td>
<td>-50</td>
</tr>
</tbody>
</table>

136 (Transport and Traffic Impact Assessment, 2019, p. Appendix D)

NB: The change in AM and PM two-hour volumes was calculated by finding the average of the difference between the top and bottom of the ranges between ‘with project’ and ‘no project’ values.

137 (Transport and Traffic Impact Assessment, 2019, p. Appendix D)

NB: The change in AM and PM two-hour volumes was calculated by finding the average of the difference between the top and bottom of the ranges between ‘with project’ and ‘no project’ values.
Elgar Road (north of Whitehorse Road) | Northbound | +300 | -50  
| Southbound | -50 | +300  

The Whitehorse Road/Elgar Road intersection is expected to see decreases in volumes on some approaches, or negligible changes in others. During the AM peak hour (northbound) and PM peak hour (southbound), volumes on the north approach/exit to the intersection on Elgar Road are expected to increase by 300 vehicles over a two-hour peak, or about 3 vehicles per minute. I do not expect this increase to have a material impact on the performance of the intersection and its impacts are partially offset by reductions in volumes on other approaches.

Overall, I am satisfied that the project does not trigger mitigating works at these intersections.

C70. Submits that the proposed walking and cycling improvements along Koonung Creek Trail are unacceptable given the level of impact of the Project.

Please refer to response to C14.

C71. Concerns that it is difficult to assess the impact on travel time or accessibility in Whitehorse and concerns that Appendix R indicates that many locations in Whitehorse will experience longer vehicle delays associated with the Project. Requests information that shows longer and shorter travel times.

‘Appendix R’ refers to the traffic modelling report prepared for the Business Case. Subsequent modelling undertaken for the EES (within the TTIA) supersedes these outputs.

On Appendix R, it should be noted that travel time plots shown in section 5.2 and Attachment D show deterioration in travel time between 2016 and 2036 without the North East Link Project. Travel times in section 6.3 of Appendix R (which compared the 2036 ‘no project’ to the 2036 ‘with project’ cases) show that travel time and accessibility from the two assessed origins (Mill Park and Doncaster) remains largely unchanged in the vicinity of Whitehorse as a result of the project.

Notwithstanding, Figure 28 of Appendix R does show some increase in daily traffic volumes on some north-south links in Whitehorse, consistent with the TTIA. I have provided more detailed commentary on similar matters at C68, C69 and R77.

The TTIA shows that travel times on the assessed routes are generally faster than the ‘no project’ scenario, with most routes improving to better than 2017 conditions. These routes, while not necessarily within Whitehorse, represent some of the travel conditions and routes that people living and working in Whitehorse may use, outside their municipality for broader metropolitan access.
C72. Submits that there is little information on the performance of the walking and cycling network under the no project and project scenarios and concerns that traffic performance is being prioritised instead of minimising walking and cycling delays or enhancing sustainable transport options.

The Scoping Requirements stipulate that the EES must:

- “Undertake predictive modelling of regional and local transport network traffic flows in the absence of the project.
- Undertake predictive modelling of regional, local and project transport network traffic flows following implementation of the project.”

The Project Scoping Requirements specifically cite a need for predictive traffic modelling. On my review, there is no requirement for the EES to undertake predictive modelling of the walking or cycling network.

C73. Concerns that 70 per cent of the predicted traffic volume increases on Middleborough Road are heavy commercial vehicles. Concerns that heavy vehicles may also use Elgar Road to access Box Hill MAC which would cause issues.

Middleborough Road

For the avoidance of doubt, the 70 per cent increase reflects the proportion of the increase being heavy truck movements.\(^{138}\)

Overall truck volumes are expected to increase by 200 daily movements in each of the northbound and southbound directions on Middleborough Road between the Eastern Freeway and Whitehorse Road in 2036 as a result of the project.\(^{139}\) For context, this increase represents about 15% of the ‘2036 with project’ truck volumes\(^{140}\) and 1% of the ‘2036 with project’ vehicle volumes on Middleborough Road.\(^{141}\)

Middleborough Road is estimated to carry around 38,000 vehicles per day under the ‘with project’ outcome.

Whilst the projected truck volume increase is not desirable, I note:

- The upgraded corridor will attract commercial vehicle traffic from feeder roads given prevailing productivity benefits brought about by the project,
- Middleborough Road is a primary arterial road which has a function to support this type of activity and movement

\(^{138}\) (Transport and Traffic Impact Assessment, 2019, p. 397)
\(^{139}\) (Transport and Traffic Impact Assessment, 2019, p. 399)
\(^{140}\) (Transport and Traffic Impact Assessment, 2019, p. 402)
\(^{141}\) (Transport and Traffic Impact Assessment, 2019, p. 296)
The proportion of truck traffic including light and heavy volumes are consistent with the role and function of the road as well as its predicted overall level of demand.

Elgar Road

Overall truck volumes are also expected to increase by 400 daily movements in the northbound and 300 daily movements in the southbound direction on Elgar Road between the Eastern Freeway and Whitehorse Road in 2036 as a result of the project. For context, this increase represents about 20-30% of the '2036 with project' truck volumes and 1-2% of the '2036 with project' vehicle volumes on Elgar Road.

Similar to Middleborough Road, the level of commercial vehicle activity is consistent with the role and function of the road.

Concerns that use of arterial roads in Whitehorse by placarded loads.

Vehicles with placard loads and over-dimension vehicles are not permitted to access the North East Link tunnels and would instead be directed to use an alternate route as shown in Figure 5.17.

As shown, the proposed route does not alter existing placard vehicle access to arterial roads in the Whitehorse LGA. The EES also notes that fewer of 2 per cent of the truck fleet would need to detour around the alternate sections of North East Link.

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142 (Transport and Traffic Impact Assessment, 2019, p. 399)
143 (Transport and Traffic Impact Assessment, 2019, p. 402)
144 (Transport and Traffic Impact Assessment, 2019, p. 296)
With respect to a general increase in placard loads as a result of the Project, the strategic modelling indicates that the 2036 ‘with project’ scenario would expect to see the following changes in average weekday truck volumes on roads in Whitehorse compared to the 2036 ‘no project’ scenario:  

Table 5.14: Change in average weekday truck volumes – 2036 ‘with project’ compared to 2036 ‘no project’ – 2036 ‘with project’ volumes shown in parentheses

<table>
<thead>
<tr>
<th>Road</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elgar Road</td>
<td>+400 trucks (1,100 - 1,400 trucks)</td>
<td>+300 trucks (1,200 - 1,600 trucks)</td>
</tr>
<tr>
<td>Station Street</td>
<td>-100 trucks (550 - 850 trucks)</td>
<td>-200 trucks (650 - 850 trucks)</td>
</tr>
</tbody>
</table>

145 (North East Link Environmental Effects Statement, 2019, pp. 9-91 to 9-92)
146 (Transport and Traffic Impact Assessment, 2019, p. 399)
Based on these estimates, there is expected to be only a minor change in truck volumes on Whitehorse Road.

Assuming a consistent 2 per cent of the truck fleet being over-dimensional or placarded, this would represent a nominal increase (i.e. increase of less than 10 trucks on an average weekday) in each direction of each arterial road link in the Whitehorse LGA.

C75. Notwithstanding improvements to bus route travel times, concerns that individual movements at particular intersections used by bus routes worsen under the ‘with project’ scenario and no mitigating measures are proposed. Listed locations include:

- Elgar Road northbound at Belmore Road (route 281, 293 and 302)
- Katrina Street westbound at Middleborough Road (route 270)

All approaches of the intersection of Elgar Road and Belmore Road are expected to function at the target Level of Service D or better in all peak periods. The westbound approach of the intersection of Katrina Street/Middleborough Road is expected to deteriorate below LOS D in some periods as a result of the project, which is worse than the ‘no project’ outcome.

The TTIA notes that “although a small number of intersection approaches worsen for bus routes in the ‘with project’ scenario, these delays are more than offset by decongestion elsewhere which leads to a general net reduction in travel times”. For example, the Route 302 is expected to improve in travel time by up to 5% at the whole-of-route level in the AM peak inbound direction. Please also refer to response to C68.

C76. Concerns that assessment of impacts on bus travel times is strategic and does not consider impacts at a local level.

The strategic model has been relied upon to guide likely changes in bus travel times given the breadth of the network coverage. A range of bus services cross the proposed project corridor

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147 (Transport and Traffic Impact Assessment, 2019, p. 413)
148 (Transport and Traffic Impact Assessment, 2019, p. 414)
and extend at length across other parts of metropolitan Melbourne. It is not practical to include all these routes within the operations model nor is it required based on the project Scoping Requirements subject to appropriate Environmental Performance Requirements. EPR T1 and EPR T5 manage potential adverse impacts on these services.

C77. Concerns that neither Blackburn Road or Middleborough Road bridges across the Eastern Freeway provide adequate facilities for cyclists.

This complementary active transport project is considered at Section 5.9.3.

C78. Submits a lack of complementary projects are outlined in the EES.

Please refer to response to R97.

**Whitehorse City Council – Recommendations & Requests**

R108. Seeks predicted increase in traffic volume along arterial roads to be off-set with extensive walking and cycling improvements, particularly to and from Box Hill Activity Centre. Seeks for Strategic Cycling Corridors to be implemented as a minimum.

Please refer to response to C14.

R109. Safety impacts on active transport users from higher vehicle volumes needs to be addressed.

A review of traffic demands on key roads within the Whitehorse LGA indicates that those arterial roads which serve a higher active travel role within the network are expected to experience a decrease in traffic activity, complementing the mobility for these user groups.

R110. Undertake further assessment of impact of heavy vehicles on arterial and local roads in Whitehorse.

Impact considerations of heavy vehicle impacts on key routes within the City of Whitehorse are set out earlier in this report.

R111. Present information on forecasting for walking and cycling, such as historical trends, nominal growth rates and performance results from microsimulation modelling.

Please refer to response to C72.

R112. Ensure continuous access to and along the Koonung Creek Trail and across the Eastern Freeway for walkers and cyclists.

The TTIA responded to a similar community concern and noted that “there are no proposals to close existing shared use paths. However, some relocation of paths may be required during the project’s construction”.149

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149 (Transport and Traffic Impact Assessment, 2019, p. 67)
EPR T2 requires that the Transport Management Plans include “measures to ensure connectivity and safety for all transport network users during construction”. I am satisfied that access to the Koonung Creek Trail can be adequately managed through the Transport Management Plans and other EPRs.

R113. Requests that the Bus Network Study is provided to Council.

Enquiries were made to the North East Link Project team regarding a ‘Bus Network Study’ (or similar) indicate that this study does not exist.

R114. Provide new pedestrian/cyclist bridges across the freeway before the existing bridges are demolished.

Please see also response to C111.

The TTIA lists a number of bridges which are proposed to be closed for either short- or long-term durations. The TTIA also notes that any “pedestrian bridges not listed in this section are currently proposed not to be closed during construction. The current construction phasing allows for the replacement bridge to be built adjacent to the existing bridge before its removal”. 150

Notwithstanding, where it is not possible for the bridge to be replaced before demolition, the closure is generally for a relatively short duration (generally up to 12 weeks), however the Macorna Street pedestrian bridge will be closed up to 26 weeks and the Doncaster Road bridge closed for up to one year.

The Transport Management Plans will be required to show “measures to ensure connectivity and safety for all transport network users during construction”, including walking and cycling. Given volumes are generally relatively low on these bridges (where volumes are available), I am satisfied that impacts can be satisfactorily managed despite some likely level of inconvenience to current users.

R115. Construct a full upgrade of the Koonung Creek Trail and adjacent walking and cycling infrastructure, including:
  o Strategic Cycling Corridor from Koonung Creek Trail Box Hill and Doncaster
  o Grade separation of path on the south side of Eastern Freeway at the arterial roads of Middleborough Road, Surrey Road and Springvale Road
  o Seal sections of path that are currently gravel
  o Duplicate sections of the path where it is practical to separate cyclists from walkers
  o Improve the connectivity of the Koonung Creek Trail on the east side of Middleborough Road
  o Improve visibility and safety through creative lighting and line-marking in all underpasses along the Koonung Creek Trail

150 (Transport and Traffic Impact Assessment, 2019, p. 466)
Improve wayfinding along the entire trail consistent with Council’s signage strategy
- Install bike maintenance stations along the Koonung Creek Trail, particularly in Elgar Park
- Install further lighting, toilets, drinking fountains, seating and shelter along the Koonung Creek Trail
- Provide funding to Council to assist with the construction of the Whitehorse Easy Ride Routes.

Complementary active transport projects are considered at Section 5.9.3.

R116. Provision of complementary projects including, but not limited to:
- Public transport upgrades
- Cycling and pedestrian paths
- Road network improvements

Please refer to response to R97.

5.5. Response to Key Stakeholder Group Submissions

5.5.1. Preamble

The following section provides a summary and response to key stakeholder group submissions.

With the role of the IAC in mind, I have identified stakeholder groups with a more specific focus on issues related to my area of expertise. I have adopted a risk-based approach, with greater effort directed to investigating and responding to elements that are considered to pose relatively higher risk of adverse environmental effects. To this end, not every stakeholder group has been identified within this sub-section, but where groups have not been specifically referenced, every attempt has been made to capture their concerns elsewhere in this Evidence Statement.

5.5.2. Institute of Transportation Engineers Australia & New Zealand (Submission 24)

The Institute of Transportation Engineers (ITE) prepared a submission which suggests the Project provides “world’s best practice facilities for motorised transport but second-rate facilities for sustainable, active transport”.

Project Concerns

C79. ITE are concerned the Project doesn’t provide segregation between pedestrians and cyclists.

The TTIA outlines that “the new paths will be fully sealed and generally three metres wide, linking existing shared use paths to improve access... Where practicable, separated footpath and bicycle paths will be provided”\(^{151}\).

\(^{151}\) (Transport and Traffic Impact Assessment, 2019, p. 417)
The Public Works Order does not provide a specific requirement for active travel and by extension a direction to provide segregated pedestrian and cycling facilities or more broadly “world’s best practice” active travel infrastructure design.

A review of the Project Scoping requirements indicates an expectation under the evaluation objective pertaining to Transport Capacity, Connectivity and Traffic Management for a requirement to manage the effects of the Project on cycling and pedestrian transport networks.

This requirement is satisfactorily captured by EPR T1 which necessitates the contractor to “maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths.” The EPR provision commendably, extends the Project deliverables outlined in the Project Scoping requirements.

As pedestrian and bicycles are referenced separately, I believe it is the intention of the EPR to ensure that where practicable and appropriate, segregated footpath and bicycle paths will be provided by the Project.

Recommendations & Requests

R117. ITE are concerned the cycling facilities proposed in the Project are circuitous, steep and not grade separated from intersections. ITE recommend that the Project provides segregated paths for pedestrians and cyclists with grade separated crossing facilities and more direct routes with better grades.

Consistent with the earlier response on ITE R1 the Project design will be guided by the Scoping Requirements evaluation objective: “To increase transport capacity and improve connectivity to, from and through the northeast of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the Project on the broader and local road, public transport, cycling and pedestrian transport networks.”

As explained earlier in this Evidence Statement, I expect the Project to complete any gaps in the strategic pedestrian and cycling network, connecting with existing path networks and where appropriate enhancing connections with key destinations. A review of the reference design indicates provision for segregated paths as well as grade separation provisions at specific locations. An active travel evaluation set out elsewhere in this Evidence Statement sets out the adequacy of the active travel design response contained in the EES.

5.5.3. Watsonia Traders Association (Submission 490)

The Watsonia Traders Association (WTA) represents 76 member businesses primarily located on Watsonia and Greensborough Roads in Watsonia. The submission expresses conditional support for the Project, with concerns about the planning process, construction design and consultation process.
Project Concerns

C80. WTA are concerned the Greensborough Highway is a barrier, restricting access between the shopping area, station and the suburb.

The Greensborough Highway is an existing barrier. Given earlier comments on the preferred adoption of the Alternate Design I make the following observations:

1. Two formal crossings are proposed over Greensborough Highway including one at Watsonia Road and another at Elder Street.

2. The number of trafficable lanes which need to be crossed on Greensborough Highway reduce from 6-lanes at present to 4-lanes under the alternate design. This represents an improvement over the existing condition.

3. Traffic demands on the Highway itself reduce, impacting positively at ground level on pedestrian and cyclist operating experience including increased safety.

4. The project (NEL) is located within a trench and does not effect the crossing distance between the west and east sides of the corridor, this remains fixed.

C81. WTA have concerns relating to the intersection layout of Greensborough Road and Watsonia Road, suggesting large vehicles are likely to enter the shopping strip at speed impacting pedestrian safety.

Please refer response to R81.

C82. WTA have concerns relating to car parking and traffic volumes during both construction and post-implementation phases of the Project.

I am satisfied that the drafted EPR’s manage these issues satisfactorily and recommended earlier an EPR be upgrade to include invitation of key stakeholders to TMLG meetings where changes will directly effect operation of an area where they have an interest.

C83. WTA are concerned the reference design doesn’t align with the visioning document ‘Picture Watsonia’, endorsed by Banyule Council in 2014.

More specificity would have been helpful with this submission. Subject to adoption of the Alternate Design for Watsonia, I am satisfied that the project delivers outcomes consistent with those set down in that document.

Of interest, investigations indicate that the visioning document referenced was removed from Council’s website on or around the 28 June 2019.
Recommendations & Requests

R118. WTA propose extending the tunnel north of Blamey Road to north of Watsonia Railway Station and eliminating the Lower Plenty Road interchange to improve environmental impact and reduce severance.

As stated earlier, I have been instructed that Project team representatives will be making specific presentations at the forthcoming hearing to discuss a range of delivery issues around both extending the northern portal and the basis upon which the exhibited EES interchange designs were prepared. I also understand that this presentation will elaborate on optioneering completed as part of the process for specific elements of the Project.

On the removal of the Lower Plenty Road interchange I note:

- Strategic investigations which underpin its inclusion highlight the need for interchanges along the corridor including at Lower Plenty Road in order to meet identified Project objectives,
- Strategic model tests which explored the removal of this, and other interchanges revealed the creation of other network operational issues which delivered an overall sub-optimal post implementation outcome for the Project, and
- The Project Works Order specifically notes a requirement for an interchange at that location.

R119. WTA request a transparent investigation of the potential to extend the tunnel further north of Lower Plenty Road.

I understand this issue will be addressed by the Project team at the formal hearing.

R120. WTA request to be included as an approval agent for any Traffic Management Plans that impact traffic flows or parking within the shopping centre area or station precinct.

It is a requirement of the Road Management Act, 2004 to have a Traffic Management Plan (TMP) when completing infrastructure and works on roads in Victoria. The ability to complete these works is granted under the Road Management Act by the relevant road authority.

5.5.4. LaTrobe University (Submission 531)

LaTrobe University is located within the Latrobe National Employment Innovation Cluster to the west of the Project corridor. The submission expresses qualified support for the Project, identifying the potential benefits of improved access to the NEIC.

Project Concerns

C84. The Project fails to address congestion in the short term

Whilst I appreciate there may be short term congestion impacts that concern LaTrobe University, the Project has not been designed to respond to short-term congestion issues.
Section 2.2 of this Evidence Statement outlines the strategic need that this Project has been designed to address. I acknowledge that during the construction period, there will likely be increases in localised congestion, which may extend to impact LaTrobe University. It is my view that these impacts will be managed so far as is reasonably practicable under EPR T2 which requires the development of Transport Management Plans through the TMLG.

C85. The EES does not contain detail of the specific bus network and service improvements that will be applied post-implementation

I am satisfied that it is not the responsibility of the Project to undertake bus network service planning to integrate the Project with the broader network. Whilst I appreciate LaTrobe University’s interest in future bus service improvements, the EES is not required to contain this detail when specifically considering needs and outcomes described through the developed (and exhibited) Project Scoping Requirements.

On managing this issue, I am satisfied that it will be satisfactorily addressed by EPR T1, which requires the contractor to:

“Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Work with relevant public transport authorities 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 North East Link.”

On my review, it also appears as though DoT through their involvement in the Project have not imposed on the Project an expectation for any further network improvements outside those already outlined in the EES. I am also not aware of any expectation from DoT on the Project needing to improve on existing services which align or cross the corridor except to ensure, in accordance with the scoping requirements that impacts are suitably managed.

5.5.5. Transport For Everyone (T4e) (Submission 633)

T4e is an alliance of six transport and planning advocacy groups, being:

- Inner Melbourne Planning Alliance (IMPA)
- Public Transport Users Association (PTUA)
- Rail Futures Institute (RFI)
- Town and Country Planning Association (TCPA)
- Transport for Melbourne (TfM) and
- The Victorian Transport Action Group (VTAG)
The submission presents concerns relating to the Project outcomes, which they believe will increase car dependency and increase vehicle emissions. Their specific concerns and requests are outlined below.

**Project Concerns**

**C86.** T4e suggest that the EES is selective in its consideration of the Project’s alignment with key policies and strategies, including the Transport Integration Act and the Victorian Freight Strategy.

Section 3 of this report outlines an independent assessment of the Project’s alignment with key transport policies, strategies and relevant reference legislation.

**C87.** T4e express concern that the Project does not continue east-west public transport services along the length of Alexandra Parade to access major activity centres.

As I interpret the reference design and EES, public transport services for the most part, are upgraded along the Eastern Freeway to a location immediately east of the Hoddle Street / Alexandra Parade junction and matching in after that with existing infrastructure. On the acceptability of this approach, the Public Works Order provides a schematic diagram of the Project outline which on my interpretation indicates that Alexandra Parade sits (for the most part) outside the selected Project outline area.

Noting that the reference design represents one amongst a range of potential solutions for east-west public transport services, opportunities do exist to extend infrastructure further west noting that there is no clear or evident “gap” that would be filled by extending these services to the Project outline edge. On this, it is evident that a strategy which involved extending public transport access exclusivity (if that is what is inferred) along Alexandra Parade would require careful consideration of other impacts including:

- The likely impact of the productivity and functioning of Alexandra Parade through the likely required re-allocation of road space,
- Other strategic plans and design solutions which involve a broader strategic remit around east-west travel along Alexandra Parade and beyond,
- Contributions made by DoT on the need to extend public transport services beyond those shown in the EES reference design through its role on the TRG.

Lastly, given that the EES concept plan reflects a reference design, an opportunity remains to extend public transport services further west through EPR T1, which requires the contractor:

Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Work with relevant public transport authorities 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 North East Link.

Recommendations & Requests

R121. T4e express concern that the reference design of the busway has not been assessed against appropriate Bus Rapid Transit standards, and requests that the busway test the corridor against the Institute for Transportation and Development Policy standard guidelines.

Refer to response to R4.

5.5.6. Bicycle Network (Submission 671)

The Bicycle Network is Australia’s biggest bike riding organisation, supported by nearly 50,000 members nationwide. Their submission highlights their involvement in the development of the reference design having been identified and engaged as a stakeholder for the Project.

Project Concerns

C88. Bicycle Network express concern that the reference design was completed before DoT had completed its review and mapping of the Strategic Cycling Corridors (SCCs), outlining that it is expected that the SCCs would be available prior to the completion of the EES process and may provide guidance about opportunities for further enhancement of the cycling impacts of the Project.

Whilst it would be optimal for DoT to have released the SCCs, the reference design presents one feasible design solution for the Project. It is my view that EPR T1 will ensure that integrating the Project with SCCs is considered as it requires the contractor to:

“Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths.”

Strategy 1.5 of the Victorian Cycling Strategy outlines that connectivity is to be prioritised between SCCs and stations or major interchanges on the public transport network that service places of state significance, such as NEICs, MACs, state-significant industrial precincts and health and education precincts. Whilst the EPR is not specific in terms of the potential bicycle connectivity enhancements that should be prioritised, given the design will be completed in consultation with DoT, it is my view that the EPR T1 is sufficient to ensure that connectivity to SCCs is considered.

Recommendations & Requests

R122. Bicycle Network suggest enhancements that should be explored through detailed design, including:

- Replacement bridge over the Merri Creek near Roseneath Street in Clifton Hill
- Re-locate the Main Yarra Trail south of Bankia Street from the River flats
• Realisation of bike and pedestrian footbridge across the Yarra previously investigated by the cities of Manningham and Banyule, to be located west of the college and community sporting complexes.

Complementary active transport projects are considered at Section 5.9.3.

R123. Bicycle Network outline that major infrastructure projects typically stipulate the use of certain guidelines or standards applicable to bicycle facilities which are themselves dated and are being replaced in the industry by more contemporary practice. Bicycle Network asks that the IAC investigates how the North East Link might adopt a better system of guidelines.

This request highlights that the EPRs should be adequately drafted to ensure the Project is designed to a suitable standard or guideline. I do not consider there to be a need for the EPRs to prescribe a specific guideline or practice. However, I do believe it is appropriate for the EPRs to require the Project meet the design requirements of relevant road and transport authorities, as per the recommendation to revise the EPR in my response to R8.

On requesting the IAC investigate how the Project might adopt better systems of guidelines, I am of the view that this request sits outside the IAC terms of reference.

5.5.7. Victorian Transport Action Group (VTAG) (Submission 704)

The Victorian Transport Action Group (VTAG) are an independent forum of transport experts. The principle concern with VTAG's submission is the quality of the busway, which sees them request a higher standard facility be mandated through the EES process.

Project Concerns

C89. VTAG are concerned that the EES lacks a 'whole of government', multi-modal approach as required by the Transport Integration Act.

Section 3 of this Evidence Statement outlines an independent assessment of the Project’s alignment with key transport policies, strategies and reference legislation.

It is also noteworthy that the Project TRG included a wide range of agencies and stakeholders on developing the EES technical reports and Project reference design.

C90. VTAG are concerned that the EES is equivocal about the Bulleen Road Park and Ride.

This same concern was raised in the GTA peer review report. Section 8.9.6 of the main EES report summarises the public transport upgrades associated with North East Link and includes the Bulleen Road Park and Ride. As outlined earlier in this report, a memorandum prepared by SmedTech made it clear that the Bulleen Road Park and Ride was also included in the microsimulation modelling for the project. I am comfortable with the level of detail, and the certainty that the Bulleen Road Park and Ride will be delivered as part of the Project.
C91. VTAG are concerned that the Project precludes the delivery of a light or heavy rail along the Eastern Freeway corridor.

With reference to Chapter 6 of the EES, a future Doncaster Rail option would not be precluded by North East Link, as whilst the public transport provision is being shifted to the north of the corridor, the dimensions of the Doncaster Busway corridor are consistent with those able to accommodate heavy rail (including train stations) in the future. To this end, the spatial requirements necessary to deliver heavy rail along the Eastern Freeway corridor will exist.

On the specific issue around deliverability of heavy rail using the busway infrastructure, I have sought instruction and had confirmed that should heavy rail facilities be delivered along the proposed busway corridor, it would require the removal and replacement of the proposed busway.

Recommendations & Requests

R124. Similarly to T4e’s submission (#633), VTAG express concern that the reference design of the busway has not been assessed against appropriate Bus Rapid Transit standards, and requests that the busway test the corridor against the Institute for Transportation and Development Policy standard guidelines and achieve a gold standard, with ability to cater for electric or CNG buses with low emissions.

Refer to response to R4.

R125. VTAG request that an additional four bus stops are needed to serve adjacent residential catchment, and specifically request an interchange with Victoria Park station.

The Public Works Order refers to provision of new dedicated bus lanes for rapid bus services. ‘rapid bus services’ is not an industry recognised term, however, suggests that the intent of the Project is to deliver an express service, not to deliver a conventional bus facility designed to maximise catchment or coverage.

Enquiries with the Project team around development of the busway indicated that the bus stop and park and ride locations were proposed and supported by Transport for Victoria (now DoT). I have also been advised that the alignment supports a future stop at the Chandler Highway should DoT wish to pursue that option following implementation of the Project.

In relation to the specific request for an interchange with Victoria Park station, the EES outlines the optioneering completed during the development of the busway alignment. Transport for Victoria (now DoT) advised the busway was to connect directly to Hoddle Street, however,
wishes to preserve an option for a potential future link from the Eastern Freeway busway to Victoria Park railway station.\footnote{153}

R126. VTAG are concerned that the busway is not segregated as buses mix with general traffic beyond Hoddle Street. They request that bus priority lanes are implemented between Victoria Park Station and the CBD, and along Alexandra Parade to Parkville Station and the re-named West (North) Melbourne Station.

The Public Works Order, as outlined in Section 2.4 of this Evidence Statement, is clear on the extent of the Project outline. At the western end of the Eastern Freeway, the Project boundary ends just west of Hoddle Street.

I refer in part to my response to C87 which provides an outline on the potential and need to extend public transport services along Alexandra Parade. On access to Victoria Park Station, the DoT as part of the TRG have determined that the solution outlined in the \textit{EES} is at this stage the most appropriate solution around managing bus access and movement.

Lastly, reference can be made on the responsibility of the Project to integrate public transport services with the broader network. On this, the reference design does not preclude the extension of the busway, or bus routes, along Alexandra Parade or Hoddle Street. This concern is satisfactorily captured by EPR T1, which requires the contractor to:

“\textit{Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: Work with relevant public transport authorities 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 North East Link.}”

R127. VTAG are concerned that the value of connections to future projects such as Melbourne Metro 2 and Suburban Rail Loop have not been taken into account within the modelling. They request that additional modelling is completed to account for these projects as well as the Hurstbridge line duplication.

The Public Works Order was gazetted in February 2018 and the \textit{EES} Scoping Requirements were settled in June 2018. The Suburban Rail Loop was announced in August 2018, which is after the scoping documents were confirmed.

Both these projects involve much longer-term planning horizons outside Infrastructure Victoria’s stated need for NEL. Accordingly, modelling either of those two uncommitted projects is not considered necessary.

\footnote{153}{\textit{North East Link Environmental Effects Statement}, 2019, pp. 6 - 53}
On the inclusion of the Hurstbridge duplication within the modelling for the Project, enquiries with the Project team confirm it has been included.

R128. VTAG are concerned that the reference design for the busway does not deliver the capacity needed to service the predicted increase in patronage. They request that the busway be designed to deliver a capacity of 60,000 passengers per day by 2031.

Enquiries with the Project team indicate that operations modelling for the Project include allowance for up to 140 buses per hour (per direction) on the busway. I understand these parameters were agreed with DoT through their involvement on the TRG.

R129. VTAG request that DART service frequency be increased immediately with funding from the Project to offset the impact of construction.

The planning and funding of bus service frequency increases is not within the remit and scope of the Project.

Notwithstanding, the TTIA notes that:

“Transport for Victoria [now Department of Transport] is undertaking a review of bus routes across the north-east to integrate the new project scope with the broader public transport network”.154

EPR T2 requires the contractor to:

“develop and implement Transport Management Plan(s) (TMP) to minimise disruption to... public transport (rail, tram and bus)”.155

I am satisfied that the EPR will satisfactorily preserve required Project outcomes.

R130. VTAG request that the Doncaster Park and Ride facility should not be relocated to the Koonung Creek Reserve, and instead propose options are explored to stage the redevelopment of the site.

Refer to response R143, which recognises that the Doncaster Park and Ride will be impacted by construction. Several options for its relocation were explored in the TTIA, including staging the construction. However, the TTIA came to the conclusion that the most likely temporary location is the Koonung Creek Reserve, in the area bound by Doncaster Road, Eastern Freeway and Gardenia Road. The TTIA proposed potential mitigation options to limit impacts to bus access.

Ultimately, the contractor will have to work with DoT on an approach which minimises disruption to bus users, as required by EPR T2:

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154 (Transport and Traffic Impact Assessment, 2019, p. 276)
155 (North East Link Environmental Effects Statement, 2019, pp. 27-62)
“develop and implement Transport Management Plan(s) (TMP) to minimise disruption to... public transport (rail, tram and bus)”.

And EPR T3, which requires the formulation of the TMLG:

“The TMLG must include representatives from the State, VicRoads, emergency services, the project, relevant transportation authorities and relevant local councils.” (emphasis in bold added).

I am satisfied that the EPR will satisfactorily preserve required Project outcomes.

5.5.8. Public Transport Users Association (Submission 792)

The Public Transport Users Association (PTUA) is a non-profit, voluntary organisation with no political affiliations, who advocate for sustainable public transport policy in Victoria on behalf of users. The PTUA’s submission does not support the Project, suggesting the direct and indirect environmental, social and economic damage is not adequately justified by travel time savings or economic benefits of the Project. Their principle concerns and requests are summarised below.

Project Concern

C92. PTUA suggest that the guidelines within the Transport Integration Act have been ignored.

Section 3 of this Evidence Statement outlines an independent assessment of the Project’s alignment with the policy objectives of the Transport Integration Act.

C93. PTUA suggest that the approach of assessing the Project relative to a ‘no project’ scenario is flawed.

The framework upon which the Project has been evaluated is set down in the EES Scoping Requirements. The Scoping Requirements outline that the EES main report should include appropriately detailed assessments of potential effects of the Project on environmental assets and values, relative to the ‘no project’ scenario.

In my experience, it is common practice to compare the Project impacts between with and ‘no project’ scenarios in a design horizon. The assessment compares scenarios which reflect committed projects, accounting for the knowns as consistently as possible between scenarios. Any other alternate evaluation would potentially involve interventions on the transport system which other either unknown or not committed (even) strategically by government.
C94. PTUA are concerned that the Project assessment has not considered the impacts of induced traffic demand.

The TTIA outlines the approach taken within the Project assessment to account for induced demand. The methodology applied follows the Auditor-General’s findings from 2016 which specified minimum requirements for addressing induced demand in strategic modelling. Whilst a review of the strategic modelling is outside the remit of my review, I acknowledge that the TTIA affirms that all the requirements of the Victorian Government’s Guidelines for Transport Modelling and Economic Appraisals in Victoria have been incorporated into the modelling for the Project.\(^{158}\)

Finally, I understand other experts called by the proponent will comment on how the induced demand phenomena is being managed by the applied strategic forecasting process and methodology.

C95. PTUA are concerned that the only formal consideration of public transport alternatives to the Project appear within the business case, suggesting that insufficient detail or consideration is given to public transport.

As outlined in Section 2.2 of this Evidence Statement, broader public transport alternatives to the Project were considered within the business case as Strategic Option 3. However, the option did not fully align with the objectives of the Project as it was not able to wholly address freight movement and connectivity issues between the north and south east of Melbourne.

Once Strategic Option 5: the connected freeway was selected as the preferred alignment, the Public Works Order and the EES Scoping Requirements were developed to identify the scope for the assessment of the Project. Neither document requires consideration of public transport design alternatives for the Project.

C96. PTUA are concerned that the use of the Eastern Freeway railway reservation for the Project will preclude the delivery of a heavy rail solution.

As stated in Chapter 6 of the EES,\(^ {159}\) a future Doncaster Rail option would not be precluded by North East Link, as whilst the public transport provision is being shifted to the north of the corridor, the dimensions of the Doncaster Busway corridor are consistent with able to accommodate heavy rail (including train stations) in the future.

On the specific issue around deliverability of heavy rail using the busway infrastructure, I have sought instruction and had confirmed that should heavy rail facilities be delivered along the proposed busway corridor, it would require the removal and replacement of the proposed busway.

\(^{158}\) (Transport and Traffic Impact Assessment, 2019, p. 47)
\(^{159}\) (North East Link Environmental Effects Statement, 2019, pp. 6 - 8)
PTUA are concerned that the benefits of the busway are minor without substantial complementary measures outside the Project area.

The TTIA outlines the modelled improvements to bus travel time and reliability following the introduction of the busway. The results are shown for Doncaster Area Rapid Transit (DART) bus services (routes 905, 906, 907 and 908) for those buses using the busway in the future. The results from the TTIA are reproduced in Table 5.15 to Table 5.17 for the 2036 No Project and With Project outcomes.

Table 5.15: DART bus routes change in inbound travel times, AM peak, 2036 ‘with project’ vs 2036 ‘no project’

<table>
<thead>
<tr>
<th>Route</th>
<th>Eastern Freeway segment</th>
<th>Non-Eastern Freeway segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>905</td>
<td>-30% to -35%</td>
<td>-5% to -10%</td>
</tr>
<tr>
<td>906</td>
<td>-20% to -25%</td>
<td>-10% to -15%</td>
</tr>
<tr>
<td>907</td>
<td>-30% to -35%</td>
<td>0% to -15%</td>
</tr>
<tr>
<td>908</td>
<td>-30% to -35%</td>
<td>-10% to -15%</td>
</tr>
</tbody>
</table>

Table 5.16: DART bus routes change in inbound travel times, PM peak, 2036 ‘with project’ vs 2036 ‘no project’

<table>
<thead>
<tr>
<th>Route</th>
<th>Eastern Freeway segment</th>
<th>Non-Eastern Freeway segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>905</td>
<td>-25% to -30%</td>
<td>0% to -5%</td>
</tr>
<tr>
<td>906</td>
<td>-15% to -20%</td>
<td>-10% to -5%</td>
</tr>
<tr>
<td>907</td>
<td>-25% to -30%</td>
<td>0% to -15%</td>
</tr>
<tr>
<td>908</td>
<td>-25% to -30%</td>
<td>-10% to -15%</td>
</tr>
</tbody>
</table>

Table 5.17: DART bus route AM peak inbound travel time variability

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Average travel time (sec)</th>
<th>Minimum travel time (sec)</th>
<th>Maximum travel time (sec)</th>
<th>Variability (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
<td>600</td>
<td>496</td>
<td>725</td>
<td>230</td>
</tr>
<tr>
<td>2036 'no project'</td>
<td>683</td>
<td>506</td>
<td>983</td>
<td>457</td>
</tr>
<tr>
<td>2036 'with project'</td>
<td>454</td>
<td>525</td>
<td>641</td>
<td>116</td>
</tr>
</tbody>
</table>

These results reflect a significant improvement to bus performance and allay concerns raised by TUA on the level of benefit derived from the project for the section of route where they apply.

The response to C14 sets out a commentary on the need for the Project to consider broader network public transport improvements.
5.5.9. Schools

Submissions were received from the following schools within the vicinity of the Project:

- St Martin of Tours Primary School
- Eltham College
- Carey Grammar Baptist School
- Greensborough College
- Trinity Grammar School, Kew
- Watsonia Primary School
- Macleod College
- Marcellin College

These submissions were reviewed, their issues summarised and they are responded to within Sections 5.6 to 5.10 of this Evidence Statement.

5.5.10. Other community groups with transport concerns

Submissions were received from the following schools within the vicinity of the Project:

- Resolve Rosanna Road
- Bulleen Road Freeway ramp bus stop community group
- Avon Street Residents Committee
- Residents of Kay Court and Fahey Crescent
- Banyule Ratepayers Action Group
- Residents United Against North East Link Option A (RUANELA)
- Whitehorse Ratepayers Association
- Blackburn Village Residents Group
- Mountain View Road Residents

These submissions were reviewed, their issues summarised and they are responded to within Sections 5.6 to 5.10 of this Evidence Statement.

5.6. Project Reference Design

A range of submissions were received in relation to elements of the Project’s reference design. In responding to submissions from Local Government authorities and key stakeholder group, most of the Project reference design matters have been covered. To provide transparency to the IAC, I have summarised the concerns from the general public and community groups in Table 5.18 and provided references to where the matter has been resolved earlier within this report.

In preparing this section, I have sought to be clear about the distinction between the Project design and the reference design. The reference design reflects one possible project design solution, whereas the Project design is the elements of the project described in the Public Works Order. Therefore, within this section I seek to differentiate between the need for an interchange, and the reference design of a certain interchange, with only the latter being discussed in this section.

In preparing this section, I also wish to point out that this review has not forensically interrogated the constructability of the reference design.
### Table 5.18: Project design themes

<table>
<thead>
<tr>
<th>Heading</th>
<th>Matters raised</th>
<th>Response reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interchange provision and layout</td>
<td>There were numerous submissions received relating to interchanges. Issues covered include:</td>
<td>R17, C19, C33, C34, R71, R82, R91</td>
</tr>
<tr>
<td></td>
<td>- The need to provide interchanges at Lower Plenty Road, Manningham Road and Bulleen Road.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Concern about the large footprint of interchanges.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Concern that both Lower Plenty Road and Manningham Road interchanges were circuitous and not intuitive.</td>
<td></td>
</tr>
<tr>
<td>Number of lanes along project corridor</td>
<td>Submissions raised concern about the number of lanes along the project corridor, with reference to the widest segment of the Eastern Freeway (between Tram Road and Middleborough Road).</td>
<td>C19</td>
</tr>
<tr>
<td></td>
<td>- Submitters suggested that the project had been ‘over-designed’.</td>
<td></td>
</tr>
<tr>
<td>Northern portal relocation</td>
<td>Numerous submissions were received requesting the northern portal be relocated further north, with a range of locations suggested for the portal.</td>
<td>C44, R118</td>
</tr>
<tr>
<td></td>
<td>- There was significant public support for both the SMART Taxpayers design and Banyule Option A2 design.</td>
<td></td>
</tr>
<tr>
<td>Southern portal relocation</td>
<td>Submissions raised concern about the Bulleen Road interchange, with particular emphasis on the large footprint impacting on open space.</td>
<td>R72, R73</td>
</tr>
<tr>
<td></td>
<td>- Submissions were received suggesting the southern portal be relocated further south to</td>
<td></td>
</tr>
</tbody>
</table>
Numerous submissions were received relating to both the exhibited EES design and alternate design for the Watsonia Station precinct.

Specific concerns related to pedestrian and cyclist accessibility to both the Station and Watsonia Road, the impact on the Watsonia Road Activity Centre and relocation of the bus stops.

### 5.7. Post Implementation Operations

The following section summarises and responds to submission raised by members of the public and community groups in relation to the impacts of the Project following implementation.

#### 5.7.1. Rosanna Road Post Implementation

There were a significant number of submissions received relating to the operation of Rosanna Road following implementation of the Project. A notable submission on this matter was received from the not for profit community group, Resolve Rosanna Road, which was established to advocate for action from the State Government in relation to transport on Rosanna Road, Rosanna. The submission doesn’t expressly state a position on the Project, however, the submission does request truck bans are employed on Rosanna Road following implementation of the Project. Resolve Rosanna Road’s submission, along with the other submissions relating to Rosanna Road are summarised and responded to below.

**Recommendations & Requests**

R131. Concern that Rosanna Road will remain a truck route following implementation of the Project, suggesting this limits amenity, safety, health and accessibility benefits of the Project. The submission suggests the Project fails to meet Objective 4: Improve access, amenity and safety for communities in the north-east. Also suggests the Project fails to deliver on the Scoping Requirements to improve connectivity for freight movement via the freeway network instead of local and arterial roads. Seeks a truck ban on Rosanna Road and the other arterial roads currently subject to the north east truck curfew.

At present, the primary freight route through the north-east includes the link comprising Greensborough Road, Rosanna Road and Bulleen Road. This corridor is primarily residential and poses amenity and safety concerns for the community, as was raised by a number of submitters.
The submissions primarily focussed on the impact of freight on Rosanna Road in particular, raising narrow lanes, tight road geometry and high volumes of trucks as principle causes for concern.

The Project responds to these concerns by providing a reliable, higher capacity alternative along the North East Link, which is expected to deliver a significant redistribution of trucks from the local arterial network to the Project corridor.

The resulting impact on the existing primary freight route through the north-east, in relation to anticipated average weekday truck volumes following implementation of the Project, is outlined at Table 5.19 relative to existing (2017) and No Project scenarios.

<table>
<thead>
<tr>
<th>Link</th>
<th>Total Average Weekday Truck Volume</th>
<th>Reduction between No and With Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>2036 No Project</td>
</tr>
<tr>
<td>Greensborough Road</td>
<td>5700 - 7400</td>
<td>8400 - 10800</td>
</tr>
<tr>
<td>Lower Plenty Road</td>
<td>1400 - 1900</td>
<td>1800 - 2500</td>
</tr>
<tr>
<td>Rosanna Road</td>
<td>2800 - 3600</td>
<td>3800 - 4900</td>
</tr>
<tr>
<td>Banksia Street</td>
<td>5300 - 6800</td>
<td>6700 - 8700</td>
</tr>
<tr>
<td>Bulleen Road</td>
<td>4100 - 5200</td>
<td>4500 - 5900</td>
</tr>
</tbody>
</table>

Table 5.19 outlines that there are anticipated reductions in the order of 6 to 76% between the With Project and No Project cases. Rosanna Road, specifically, is expected to experience reductions in truck volumes (between With Project and No Project cases) of approximately 64 – 67% (as an average). This equates to an approximate 51 – 56% reduction in truck volumes in 2036 With Project scenario from the existing volumes. This will deliver improved traffic flows, amenity and road safety outcomes for Rosanna Road.

Despite the improvements likely to be delivered by the Project, a number of public submissions requested the existing truck curfew on Rosanna Road be extended to a 24-hour period. There also appeared to be confusion within submissions, suggesting that the existing truck curfews were proposed to be removed by the Project.

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160 (Transport and Traffic Impact Assessment, 2019, pp. 146-147, 269-270, 401-402)
The EES outlines that the existing truck curfews, shown in Figure 5.18, which limits access for trucks in excess of 16.5 tonnes GVM from 10.00pm until 6.00am, 7 days a week\textsuperscript{161}, are proposed to be retained by the Project.

**Figure 5.18: Current North-Eastern Suburban Truck Curfew Locations**

The EES sets out the results of a sensitivity test which sought to understand the impact of extending the existing truck curfews to a 24-hour period. The 24-hour curfew test saw a general decrease in truck volumes from curfewed roads, to curfew-free arterial roads and North East Link.

Truck volumes were estimated to decrease on roads such as Greensborough Road and Main Road, and divert to curfew-free roads such as, Manningham Road and North East Link. Changes to car volumes were generally immaterial.

A review of the results revealed that truck volumes on Rosanna Road under this sensitivity test would increase. Enquiries with the Project team indicate that this increase was a result of the

\textsuperscript{161} (Heavy vehicle network maps in Victoria, 2018)
datum point used in the model which included a short-section of Rosanna Road which was relied upon by drivers using a non-curfewed east-west road as an alternate to those roads shown in Figure 5.18.

There are some freight vehicle types that are exempt from the truck curfews, namely over-dimensional and placard loads, which are discussed in response to R132.

R132. Suggests an alternative truck and OD route along Bell, Banksia and Albert Streets and Plenty Road

As a portion of the Project is tunnelled, over-dimensional (OD) and placard load vehicles are not removed entirely from the Greensborough Road, Rosanna Road, Lower Plenty Road and Bulleen Road corridor. A number of submissions expressed concern that these vehicles would remain on Rosanna Road following implementation of the Project. The submissions suggest that the road geometry, lane widths and land use along Rosanna Road are not suitable for OD and placard load vehicles.

By their nature, OD and placard load vehicles do not typically make up a significant proportion of traditional freight mix. The TTIA suggests that less than 2% of the truck fleet are expected to require detouring around the tunnel sections. For clarity, descriptions of both vehicle types are outlined at Table 5.20.

Table 5.20: OD and Placard Load Descriptions

<table>
<thead>
<tr>
<th>Type of vehicle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over-dimensional</td>
<td>Over-dimensional vehicles are Class 1 vehicles, that cater for OD combinations (including low loader/dolly combinations) that exceed 5.0 metres high or 5.0 metres wide or 30.0 metres long or 100.0 tonnes gross mass. Access is restricted by the Gazette Notice: Heavy Vehicle National Law, Multi-State Class 1 Load Carrying Vehicles Dimension Exemption, Notice 2016 (No. 1) including amendments.</td>
</tr>
<tr>
<td>Placard load vehicle</td>
<td>As per the Dangerous Goods (Transport by Road or Rail) Regulations 2018 A load that contains dangerous goods is a placard load if:</td>
</tr>
<tr>
<td></td>
<td>• It contains:</td>
</tr>
<tr>
<td></td>
<td>Dangerous goods in a receptacle, other than an article, with a capacity of more than 500 litres; or</td>
</tr>
</tbody>
</table>

162 (Transport and Traffic Impact Assessment, 2019, p. 405)
<table>
<thead>
<tr>
<th>Type of vehicle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 500 kilograms of dangerous goods in a receptacle, other than an article; or</td>
<td>• It contains an aggregate quantity of dangerous good of 250 or more and those good include – Dangerous good of UN Division 2.1 that are not aerosols; or Dangerous of UN Division 2.3; or Dangerous good of Packing Group 1; or • It contains an aggregate quantity of dangerous good of 1000 or more. • Under the Dangerous Goods Regulations, road authorities may determine whether dangerous goods may be or must or must not be transported on a specified route.</td>
</tr>
</tbody>
</table>

Likely Outcome of the Project

Currently, the Road Transport (Dangerous Goods) Act 1995 prohibits the transport of dangerous goods which are placard loads from travelling in or through any tunnel which forms a part of CityLink and portions of the West Gate and Monash Freeways. There is no current legislation that expressly prohibits placard loads from utilising tunnels, however, as the consequence of placard load crashes within tunnels is extreme, it is anticipated that the Road Transport (Dangerous Goods) Act would provide a Notice of Prohibition to exempt placard loads from accessing tunnels within the Project. The discussion within the TTIA supports this notion.

OD and placard loads will be able to access a portion of the corridor (the above-ground and open sections). Due to the limited vertical clearance, and likely restrictions on placard loads on tunnels, OD and placard vehicles will be required to use Greensborough Road south of Grimshaw Street then travel along the existing OD route of Lower Plenty Road, Rosanna Road, Banksia Street and Bulleen Road consistent with that shown at Figure 5.19.
As outlined earlier, the TTIA suggests that less than 2% of the truck fleet are expected to require detouring around the tunnel sections. This allows an estimate to be made of both the likely average weekday and peak hour OD and placard load volumes for the north-east freight corridor. For the purpose of the estimate, a peak hour to daily traffic volume ratio of 10% has been assumed. The results of this estimation are shown at Table 5.21 and Figure 5.20.
Table 5.21: Estimate of Average Weekday and Peak OD and Placard Load Volumes along the North-East Freight Corridor

<table>
<thead>
<tr>
<th>Link</th>
<th>Estimated average weekday OD and placard load volume</th>
<th>Estimated average peak hour OD and placard load volume</th>
<th>Reduction between No and With Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2036 No Project</td>
<td>2036 With Project</td>
<td>2036 No Project</td>
</tr>
<tr>
<td>Greensborough Road</td>
<td>168 - 216</td>
<td>40 - 56</td>
<td>17 - 22</td>
</tr>
<tr>
<td>Rosanna Road</td>
<td>76 - 98</td>
<td>25 - 35</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Banksia Street</td>
<td>134 - 174</td>
<td>82 - 106</td>
<td>14 - 18</td>
</tr>
<tr>
<td>Bulleen Road</td>
<td>90 - 118</td>
<td>54 - 68</td>
<td>9 - 12</td>
</tr>
</tbody>
</table>

Figure 5.20: Estimate of Maximum Average Weekday and Peak OD and Placard Load Volumes along the North-East Freight Corridor

Table 5.21 and Figure 5.2 indicate that the overall contribution of OD and placard vehicle volumes on the network is small. These small values in comparison to overall decreases in vehicle activity forecast on roads such as Rosanna Road under the ‘with project’ outcome (i.e. 11,600vpd) even after any passenger car unit (pcu) adjustments that overall operating conditions along the existing Greensborough Road, Rosanna Road, Banksia Street and Bulleen Road corridor will deliver a materially better operational outcome.
Alternate OD Routes

Consideration was given to an alternate alignment for a potential OD Route Network, however, all proximate arterial roads are more circuitous and support access to existing activity centres, shopping strips or have other geometric constraints.

VicRoads’ existing OD routes have been selected as they have minimal height and width impediments or mass restrictions but most importantly reflect the shortest route to other freeway standard roads. Accordingly, I am comfortable with the retaining the existing OD Route Network contained in the EES and reproduced at Figure 5.19.

R133. Suggests the wording of EPRT2 is modified to include the text: ‘Requirements for limiting the amount of construction haulage during the peak periods and complying with the limitation of the North East truck curfew’ and ‘Requirement for limiting the amount of haulage on Rosanna Road to contaminated material only, including how this commitment will be managed and monitored.’

Refer to response to R135.

Rosanna Road Safety

C98. A number of submissions have raised concern about road safety on Rosanna Road in the post implementation phase of the Project. The Rosanna Road submissions raise the following issues:

- Lane widths are generally in the range of 2.8m to 3.2m, which are considered narrow (a B-Double truck is typically 2.5m wide without mirrors).
- Roadside furniture and infrastructure is located within close proximity to the back of kerb within the clear zone, at risk of being struck by larger vehicles.
- The geometry of existing intersections presents constraints for some vehicle types, particularly when travelling at speed.
- Limited ability to cross Rosanna Road safely (as a pedestrian or otherwise) due to a high volume of traffic.

In submissions, the above concerns were considered to be exacerbated by the high volume of general traffic, and high truck traffic travelling along the corridor. Whilst the road geometry is not proposed to be altered as part of this Project, both general traffic volumes and truck volumes are expected to reduce following implementation of the Project, relative to both existing (2017) and 2036 No Project volumes.

Table 5.22 shows the total average weekday traffic volumes on Rosanna Road between the 2017 and 2036 ‘with project’ and ‘no project’ cases for comparative purposes.

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165 (Heavy vehicle network maps in Victoria, 2018)
### Table 5.22: Total average weekday traffic volumes on Rosanna Road

<table>
<thead>
<tr>
<th>Link</th>
<th>Total average weekday volume</th>
<th>Reduction between No and With Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>2036 No Project</td>
</tr>
<tr>
<td>Rosanna Road</td>
<td>39,000 – 50,000 41,000 – 54,000 31,000 – 41,000</td>
<td>~24%</td>
</tr>
</tbody>
</table>

As referenced in response to R131 and R132, Rosanna Road is expected to experience a material decrease in truck volumes of approximately 64 – 67% with the introduction of the Project (compared to the 2036 No Project scenario). This will also result in a reduction of the proportion of trucks within the wider traffic mix.

In general, as traffic volumes increase, the number of crashes increases, and subsequently the number of multiple vehicle crashes increases\(^{166}\). The reductions in traffic volume projected on Rosanna Road following the Project deliver outcomes more consistent with the functional role and classification of the street.

The material decrease in truck volumes will also alleviate operational issues around geometric constraints including narrower than desirable traffic lane widths.

Given the above discussion, I am satisfied that Rosanna Road will experience improved road safety outcomes following the implementation of the Project.

### 5.8. Public Transport

A range of submissions were received in relation to the potential impacts of the project on public transport post implementation. In responding to submissions from Local Government authorities and key stakeholder group, most of the public transport matters have been covered. To provide transparency to the IAC, I have summarised the concerns from the general public and community groups in Table 5.23 and provided references to where the matter has been resolved earlier within this report.

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\(^{166}\) (The relationship between traffic volume and road safety on the secondary road network, 2010, p. 21)
Table 5.23: Public transport themes

<table>
<thead>
<tr>
<th>Heading</th>
<th>Matters raised</th>
<th>Response reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doncaster Rail median reservation and future deliverability</td>
<td>Submissions raised concerns about the reservation along the Eastern Freeway for heavy rail being overridden by the Project. Submissions were concerned that the delivery of the Doncaster Busway would compromise the future deliverability of a heavy rail, because there was a mass transit option in place, and because the reservation had been used.</td>
<td>R7</td>
</tr>
<tr>
<td>Broader network connectivity and upgrade</td>
<td>Submissions raised concerns about how the Project would connect in with the existing broader public transport network. There were numerous requests for public transport upgrades outside the Project corridor. There was a focus on how buses from the Busway would integrate with the existing network beyond the intersection of Hoddle Street and Alexandra Parade.</td>
<td>C1, C5</td>
</tr>
<tr>
<td>Retention of bus stop at Bulleen Road on-ramp</td>
<td>Submissions raised concerns about the removal of the bus stop at the Bulleen Road city bound on-ramp. This matter was not raised in other submissions, so is responded to below the table.</td>
<td>N/A</td>
</tr>
<tr>
<td>Bus service frequency in the north-east</td>
<td>There were a number of submissions requesting a commitment to increasing bus service frequency in Melbourne’s north-east to both take advantage of the Project corridor and to discourage mode shift away from public transport to cars following implementation of the Project.</td>
<td>C14, R32</td>
</tr>
</tbody>
</table>
Retention of Bus Stop at Bulleen Road On-ramp City Bound

The EES Map Book shows that there does not appear to be any changes to the citybound on-ramp bus stop on Bulleen Road. Ultimately, it will be the decision of the Department of Transport as to how the broader public transport infrastructure and networks will integrate with the project and whether this stop is to be retained. Refer to response to C14.

5.9. Active Travel

5.9.1. Preamble

The Project incorporates a broad program of walking and cycling infrastructure upgrades. A number of submissions have raised either a range of modifications, or additional projects to complement the proposed walking and cycling upgrades. A spatial summary of these requests is shown in Figure 5.21, with further information on each (and localised maps) presented in Annexure C.

Figure 5.21: Summary of active travel project sheets
5.9.2. Assessment principles

In assisting the IAC to determine whether these suggestions warrant consideration for inclusion in the Project’s scope, I have prepared a series of assessment principles which help guide their inclusion or exclusion.

I have sought guidance on the outlined principles from a review of relevant Project documents and State Government strategies and plans, even those plans or documents considered which do not specifically and directly assist with this process but are significant to with determining the Project’s area of influence. Those principles considered most relevant are set out in Table 5.24.

Table 5.24: Principles and tests prepared to review amendments and complementary projects for active travel

<table>
<thead>
<tr>
<th>Source</th>
<th>Relevant text / section</th>
<th>Determination Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Works Order(^{167})</td>
<td>The public works to which the Order relates do not specifically outline a provision for active transport.</td>
<td>N/A</td>
</tr>
<tr>
<td>Scoping Requirements – Evaluation Objective(^{168})</td>
<td>To increase transport capacity and improve connectivity to, from and through the northeast of Melbourne, particularly freight movement via the freeway network instead of local and arterial roads, while managing the effects of the Project on the broader and local road, public transport, cycling and pedestrian transport networks.</td>
<td>For an amendment or complementary project to be considered as in scope, it must respond to an issue of <strong>direct affect by the Project</strong>. Does the project or amendment fill a gap which has not been met by the Project around the test of <strong>managing the effects of the Project</strong>?</td>
</tr>
<tr>
<td>Scoping Requirements – Design and Mitigation Measures(^{169})</td>
<td>Describe the proposed transport network design features and approach to optimise and integrate the Project with the existing pedestrian and bicycle network, including any proposed solutions to enhance pedestrian and bicycle access in the vicinity of the Project.</td>
<td>Does the design feature <strong>optimise and integrate the Project</strong> with existing pedestrian and bicycle networks? Does the design feature <strong>enhance</strong> pedestrian and bicycle access in the vicinity of the Project?</td>
</tr>
</tbody>
</table>

\(^{167}\) (Public Works Order: North East Link Project, 2018)
\(^{168}\) (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 13)
\(^{169}\) (Scoping Requirements for North East Link Project Environmental Effects Statement, June 2018, p. 13)
The Victorian Cycling Strategy seeks to achieve the following objectives:

- Provide, continuous, low stress routes
- Prioritising cycling networks to train stations
- Addressing gaps in Strategic Cycling Corridors (SCC) and continuing to incorporate new cycling infrastructure into major transport projects
- Prioritise investment in SCCs to connect important destinations such as the central city, National Employment and Innovation Clusters (NEICs), Major Activity Centres (MACs) and other destinations of metropolitan and state significance

Does the proposed project or amendment address a gap in the SCCs?

Does the project provide connectivity to a train station, park and ride, NEIC or MAC?

Plan Melbourne provides the definitions and classifications for the origins / destinations that the Victorian Cycling Strategy refers to, i.e. NEICs and MACs.

Considering the above context, I have used the following principles to determine whether a proposal warrants inclusion into the Project.

First, I have considered whether the proposal:

- is in a location which is directly and physically affected or altered by the Project, and/or;
- specifically mitigates the negative effects of the Project (i.e. potential severance), and/or;
- better integrates the Project with the existing active transport network, and/or;
- fills a strategic gap which involves connecting the corridor with an important destination.

If one or more of the above criteria are met, I have then considered whether the proposal:

- is located in the vicinity of the Project (i.e. as a general rule, within the Project boundary defined in the Public Works Order)

In essence, the proposal must be consistent with the principles outlined in Table 5.24 and be generally within the project bounds defined by the Public Works Order.

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171 (Plan Melbourne, 2017 - 2050, 2017, p. 16 and 52)
Lastly, it is worth noting that the Victorian Cycling Strategy makes clear that whilst the Victorian Government will continue to require high-quality cycling infrastructure as part of major transport projects, it is the responsibility of local councils to develop and manage their own municipal bicycle networks.

5.9.3. Assessing proposed projects

Having performed the key tests raised in Table 5.24, I then made one of the following determinations:

- Does the proposal warrant consideration by the IAC?
- Whether the proposal warrants consideration but is not the responsibility of the Project to deliver?
- An ‘Other’ outcome (i.e. the proposal does not warrant consideration by the IAC)

Given the large number of submissions received, a summary of the proposed projects along with their locations and the determination are shown over a series of maps and tables in Annexure C, with a summary of the projects which I deem to warrant further consideration by the IAC for inclusion in the project summarised below.

5.9.4. Proposals which warrant further consideration by the IAC

Based on the criteria above and considering the remit and scope of the Project, I am of the opinion that the following proposals warrant further consideration by the IAC for inclusion in the Project.

[1] On-road bicycle lanes between Civic Drive, Greensborough and existing lanes on Heidelberg – Kinglake Road in Diamond Creek.

In the event that Diamond Creek Road is duplicated or upgraded as a direct component of the Project (earlier advice is this will be delivered as a complementary upgrade by others), then provision should be made for bicycle lanes and/or shared paths in the upgraded section, linking into the existing Greensborough Bypass path. Note that bicycles can travel in the bus lane for a section southbound on this link.

Criteria met: Directly affected by Project, within/proximate to project bounds.

[2] Underpass or SUP in shoulder trench at Drysdale Street.

Currently, pedestrians cross a minor side road at Drysdale Street. The reference design proposes an intensified crossing environment (i.e. across the access to Lower Plenty Road, which is much larger and has multiple crossings). The proposal is for the SUP to be either lowered into the NEL trench alongside the roadway to form an underpass (which would return to surface level at a later point), or to provide a separate underpass elsewhere to mitigate the need for the surface crossing. While it is not the role of this evidence to provide a

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172 (Victorian Cycling Strategy 2018 - 28, 2017, p. 28)
recommendation on the preferred design solution, the improved connectivity sought by this proposal warrants further consideration for inclusion in the project.

**Criteria met:** Directly affected by Project, managing the effects of the Project, within/proximate to project bounds.

[3] **New walking and cycling bridge across Yarra River connecting Yarra Street and Banksia Park.**

In my view, the proposed shared bridge at Yarra Street is out of the scope of the project based on location, but an upgrade to the existing road bridge crossing on Manningham Road and a connection to the existing trail from the proposed shared path on Manningham Road warrants consideration to achieve a similar level of connectivity as sought by this submission. This would link the project into the SCC through to the existing PBN and would provide access to the La Trobe NEIC.

**Criteria met:** Integrating the Project with the surrounding network, within/proximate to project bounds.

[4] **Provision of shared paths on Templestowe Road (part).**

The proposal seeks provision of shared paths on Templestowe Road. While paths along the length of the road are beyond the remit of the project, there is a small section of Templestowe Road (between Bridge Street and the Banksia Park access) which falls within the project bounds. This stretch connects to a SCC on Templestowe Road and broader access to Banksia Park beyond and as such, consideration should be given to extending the Project’s shared paths to connect along this part of Templestowe Road – refer Figure C.7.

**Criteria met:** Integrating the Project with the surrounding network, within project bounds.

[5] **Provide good quality walking and cycling access to the Bulleen Park and Ride facility from all directions.**

Investigation of a more direct and low-stress route from the intersection of Bulleen Road and Thompsons Road to the Bulleen Park and Ride should be explored to provide improved access from catchments. This is especially relevant to catchments in the south and north, where routes proposed in the reference design are more circuitous than desirable and require an extended walk along Thompsons Road to access the Park and Ride. It is noted that there is a grade difference at this location which would need to be overcome.

**Criteria met:** Directly affected by Project, integrating the project with the surrounding network, connecting to Park & Ride, within/proximate to project bounds.

The reference design shows the existing path is proposed to be modified in this section (adjacent to Willsmere Park), as such, it would be reasonable to consider addressing flooding issues during and part of any upgrade (i.e. where modifications are proposed).

Criteria met: Directly affected by Project, within/proximate to project bounds.


Given widening of the freeway is expected to extend this tunnel, it would be reasonable for the modified tunnel to meet the relevant standards along its length, including lighting.

Criteria met: Directly affected by Project, managing the effects of the Project, within/proximate to project bounds.

[8] Kilby Road link Path incorrectly named and should be rectified.

The submission notes that Sheets 28-42 of the NEL Map Book shows the shared path crossing Kilby Road incorrectly named as the ‘Anniversary/Outer Circle Trail’. I would support this to be corrected in later design iterations.

[9] Improve visibility and safety through creative lighting and line marking in all underpasses on Koonung Creek Trail.

Where underpasses are added or modified (i.e. extended due to freeway widening), they should meet the relevant standards and considerations, such as safety.

Criteria met: Directly affected by Project, managing the effects of the Project, within/proximate to project bounds.

[10] Improve wayfinding along entire Koonung Creek Trail.

Where infrastructure is added or modified, wayfinding should be updated along the Koonung Creek Trail (for example, to direct to new bridge links or replace wayfinding lost in construction).

Criteria met: Directly affected by Project, managing the effects of the Project, within/proximate to project bounds.
5.10. Construction Management

5.10.1. Preamble

A range of submissions were received in relation to the transport impacts of the construction period of the Project. Delivering a project of this scale and scope will have impacts; it is unavoidable. The key to a manageable outcome is in understanding these impacts and implementing appropriate mitigation measures to minimise those impacts and manage the associated risk.

In my consideration of the submissions and the specificity of mitigations requested by submitters, I have been mindful that the construction methodology proposed in the EES outlines one approach to constructing the reference design, which is one approach to delivering the Project.

The TTIA and EES assesses the potential construction impacts of the Project on the road network. It is appreciated that this assessment is predicated on the Reference Design and a range of assumptions (including in methodology and timeline) made at the time of writing. The contractor may propose an alternate methodology which alters some of the impacts associated with the construction of the Project.

As such, in reviewing submissions I have sought to determine whether the EPRs provide sufficient confidence and or safeguard to manage and mitigate construction risks in later stages of planning, for example, during the preparation and implementation of traffic management plans.

The following section summarises the issues raised in submissions on construction and provides my responses.

5.10.2. Impact of Construction Traffic – Forecast Demand (General) and Route Selection

R134. There is concern that the forecast increase in truck volumes will result in impacts to congestion, road safety and amenity. Suggest that 620 vehicles per day in the northern portion of the works is too significant. Submitters request that trucks be made to use the freeway network as much as possible.

Truck movements are generated by the Project through spoil haulage and delivery of materials and equipment. As outlined above, the TTIA and EES presents an assessment based on one construction methodology which SmedTech has been instructed through NELP to assume in order to make an assessment on the transport impacts.

The volume of trucks on certain streets is dependent on a range of assumptions, including the hours of operation (i.e. 8-hour or 20-hour haulage scenarios), the location of the TBM launch (i.e. north or south launch scenarios) and the development of construction traffic management plans which determine the routes trucks do or do not take.

The work that’s been done to inform the TTIA and EES indicates that the level of projected demand is broadly speaking, manageable.
The TTIA has identified several potential haulage routes and estimated the truck volumes for two haulage periods, then assessed the projected demand relative to the spare capacity along the routes. The TTIA also suggests that it is possible for truck haulage to occur outside the peak periods, which I believe is entirely acceptable.

There are trade-offs involved between a shorter and longer haulage period. The TTIA demonstrates how either scenario will be managed from a transport perspective, however transport is only one relevant factor in this decision. It is my view that a multi-disciplinary holistic approach should be taken to determine on a precinct by precinct basis which management approach is fit for purpose.

Given the range of, and interactions between, the assumptions I do not believe it to be my role to provide a judgement on which scenario is most appropriate for construction. Rather, I have sought to test the EPRs to determine whether they are sufficiently robust to manage the uncertainty inherent in a project of this scale at this level of planning.

It is my view that EPR T2 and T3 provide a suitable mechanism to manage and mitigate the impacts of truck volumes, the relevant components of both EPRs is reproduced below:

**EPR T2 Transport Management Plan(s) (TMP)**

Prior to commencement of relevant works, develop and implement Transport Management Plan(s) (TMP) to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and bicycle movements and existing public facilities during all stages of construction.

The TMP must be informed and supported by an appropriate level of transport modelling and must include:

- Requirements for maintaining transport capacity in the peak periods
- Requirements for limiting the amount of construction haulage during the peak periods
- A monitoring program to assess the effectiveness of the TMPs on all modes of transport
- Where monitoring identifies adverse impacts, practicable mitigation measures
- Potential routes for construction haulage and construction vehicles travelling to and from the Project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable
- Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable
- Consultation with VicRoads and relevant transportation authorities.
A TMP may be split into precincts where appropriate but must consider other precinct TMPs through the Transport Management Liaison Group as per EPR T3.

TMPs must be submitted to the relevant authority for approval.

**EPR T3 Transport Management Liaison Group**

A Transport Management Liaison Group (TMLG) must be established and convene 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, emergency services, the Project, relevant transportation authorities and relevant local councils.

The TMLG will be a forum for exchange of information and discussion of issues associated with Transport Management Plans. This must include review of proposed haulage routes for construction sites south of the northern tunnel portal to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes.

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

The TMLG must meet at least monthly until the completion of construction.

**C99. Concern about truck traffic on the following streets, or accessing the following locations:**
- Larbert Avenue and Walnut Grove, Balwyn North
- Musca Street Reserve, Balwyn North
- Kampman Street, Bulleen
- Katrina Street, Doncaster

The TTIA outlines that the above sites are expected to receive approximately 10 deliveries per day\(^\text{173}\). None of the streets are proposed to be used for spoil haulage. These deliveries are expected to occur within day light hours, which would result in approximately two vehicles per hour. It is my view that this volume of truck traffic is manageable within the existing network, and EPRs.

The TMPs required by the Project must be approved by relevant road authority. It is my experience that the road authorities ensure that the applicant (the contractor) must perform adequate checks to confirm that the geometries of the streets being utilised are suitable for the vehicle size proposed.

In relation to access to Musca Street Reserve, the TTIA proposes that access is to be off Burke Road. It appears that this may require further consideration, as the grade difference between

\(^{173}\) (Transport and Traffic Impact Assessment, 2019, p. 462)
Burke Road and the Reserve would present access challenges. However, it is my view, that if access cannot be achieved off Burke Road, the local street network (The Boulevard and Musca Street) can absorb the proposed impact of two trucks per hour during daylight hours from a transport perspective.

C100. There is concern about the need for the construction period to extend for 7 years.

I appreciate there is concern about the estimated length of construction. As outlined above, the assessment of construction impacts is based on an assumed construction methodology. Whilst both launch scenarios result in a seven-year construction period, the intensity of construction varies over the construction period as shown in Figure 5.22 and Figure 5.23.

The TMLG will also be in place, along with an independent environmental auditor, to ensure that TMPs are monitored over the construction period, and traffic management mitigation measures are implemented if adverse impacts are identified. This is suitably managed by EPR T2 and T3.

Figure 5.22: Forecast daily construction truck trips, all sites – southern launch site

Figure 5.23: Forecast daily construction truck trips, all sites – northern launch site
There is concern about the cumulative impacts of other infrastructure works such as Greensborough Station upgrade and Fitzsimmons Lane upgrade.

Section 10 of the TTIA outlines that at the time of preparing the TTIA, there was no commitment to undertake other significant works in the immediate vicinity of the Project. However, should other infrastructure projects be proposed, EPR T2 provides controls for the preparation of Transport Management Plans (TMPs) during construction. Sub-point five requires that the TMP has “consideration of construction activities for other relevant major projects occurring concurrently with construction activities for North East Link and potentially impacting modes of transport in the same area”. EPR T5 requires monitoring and practicable mitigation measures where adverse impacts are identified.

TMPs will have input from a range of agencies and will be reviewed and approved by the relevant authorities. I am satisfied that the EPRs (including preparation of TMPs) provide adequate protection from this concern.

Requests to limit truck haulage or implement truck bans on the following roads during construction:

- Rosanna Road, Rosanna
- Avoid routes that front schools, naming Hillview Road, Viewpoint Road, Mountainview Road and Balwyn Road

The haulage routes proposed in Section 10.2 of the TTIA are dependent on the construction site locations and the destinations (north along Hume Freeway and near Dandenong), with the haulage routes proposed to utilise the existing B-double network, and freeway network where possible, as shown in Figure 5.24.

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174 (Transport and Traffic Impact Assessment, 2019, p. 430)
For haulage from locations along Manningham Road, Bulleen Road and the Eastern Freeway west of Doncaster Road, vehicles are assumed to use Bulleen Road and Chandler Highway to access Bell Street. From Bell Street here are three potential options: Sydney Road, High Street and Plenty Road / Albert Street. One potential strategy to manage the impact of spoil haulage is to spread vehicles across the available routes.

Rosanna Road is not proposed to be used for general spoil haulage; however, it is proposed to be used to haul contaminated spoil. This will greatly limit the number of haulage trucks on Rosanna Road. The anticipated haulage volumes are shown in Table 5.25.

Table 5.25: Estimated daily haulage volumes for Rosanna Road (southbound only)

<table>
<thead>
<tr>
<th></th>
<th>Northern launch site</th>
<th>Southern launch site</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average month</td>
<td>Peak month</td>
</tr>
<tr>
<td>Rosanna Road haulage volumes</td>
<td>50</td>
<td>60</td>
</tr>
</tbody>
</table>

175 (Transport and Traffic Impact Assessment, 2019, p. 439)
As contaminated spoil needs to be taken to specific locations south of Rosanna Road, I do not believe it is reasonable to restrict haulage from Rosanna Road entirely. Based on the estimated volumes outlined in Table 5.25, I am of the view that the haulage volumes appear manageable.

As for the concern about haulage along streets with schools, EPR T2, which requires the development of TMPs, includes the following requirements:

- Potential routes for construction haulage and construction vehicles travelling to and from the Project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable.

The term ‘where practicable’ has not been defined, however, it is my view that as local councils are represented on the TMLG, and monitoring of TMPs is required, the impacts to local streets can be managed and/or mitigated.

I am satisfied that the EPRs provide adequate protection from this concern.

C102. There is concern about increase in general traffic volumes on Greensborough Highway / Road, Greensborough during construction.

As outlined in my response to R134, the three sources of increase traffic generated by the Project are the haulage of spoil, delivery of materials and equipment and traffic associated with construction workers.

The traffic impacts along Greensborough Road are the greatest in the southern launch scenario. This would result in approximately 220 vehicles per hour (two-way) assuming an 8-hour spoil haulage.

There are 6-7 construction sites that would generate an additional 2 deliveries per hour (likely up to 14 per hour), and approximately 140 per day.

There are several construction zones along Greensborough Road which will staff up to 750 workers. The shifts are proposed to operate between 7:00am and 7:00pm which means that staff will arrive during the AM peak and exit toward the end of the PM peak, as shown in Figure 5.25.
Figure 5.25: Current Daily Traffic Profiles on Greensborough Highway

The cumulative impact of construction traffic along Greensborough Road is likely to be up to 970 vehicles per hour (occurring twice per day, reducing to approximately 220 vehicles per hour during the day).

The spare capacity on Greensborough Road has been assessed during and between the peaks and is shown in Table 5.26.

Table 5.26: Greensborough Road potential spare capacity

<table>
<thead>
<tr>
<th>Time period</th>
<th>Two-way hourly volume</th>
<th>Potential spare hourly capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM peak</td>
<td>3,950</td>
<td>0</td>
</tr>
<tr>
<td>PM peak</td>
<td>4,150</td>
<td>0</td>
</tr>
<tr>
<td>Between AM and PM peaks</td>
<td>3,550</td>
<td>600</td>
</tr>
<tr>
<td>Between PM and AM peaks</td>
<td>1,500</td>
<td>2,650</td>
</tr>
</tbody>
</table>

Table 5.26 highlights that there is no spare capacity within either peak hour, which is of concern when construction workers finish their shift in the PM peak and there is no spare capacity along Greensborough Road.

There are several options available to mitigate this impact: changing staff shift times, extending the haulage period to 20 hours, encouraging car-pooling or sustainable transport options for construction workers.

(Transport and Traffic Impact Assessment, 2019, p. 449)
It is my view that EPR T2 which requires Traffic Management Plans is sufficient to safeguard against these potential adverse effects. EPR T2 outlines TMPs are to be supported by “an appropriate level of transport modelling and must include... requirements for maintaining transport capacity in the peak periods”, “a monitoring program to assess the effectiveness of the TMPs on all modes of transport” and “where monitoring identifies adverse impacts, practicable mitigation measures”.\(^{177}\)

R136. Request to not utilise the following streets for construction access:

- Somers Avenue, Macleod
- Bulleen Road, Balwyn North
- Borlase Street, Colleen Street, Crew Street, Yallambie

EPR T2, which requires the development of TMPs, includes the following requirements:

- Potential routes for construction haulage and construction vehicles travelling to and from the Project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable.

I am satisfied that the EPR provides an adequate safeguard from this concern.

5.10.3. Construction Staff Shift Change Periods and Parking Impacts

A number of submissions raised concerns about the impact of construction workers on both traffic flows and parking supply. Their concerns and recommendations are summarised below.

R137. There is concern that staff shift times coincide with existing peak hours, creating unnecessary increases in congestion. Submissions recommend requiring staff shifts to be shifted outside weekday commuter peaks (recognising the peak hour starts at different times in different parts of the city).

The GTA Peer Review Report raised a similar finding. A review of VicRoads Traffic Profiles in the vicinity of North East Link construction sites identified a morning peak occurring at 7:00am and a wider evening peak occurring at approximately 5:00pm.\(^{178}\) From this review, construction traffic is anticipated to arrive at or immediately before the peak of the morning peak period and depart near the evening peak hour. The extent of the problem would be dependent on specific network operations and the scale of the workforce required at each sub-project site.\(^{179}\)

\(^{177}\) (North East Link Environmental Effects Statement, 2019, pp. 27-63)

\(^{178}\) VicRoads Traffic Profiles, as cited in (North East Link (NEL) Environment Effects Statement: Traffic and Transport Peer Review, 2019, p. 68)

\(^{179}\) (North East Link (NEL) Environment Effects Statement: Traffic and Transport Peer Review, 2019, p. 68)
Notwithstanding, suitable provision has been made to manage risks under EPR T2 (Construction) which requires Traffic Management Plans to be supported by “an appropriate level of transport modelling and must include... requirements for maintaining transport capacity in the peak periods”, “a monitoring program to assess the effectiveness of the TMPs on all modes of transport” and “where monitoring identifies adverse impacts, practicable mitigation measures”.

I am satisfied that the wording of these EPRs provides sufficient protection from potential adverse effects.

R138. There is concern that construction staff parking will impact on existing parking supply, with recommendations that dedicated parking be provided for workers to limit impacts. Alternative locations included the ‘old drive in site’.

- Concern that Watsonia Road traders will be negatively impacted by construction workers parking.
- Concern that construction workers will park in Colleen Street, Borlase Street, Drysdale Street and Debra Court.
- Concern that residents of Mountain View Parade will not have access to park on their street and will have to park elsewhere during construction.

180 (North East Link Environmental Effects Statement, 2019, pp. 27-63)
EPR T2, which requires the development of TMPs, includes the following requirements:

- Provision of alternative parking where practicable to replace public and commuter parking lost as a result of Project construction activities
- Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable

I am satisfied that the EPR provides an adequate safeguard from this concern.

5.10.4. Impact of Road Closures and TMPs

A number of submissions raise general concerns about the impacts of road closures and the impacts of redistribution of traffic, suggesting that resulting congestion will severely impact accessibility. Whilst a lot of submissions were broad in nature, there were some specific road closure impacts that were raised by numerous submissions. I will speak to the impacts of road closures broadly first, and then focus on specific road closures in greater detail.

Road closures

C103. There is concern that road closures will limit access to residential properties and community or sports facilities. Submissions suggest that insufficient detail or consideration has been given. Specific locations referenced in submissions include:

- Bulleen Park
- Marcellin Old Collegians FC
- Banksia Park including Heide
- Red Rooster, Greensborough Road, Greensborough
- Watsonia Primary School
- Elgar Park Hockey Club
- Yarraleen Cricket Club
- Watsonia Road
- Estelle Street
- Kempston Street
- Crew Street
- Drysdale Street

Section 10.5 of the TTIA summarises the potential short and long-term closures that are assumed to be required. Short term closures are proposed to be managed under TMPs as required by EPR T2. Longer term closures (closures longer than a long weekend) have been listed within the TTIA on page 466, with specific mitigations outlined.
The TTIA states: "Closures and diversions would be required for the Project’s construction. These closures and diversions would need to be undertaken in a way to minimise the impact to the surrounding area, while allowing sufficient space for the safe construction of the Project."\(^{181}\)

Where possible, it is recommended that NELP strongly encourage construction methodologies that reduce the extent of closures. However, the impacts of construction will ultimately be managed by the two construction EPRs, EPR T2 and T3.

The salient details that support access to be maintained include:

- Prior to commencement of relevant works, develop and implement Transport Management Plan(s) (TMP) to minimise disruption to affected local land uses
- The TMP must be informed and supported by an appropriate level of transport modelling and must include: A monitoring program to assess the effectiveness of the TMPs on all modes of transport
- Where monitoring identifies adverse impacts, practicable mitigation measures
- Potential routes for construction haulage and construction vehicles travelling to and from the Project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable
- Measures to ensure connectivity and safety for all transport network users during construction
- A Transport Management Liaison Group (TMLG) must be established and convene 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, emergency services, the Project, relevant transportation authorities and relevant local councils.

It is my view that the EPRs provide sufficient mechanism to ensure that access to properties will be maintained where practicable, with measures to ensure that where adverse impacts are experienced, there is a trigger to ensure mitigation measures are implemented.

\(^{181}\) (Transport and Traffic Impact Assessment, 2019, p. 465)
C104. There is concern that road closures will increase congestion and result in network delays and increased travel time, including impacts to local streets.

Delivering a project of this scale and scope will have impacts; it is unavoidable. The impacts of the construction methodology assumed for the EES have been measured and the TTIA demonstrates that the impacts on the transport network can be managed.

EPR T2 provides an adequate safeguard in relation to the requirement to monitor the implementation of TMPs.

C105. There is concern that there is no dispute resolution process included in either the EES or the EPRs for when issues arise with implementation of TMPs.

EPR T2 outlines “TMPs must be submitted to the relevant authority for approval.” Schedule 7 of the Road Management Act, 2004, provides the framework in which road authorities must provide approvals, and refers to a dispute resolution process. It is my view that that ultimately the responsibility lies with the relevant road authority, and the existing legislative frameworks should be relied upon.

EPR T3 provides a safeguard, by ensuring that the TMLG meet to discuss any issues that arise through the implementation of TMPs. Residents will be able to make contact with member organisations of the TMLGs (i.e. VicRoads, the Project team, relevant transport authorities, local councils) who will be in a position to support the resolution of any ongoing disputes.

EPR SC2 (from within Technical Report I, Social Impact) outlines the requirement for the Project to implement a communications and community engagement plan. The EPR has been reproduced in full below, with the relevant sections underlined.

**Implement a Communications and Community Engagement Plan**

Prior to construction, prepare and implement a Communications and Community Engagement Plan to engage the community and potentially affected stakeholders and communicate progress of construction activities and operation. The plan must include:

- A process for identifying community issues and the recording, management and resolution of complaints from affected stakeholders consistent with Australian Standard AS/NZ 10002:2014 Guidelines for Complaint Management in Organisations

- Approach to stakeholder identification

- Enquiry management and record keeping approach and procedures including making available a 24 hour telephone number, postal address, and an email address and publishing these on the Project website
• Approach to communicating and engaging with the community and potentially affected stakeholders in relation to:
  o Construction activities including temporary facilities and impacts that may affect the community, businesses or individual stakeholders (e.g. dust, noise, vibration and light) and relevant mitigation (e.g. relocations policy)
  o Changes to transport conditions and relevant mitigation (e.g. road closures, detours).

• Identifying how stakeholders can access information on environmental performance that is to be made publicly available

• Incident and emergency communications, including notification methods and timeframes in the event of a major incident or overrun

• Approach and processes to ensure that the workforce has appropriate community awareness and sensitivity

• Innovative communications tools and methods to enhance the Project’s ability to effectively communicate and engage with the community and stakeholders

• Approach to engaging with local schools to provide education opportunities on Project activities

• Approach to making relevant Project information available to the community, with specific consideration to vulnerable groups (including culturally and linguistically diverse groups)

• How it will evaluate the effectiveness of the communication and engagement under the Communications and Community Engagement Plan.

The Communications and Community Engagement Plan must consider and where appropriate address matters of interest or concern to the following stakeholders:

• Municipalities
• Recreation, sporting and community groups
• Potentially affected residents and property owners
• Potentially affected business
• Other public facilities in proximity
• Religious and worship groups
• Vulnerable groups.
It is my view that the EPRs satisfactorily address this concern.

R139. Request for adequate notice to be provided to residents and businesses prior to implementing TMPs. One submitter recommended that one month’s notice would be suitable.

Section 7, Clause 10 of the Road Management Act, 2004, relates to the duty to consult members of the public. Sub-clause 2 outlines: “If practicable, [the applicant] should conduct appropriate consultation with the persons likely to be significantly affected.” The Road Management Act does not provide an indication of the acceptable notice period or provide detail on what is appropriate consultation.

Whilst it is not a specific requirement from a transport perspective, I acknowledge that the Project may wish in some instances to exceed the expectations of the Road Management Act. EPR SC2 (from within Technical Report I, Social Impact) outlines the requirement for the Project to implement a communications and community engagement plan. The EPR the relevant sections have been reproduced below.

“Prior to construction, prepare and implement a Communications and Community Engagement Plan to engage the community and potentially affected stakeholders and communicate progress of construction activities and operation. The plan must include:

- Approach to communicating and engaging with the community and potentially affected stakeholders in relation to:
  - Construction activities including temporary facilities and impacts that may affect the community, businesses or individual stakeholders (e.g. dust, noise, vibration and light) and relevant mitigation (e.g. relocations policy)
  - Changes to transport conditions and relevant mitigation (e.g. road closures, detours)."

It is my view that the concern can be satisfactorily managed through EPR SC2.

R140. Recommend EPR T2 (Transport Management Plans) be strengthened to provide quantifiable measures and parameters that provide accountability over outcomes for impacted parties.

I acknowledge the community concern surrounding construction of a project of this scale. In my experience, developing EPRs is a challenging balancing act that between the level of detail provided given the uncertainty inherent in a reference design. EPRs are the mechanism used to manage Project outcomes. The plans exhibited as part of the EES represent a ‘reference design’ and therefore reflect one possible Project design solution. The challenge with including specific measures and parameters within an EPR is that the controls may not be relevant through the detailed design phase.

In addition, EPR T2 relates to the development of TMPs. TMPs must balance a range of competing interests for road space and priority. Achieving prescriptive, quantifiable measures or
parameters may not be technically feasible in all scenarios. The TMLG provides an important forum for the representative group to articulate these competing interests and provide feedback on TMPs.

The transport modelling, and traffic monitoring that is required by both EPR T2 and EPR T5 to input into TMPs will also assist in mitigating adverse impacts.

It is my view that the current EPRs provide sufficient control to provide accountability over construction outcomes.

R141. Recommend that the contractor considers trialing the use of speed cameras to enforce temporary speed limits during construction.

Whilst I acknowledge that the recommendation has merit, the contractor does not have authority to implement enforcement of speed limits.

C106. There is concern about emergency services access residential streets.

EPR T2 requires TMPs to be developed in consultation with emergency services, stating TMPs must include “suitable measures, developed in consultation with emergency services, to ensure emergency service access is not inhibited as a result of Project construction activities.”

Emergency services representatives must also be included in the TMLG in accordance with EPR T3. This will allow for emergency services representatives to review and provide feedback on TMPs prior to implementation to ensure that access is not compromised.

It is my view that the EPRs adequately satisfy this concern.

Adequacy of Barak Street, Bullen Access to Trinity Sports Grounds

R142. Request for signalisation of the intersection of Barak Street and Thompsons Road to facilitate safe access to Trinity Playing Fields. Concern about truck volumes on Barak Street. Suggestions that Barak Street is not adequate for construction access on a temporary basis.

Please see response to R25.

5.10.5. Access to Watsonia Station and Doncaster Park and Ride during construction

C107. There is concern relating to pedestrian access to Doncaster Park and Ride and Watsonia Station will be impacted during construction resulting in poor road safety outcomes and delays.

EPR T2 requires the development and implementation of Transport Management Plans, as opposed to Traffic Management Plans. The distinction between transport and traffic is an important one, as it requires the contractor to consider all modes, including pedestrians, rather than solely vehicles. There are two other requirements of the TMPs which provide me with assurance that pedestrian connectivity to Doncaster Park and Ride and Watsonia Station will be safely maintained, and they are reproduced below:
The TMP... must include:

- Requirements for maintaining **transport capacity** in the peak periods
- Measures to ensure **connectivity and safety** for all transport network users during construction.

C108. Concern that the proposed location of the Watsonia Park and Ride facility during construction is not feasible and will make access unsafe.

Under the assumed construction methodology, the Watsonia Station car park is proposed to be partially relocated to the high voltage easement to the east of the station. This may increase both in-vehicle and walking journey times for users of the station. The *TTIA* estimates the impact to be up to approximately 8 minutes\(^\text{182}\). Whilst I appreciate that this will be inconvenient for users, I am of the view that access can be safely managed through TMPs. Options include installing temporary traffic signals, additional street lighting, traffic controllers, changing phasing of traffic signals to improve pedestrian priority.

Maintaining safe access is indeed a requirement of EPR T2, which outlines TMPs must include “measures to ensure connectivity and safety for all transport network users during construction.”

R143. Concern that the closure of the Doncaster Road bridge will result in traffic congestion and issues accessing Doncaster bus interchange. Submissions request that the Park and Ride facility at Doncaster should not be relocated to Koonung Creek Reserve. There is concern that both pedestrian delays will be significant, and impacts to parking on the surrounding street network won’t be managed.

In order to widen the Eastern Freeway, the Doncaster Road bridge will need to be lengthened, requiring a partial closure of the bridge for up to 52 weeks. The proposed road closure layout is summarised in Section 10.5.10 of the *TTIA*. The relevant section has been reproduced below:

To allow for the construction activities, the proposed treatment is:

- Reduce traffic lanes over Doncaster Road bridge to two lanes in each direction with one turn lane
- This would reduce the turning capacity from two lanes to one, which would only impact the city-bound turn lane as the outbound turn lane is currently a single lane
- Entry and exit ramps would remain the same as existing.\(^\text{183}\)

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\(^{182}\) (Transport and Traffic Impact Assessment, 2019, p. 480)

\(^{183}\) (Transport and Traffic Impact Assessment, 2019, p. 476)
The Doncaster Park and Ride will also be impacted by construction, with several options for its relocation explored in the TTIA. The most likely temporary location is the Koonung Creek Reserve, in the area bound by Doncaster Road, Eastern Freeway and Gardenia Road.

In order to mitigate potential impacts to bus access, the TTIA suggests that a dedicated bus lane could be installed on Doncaster Road on the approach to the new park and ride, along with installation of temporary signals to the new entrance and the rephasing of the signals at Gardenia Road/Doncaster Road and Greythorn Road. The TTIA also suggests a new intersection could be created on Doncaster Road (east of the Gardenia Road/Greythorn Road intersection) for buses and cars to access the temporary facility.

The TTIA suggests that it is anticipated the Doncaster Road bridge reconstruction and bus priority access to Doncaster Park and Ride could be accommodated concurrently.

5.10.6. Public transport delays during construction

R144. There is concern that on-street public transport will be delayed during construction. Submitters request more information about what priority measures can be applied to support public transport during construction.

I acknowledge that the TTIA could benefit from a more detailed assessment of the direct and indirect impacts of construction on public transport networks. This was indeed flagged within the GTA Peer Review Report.

Given that the TTIA listed impacts of construction on public transport as a ‘high’ risk, it is expected that transport modelling would underpin an assessment of potential impacts. Whilst it would helpful if this assessment were presented within the TTIA, EPR T2 requires that an appropriate level of transport modelling be completed prior to developing TMPs.

Requirements to perform this work within the framework of the EPRs is reasonable given that the construction impact outlined in the TTIA is an estimate based on an assumed construction methodology. This assumed methodology may or may not be adopted by the successful contractor. Given this possible variability, it would be expected that a more granular review of public transport impacts will be prepared at that time with input from the Transport Management Liaison Group (TMLG) as required under EPR T3.

I am satisfied that this would suitably respond to the concern.

5.10.7. Active transport during construction

C109. There is concern that the EES did not provide detail on the holistic impacts to walking and cycling during construction. Specific reference made to impacts in Yallambie.

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184 (Transport and Traffic Impact Assessment, 2019, p. 481)
I refer to my response to C107, and build on the commentary provided within the GTA Peer Review Report.

EES Scoping Requirement 28 requires an assessment of the Project’s positive and negative effects on the existing transport network during construction (including spoil transport) and operation, including in relation to connectivity, accessibility, function, experience and safety for cyclists and pedestrians (including use of existing and new shared use paths, bridges and on-road bike paths).

There are also potential issues around the safety of pedestrians and cyclists both in proximity to construction sites and also on the identified haulage routes. This has been a concern on other major projects.

To outline one potential response, Rail Projects Victoria, along with other stakeholders, is developing the ‘CAPS’ (Construction and Public Safety Project) approach, which applies a Safe Systems approach to different aspects of safety associated with vulnerable road users. Under CAPS, there are four key aspects which seek to address and improve safety. This includes improved guidance for traffic management for cyclists and pedestrians, a tool to assist in haulage route selection (Human Impact Route Assessment, HIRA), safer vehicle specifications, driver training and other behavioural work.

NELA is a member of the CAPS working group and is understood to be incorporating aspects of CAPS into the contracts. The use of these reference guides is encouraged, and their application will be useful in developing a framework which will help manage safety implications associated with pedestrians and cyclists.

It is expected that these guides will be relied upon in the course of preparing the detailed management plans required under EPR T2. However, as referenced in my response to earlier submissions, I am of the view that it would sit outside the IAC terms of reference to prescribe a specific guideline or practice through the EPR.

C110. Concern about the timing of the removal and reconstruction of the following pedestrian and cycling bridges:

- Nell Street, Greensborough
- Estelle Street – Carron Street, Balwyn North

The TTIA provides a table of the long-term closures anticipated for the Project, including pedestrian and cycling bridges\(^\text{185}\). Neither of the bridges listed above are proposed to be closed long-term. However, they may be subject to short term closures to facilitate delivery and

\(^{\text{185}}\) (Transport and Traffic Impact Assessment, 2019, p. 466)
installation of concrete beams or bridge sections\textsuperscript{186}. The TTIA outlines that these closures are proposed to occur overnight or possibly over a long weekend.

Depending on the timing and duration of the implementation of the closures, the number of users impacted would vary. The existing conditions section of the TTIA provides an indication of the number of users during the peak hours. The volumes have been reproduced in Table 5.27.

\textbf{Table 5.27: Potential users impacted during peak hours\textsuperscript{187}}

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site location</th>
<th>AM peak hour</th>
<th>PM peak hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pedestrians</td>
<td>Cyclists</td>
</tr>
<tr>
<td>Nell Street overpass</td>
<td>At overpass</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Koonung Creek trail</td>
<td>Between Estelle Street bridge and Bulleen Road</td>
<td>20</td>
<td>9</td>
</tr>
</tbody>
</table>

The number of users during the peak hours is relatively low. However, the potential detours during the closures is potentially significant given the lack of permeability of the Eastern Freeway and Greensborough Highway.

The impacts of these closures would need to be managed under a TMP, as required by EPR T2. As per my response to C103, where possible, it is recommended that NELP strongly encourage construction methodologies that reduce the extent of closures to provide a strong incentive for contractors to be innovative in their methodology.

The TMLG should be encouraged to pay particular attention to the closures of pedestrian and cycling facilities to reduce the potential burden on the wider road network. It is my view that the EPRs provide sufficient mechanisms to allow this to occur.

\textbf{R145. Request information regarding whether pedestrian access will be maintained through parks and reserves, surrounding construction compounds or across roads.}

I refer to my response to C107, which reaffirms that as per EPR T2, TMPs must include measures to ensure connectivity and safety for all transport network users during construction. In this instance, I would interpret that to mean that where existing access providing pedestrian connectivity is being limited by construction compounds or increased traffic volumes, then suitable connectivity will be implemented and managed through TMPs. In addition, EPR T2

\textsuperscript{186} (Transport and Traffic Impact Assessment, 2019, p. 465)

\textsuperscript{187} (Transport and Traffic Impact Assessment, 2019, pp. 159-160)
requires TMPs to minimise disruptions to pedestrian and bicycle movements during all stages of construction.

It is my view that the EPRs provide an adequate safeguard that this impact can be suitably managed.

5.10.8. Access to Carey Grammar

A portion of Carey Grammar Sports Complex (CGSPC), Bulleen is proposed to be temporarily occupied to facilitate construction of the Project.

Carey are concerned about the potential loss of their bus pick up / drop off zone and the potential impacts to bus travel times during construction.

A review of the EES indicates that the Project will have no direct impact on bus pick-up and drop-off arrangements contained within the CGSPC.

Bus travel times will be suitably considered and managed during preparation of TMP's required under EPR T2.

R146. The construction compound be relocated to lie outside of the current Bulleen Park access road to enable unrestricted access via the three existing gates.

It is unclear whether the nominated road is included or excluded from the proposed construction compound. Given limited opportunities to access CGSPC and the broader Bulleen Park area by vehicle it would be helpful to adjust the proposed fence line to exclude the access road unless it is intended to provide a temporary local access restoration outcome to the immediate south and provide ongoing access to the three gates nominated in the Ratio Consultants technical review through construction.

These gates are reproduced from the Ratio report in Figure 5.27.
R147. The Project boundary be shifted to enable full access to the circulation road within the Carey Sports Complex, east of Dunshea Oval, to ensure existing vehicle circulation arrangements are maintained.

The Project boundary is defined in the EES as “the Project boundary is contained within the EPBC boundary and defines the maximum extent of the construction impacts of the reference Project”.

It is evident from the plans outlining the reference design that at this stage works are proposed around the edge of Dunshea Oval. On this evaluation, the Project boundary must remain in its declared position on the maps provided. This can be seen in the extract from the Ratio technical report reproduced below at Figure 5.28.

Relocating the Project line would potentially involve the delivery of Project works outside the proposed boundary and delivery of an undesirable inconsistency with transparency around where works are required to be delivered in association with the Project.
On ensuring access around the oval during construction, EPR T2 provides an appropriate framework to consider temporary arrangements which either include or remove access around the Oval and within CGSC. The TMLG will be required to ensure satisfactory mobility remains around and within the complex during both construction and under the post implementation phase.

R148. The reference design be amended to include construction of temporary parking in proximity, but outside, the Sport Complex boundary for exclusive use by Carey to offset existing car parking temporarily occupied during construction.

On review of the submission, it indicates that during construction and under the post implementation phase, the CGSC will lose around 27 (existing) car parking spaces in the north-east corner of their site. The submission also sets out usage of car parking in association with the CGSC use which sits within Bulleen Park but outside the CGSC during peak activity times.
On providing car parking in the precinct to cater for demands associated with CGSC I offer the following comments:

1. Existing car parking needs generated by CGSC and the other sporting uses and clubs in the Bulleen Park area must be considered by the Project team during construction and the post implementation phase,

2. Provision of car parking outside of CGSC for the exclusive use of CGSC would be inconsistent with existing practice and is therefore not recommended for adoption,

3. Provisions with EPR T2 will satisfactorily manage issues around car parking during the construction phase of the Project (refer EPR T2 sub-point 8).

4. Replacement car parking required to service any use will be outlined in any Transport Management Plan (TMP) and does not need to be shown on any Project reference design.

R149. Develop an EPR to ensure workers are provided with car parking within the vicinity of the Sports Complex to ensure they do not encroach on Carey’s parking.

This will be suitably managed under EPR T2 sub-point 9.

R150. Construction haulage to be limited to weekdays to not impact on the Sports Complex’s peak period on Saturdays.

Enquiries with the Project team have confirmed that no construction haulage is proposed to occur during weekends unless specifically approved by authorities.

The EES at Chapter 10 (Construction Impacts) of the Traffic and Transport Impact Assessment sets out commentary on the appropriateness of truck haulage occurring during road network peak hours. On this the EES technical report recommends haulage activity unless specifically approved by authorities occur outside these peak periods.

R151. Amend EPR T2 to ensure road closures along Bulleen Road do not impact access to the Sports Complex during construction. They propose the wording:

- Requirements for limiting the amount of construction haulage during the peak periods, including during peak periods of activity for significant land uses such as sporting facilities.
- Requirements for maintaining transport capacity in the peak periods, including weekend peak periods associated with land uses such as sporting grounds. Short term road closures in the vicinity of sporting grounds should be limited to overnight periods.

The submission seeks specificity around requirements within an EPR for sport’s complexes. Whilst sports complexes can generate meaningful levels of traffic activity at times, they typically don’t have features or characteristics which would require them to be specifically nominated within required Environmental Performance Requirements.
EPR T2 and EPR T5 as they have been presently drafted provide a satisfactory safeguard around outcomes sought by submitters. Accordingly, I do not recommend any change to the presently drafted EPR’s.

R152. Provide clarification on whether temporary traffic signals are proposed at the new access on Bulleen Road, to enable Carey to assess the potential impacts. The submission raises concerns for road safety should passenger and heavy vehicles be mixing in an unsignalised environment.

Access control and location for the Carey Sports Complex via Bulleen Road is best determined once a design is finalised and construction methodologies and project delivery timing are settled. EPR T2 provides an appropriate framework for the determination of these features.

Operational impacts
R153. The reference design will result in land proposed to be used for 36 car parking spaces being permanently acquired. Carey request the Project boundary be shifted outside the Sports Complex boundary and the Bulleen Park Drive to enable access to the existing car park. Refer to response to R148.

R154. Amend the reference design at the new intersection of Bulleen Road (near the Sports Complex) to incorporate double right turn lanes on the western leg, and double right turn lanes along Bulleen Road (northern leg).
Origins of this request can be found in the submitters attached technical report prepared by Ratio Consultants. That technical report drawings on an evidence base comprising traffic surveys for uses along the Bulleen Road corridor including the Carey Sports Complex as well as the Veneto Club. These surveys consider weekday and weekend traffic demands.

The project proposes a consolidation of access between the Veneto Club and the Carey Sports Complex consistent with the outcome proposed in the reference design.

The report goes on to perform an analysis of the signalised intersection performance during a Weekday PM and Saturday Midday Peak and develops the estimates shown in the following page at Ratio Figure 4.3.6.

Ratio Figure 4.3.6 indicates some meaningful (land use or minor road) differences between demand levels relied upon to inform the TTIA and those estimated from a sourced evidence base.

A review of assumptions relied upon by the author of the report indicates some adjustments to demand flows from the Veneto Club for a Saturday given that the survey day revealed a low level of car occupancy (25%). This adjustment has a very significant impact on the Saturday demand estimate (assuming 100% car park occupancy), and I am not satisfied that the assumption has been adequately substantiated.
The Ratio report goes on to confirm that the weekday intersection performance for the proposed signalised intersection at Bulleen Road for a consolidated land use outcome comprising the Veneto Club and Carey Sports Complex is satisfactory.

The Ratio Saturday analysis reveals much higher congestion levels and relies on this analysis to substantiate the upgrade of the intersection in accordance with the submission summary provided earlier. The upgrades involve either an additional right-turn-exit or additional right-turn-exit and right-turn-entry.

Given concerns with the assumptions relied upon by Ratio for the Saturday analysis I do not recommend at this stage, adoption of either of the options recommended by Ratio Consultants. I do however consider there to be a sufficient basis to require a localised traffic analysis (consistent with the approach adopted by Ratio) which involves a more robust confirmation of Veneto Club activity levels during a weekend day (around the Carey Sports Complex peak).

R155. There is currently insufficient information on how the Project complies with and responds to the Planning Policy Framework of the Manningham Planning Scheme, particularly in reference to Clause 18 (Transport). Carey recommend extending the shared use path on the east side of the proposed access road to the Sports Complex to encourage access by active transport, to provide greater alignment with the Planning Scheme.

Clause 18 – Manningham Planning Scheme

Clause 18 of the Manningham Planning Scheme states:

*Planning should ensure an integrated and sustainable transport system that provides access to

Figure 4.3.6: Comparison of traffic volumes

<table>
<thead>
<tr>
<th>Period</th>
<th>Peak traffic accessing CGSC, Bulleen Park, The Veneto Club</th>
<th>Ratio Modelling</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday AM Peak</td>
<td>10 movements</td>
<td>Not modelled as this does not represent the peak period of activity of CGSC, Bulleen Park and The Veneto Club</td>
<td>n/a</td>
</tr>
<tr>
<td>Weekday PM Peak</td>
<td>160 movements</td>
<td>761 movements</td>
<td>601 movements</td>
</tr>
<tr>
<td>Saturday Peak</td>
<td>Not modelled</td>
<td>1,390 movements</td>
<td>n/a</td>
</tr>
</tbody>
</table>
social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable movements of people and goods, and is safe.”

Clause 18 as directed provides a relevant backdrop to the development of transport systems within the City of Manningham. The Project before the IAC transcends the City of Manningham and affects at least six local government areas. The Project is of state significance and has involved a comprehensive planning process to ensure the project meets relevant strategic planning requirements including a specific range of objectives which ultimately link back with the overarching concept of delivering an integrated and sustainable transport system.

On the various steps involved in arriving at the present stage of project consideration, I refer to the Project Process Diagram reproduced earlier at Figure 2.6. Based on these observations, I am satisfied that the project has sufficient regard to the requirements and tenets set out under the Clause 18 objective.

**Shared Path Link**

On the shared path connection, I provide an extract of the relevance project map showing active travel connectivity. If I understand correctly, the request involves extending the pink SUP on the east side of the link road, adjacent to the ventilation stack, southward towards the CBGSC.

A review of the proposed plan indicates connectivity and provision of at least one SUP for the extent of the proposed Project works. No exiting SUP’s exist in this area indicating that the
proposal as shown in the reference design is an enhancement over existing conditions. The final test which would involve consideration of extending the nominated SUP involves whether the extension will fill any strategic gap (as per the tests set out earlier in Section 5.9). On this, the proposed extension does not fill this gap.

Based on these observations, the requested (eastern) SUP is not recommended to the IAC for inclusion.

5.10.9. Access to Marcellin College

A portion of Marcellin College (Marcellin) is proposed to be temporarily occupied to facilitate construction of the Project. This will restrict access from Bulleen Road, which is one of Marcellin’s two access points. Marcellin made a submission which provided general support for the Project; however, they do not support temporary or permanent occupation of their campus. The submission is summarised and responded to below.

Recommendations & Requests

R156. Marcellin request the proposed construction compound not be located on their campus.

I would expect that all proposed compounds including their need and footprint would be reviewed more comprehensively upon completion of a detailed project design noting that it needs to be recognised that Marcellin fronts a complex part of the project, where it should be reasonably expected that some land would need to be temporarily occupied to construct the Bulleen Road interchange.

I defer to the technical expert by the proponent about layout / configuration / constructability to answer any further questions.

R157. Marcellin advised that school buses currently utilise the primary access point at Bulleen Road. There are approximately 24 bus movements per day, transporting approximately 75% of students. Marcellin outline that Sandra Street (the secondary access point) is not suitable for bus movements. Therefore, they request that access via Bulleen Road remains unrestricted during construction works to limit impacts on students. Marcellin also request that temporary traffic lights be installed at the primary access point.

Investigations indicate that Marcellin has a student population of approximately 1,400 students. To appreciate the potential impact of limiting access via Marcellin’s primary access point, I have estimated the likely vehicle trips required to be rerouted to the secondary access point. The estimates are high level and are only intended to provide an indication of the potential impact.
### Table 5.28: Estimate number of peak and daily trips to Marcellin

<table>
<thead>
<tr>
<th>Type of trip</th>
<th>Assumptions</th>
<th>No. trips in peak</th>
<th>Daily trips</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bus trips</strong></td>
<td>75% of students is approx. 1,050 students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Capacity of coach approx. 55 students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19 buses required</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two trips per peak (pick up and drop off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Students by car</strong></td>
<td>25% of students is approx. 350 students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2 students per car</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two trips per peak (pick up and drop off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teachers and ground staff</strong></td>
<td>Approx. 100 staff members</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assume park on site or in the vicinity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One trip per peak</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimated Total</strong></td>
<td></td>
<td>430vph</td>
<td>860vpd</td>
</tr>
</tbody>
</table>

Based on estimates set out in Table 5.28, there may be approximately 430 vehicles diverted to the secondary access point in the event that access to Bulleen Road is not maintained through construction.

In the event that secondary access via Sandra Street was solely relied upon, access would then need to occur via Thompsons Road, or Barak Street off Thompsons Road or other (less probable) local streets north of the school via Golden Way.

Ultimately, increased travel distances would be imposed as well as the need to pass through additional sets of traffic signals.

Despite these additional travel distances, road geometry along Sandra Street limits the potential of these streets links to support meaningful increases in transport demand. Sandra Street is a residential road with a width of approximately 7 – 7.4m. For most of its length (beyond the school frontage) it supports parking on both sides of the road, which when occupied, would limit street activity to a single direction. In the vicinity of the school gate, no stopping restrictions are in place to support existing pick up and drop off activity.
As a result, and whilst an increase of approximately 860 vehicles per day may be acceptable on some local residential streets if they were spread across the day, the transport peakiness of the school use is likely to generate a range of operational issues. By way of extension, bus access via these same local streets is likely to be problematic.

Based on this research, I would support retention of some form of access for regular passenger cars and buses via Bullen Road. On this, consideration could be given to converting the southern egress only internal road into a two-way access point, and Marcellin may be required to be flexible in recognising that there may be instances where access outside of regular school hours may be limited to facilitate key construction activities.

R158. Marcellin request that Bullen Road not be diverted onto the Temporary Occupation Area.

I do not have sufficient background on the likely usage of the construction compound to be able to comment on whether or not the road can feasibly be diverted. I seek direction from the proponent’s technical expert on any information available on this issue.

R159. Marcellin are proposing major redevelopment works in the next 18 months and require heavy vehicle access via Bulleen Road. Similar to buses, they outline that Sandra Street is not suitable for heavy vehicle access.

Further to my response at R157, I appreciate that Sandra Street would not be suitable for heavy vehicle access and support the maintenance of an access to Marcellin via Bulleen Road.

Given there is likely overlap between the requirements of the Project and Marcellin’s works, I expect that Marcellin’s major redevelopment works would have conditional consent requiring the preparation of a TMP. Marcellin’s TMP would need to consider and align with the TMP arrangements in place for the Project at the time.

R160. Marcellin request certainty around the timing of works adjacent to their campus including:

- Commencement dates
- Estimated duration of works
- Completion dates

Refer to response to R120, where I recommended the IAC consider amending EPR T3 to read:

The TMLG must include representatives from the State, VicRoads, emergency services, the Project, relevant transportation authorities and relevant local councils. Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, consideration should be given, by the TMLG, to inviting representatives from stakeholder or community groups to relevant meetings.

This would allow Marcellin to be invited to relevant meetings where the TMLG propose to discuss matters that impact Marcellin’s campus to provide visibility and input on planned changes.
6. ENVIRONMENTAL PERFORMANCE REQUIREMENTS

In addition to the issues and recommendations summary set out at Section 1.9 of this report, I have further reviewed the environmental performance requirements relevant to my area of expertise, being, in light of the public submissions, and recommend the following change:

On draft EPR T3 the following is proposed with modifications / additions shown in bold highlight:

“A Transport Management Liaison Group (TMLG) must be established and convene 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, emergency services, the Project, relevant transportation authorities and relevant local councils.

The TMLG will be a forum for exchange of information and discussion of issues associated with Transport Management Plans. This must include review of proposed haulage routes for construction sites south of the northern tunnel portal to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes.

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

The TMLG must meet at least monthly until the completion of construction.

The TMLG must include representatives from the State, VicRoads, emergency services, the Project, relevant transportation authorities and relevant local councils. Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, consideration should be given, by the TMLG, to inviting representatives from stakeholder or community groups to relevant meetings.”

On draft EPR T1 which states:

Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils 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, bicycle connectivity, and shared use paths
• Work with relevant public transport authorities 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 North East Link

The current wording of the EPR only requires interchanges and intersections to be designed to meet relevant road and transport authority requirements. It is considered appropriate to consider revisions to the EPR to broaden the requirement of the Project works to meet relevant road and transport authority requirements beyond interchanges and intersection design.

On this change, it would be appropriate to broaden the application of the third bullet point of EPR T1 to read:

• Design the Project to meet relevant road and transport authority requirements

Subject to these changes, it is my view that the environmental performance requirements are appropriate and will ensure that the environmental effects of the Project relevant to my area of expertise will be acceptably managed.
ANNEXURE A: QUALIFICATIONS AND EXPERIENCE
Matters Raised by PPV Guide to Expert Evidence

a) The name and address of the expert
John Kiriakidis
Level 25, 55 Collins Street, Melbourne

b) The expert's qualifications, experience and area of expertise
Traffic and Transport Planning Engineer

c) Details of any other significant contributors to this statement (if any) and their expertise
As per Table 1.2 in Section 1.4.

d) All instructions that define the scope of this statement (original and supplementary and whether in writing or verbal)
Instructed by Clayton Utz Lawyers (in writing and orally).

e) Details and qualifications of any person who carried out any tests or experiments upon which the expert relied in preparing this statement
None completed.

f) Any questions falling outside the expert’s expertise
Refer to body of report.

g) Key assumptions made in preparing the Peer Review Report
As per Section 1.7.4.

h) Any departures from the findings or opinions expressed in the Peer Review Report and, if so, why
As per Section 1.5, further work completed in preparing this expert evidence statement has not caused me to materially change my opinions as expressed in the GTA Peer Review Report.

i) Whether the Peer Review Report is incomplete or inaccurate in any respect
The GTA Peer Review Report is complete and accurate to the best of my knowledge.

j) Details of any changed circumstances or assumptions since the Peer Review Report was prepared and whether these affect the opinions expressed in the Peer Review Report
Refer to memorandums provided by project technical team at Section 4.2.
JOHN KIRIAKIDIS
Director
BE, (Hons), Civil & Comp,
Monash University

MY STORY
I have served as a consultant in the field of traffic and transport planning since 1994 for a broad cross-section of clients across the Australasian private and public business sector. My specialty lies in the field of land use planning and design where I have had considerable involvement in guiding land use developments across Greater Melbourne, including greenfields and a range of urban renewal areas where predictive modelling was required to substantiate and develop comprehensive transport solutions.

I have considerable experience in managing a large team of traffic and transport specialists while servicing a significant client base to deliver land use and associated transport infrastructure. I bring a broad cross-section of experience across a range of transport specialties including design, active travel, analytics and a breadth of modelling tools.

I have a thorough understanding of federal, state and local transport planning policies and am regularly involved in evaluating complex land use and transport infrastructure planning projects. I have been called on regularly to appear at the Victorian Civil and Administrative Tribunal (VCAT) and Panels Victoria as an independent expert witness in the field of traffic and transport planning.

SELECTED PROJECT EXPERIENCE

Transport Planning
- Aitken Boulevard (E14), Northern Corridor
- Gunns Gully Road Interchange, Kalkallo
- Donnybrook Road, Kalkallo
- Doncaster Hill Integrated Transport Plan

Land Use Planning
- Arden Macaulay (C190)
- City North (C196)
- MCOR Papermill Re-development
- Merrifield West (Kalkallo)
- Merrifield City Centre (Kalkallo)
- Cloverton (Lockerbie Estate)
- Melbourne Airport
- Essendon Airport
- Epping North East Structure Plan (450ha)

Transport Impact
- Westfield Doncaster
- Westfield Knox
- Westfield Southland
- Tooronga Village Re-development, Glen Iris
- Logis Business Park, Dandenong
- Alliance Business Park, Epping
- Eureka Tower
- Freshwater Place

Traffic Engineering
- Merrifield Industrial Sub-Division
- Craigieburn Train Maintenance Facility
- Goodyear Redevelopment, Thomastown

SKILLS & EXPERTISE
- Transport strategy development, focused on increasing accessibility and transport choice, and reducing car dependency and social isolation.
- Management of (and participation in) multidisciplinary teams that require project management skills based on a sound understanding of integrated solutions.
- Transport project management, including scoping, program development, governance, stakeholder engagement, consultation, cost management and reporting.
- Communication, reporting, workshop facilitation and technical writing, including public documents, verbal and written briefings and presentations.
- Development of pragmatic, transport policies and plans to support integrated, multimodal transport solutions that integrate with land use planning and urban design objectives to create great city spaces.

MEMBERSHIPS AND AFFILIATIONS
Institute of Engineers Australia (Civil College)
Victorian Planning & Environmental Law Association (VPELA)
Australian Institute of Traffic Planning & Management (AITPM)
ANNEXURE C: REVIEW OF ACTIVE TRANSPORT PROPOSALS
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Figure C.1: Complementary active travel projects – segment A

Data Sources: North East Link Authority
## ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

### Table C.1: Segment A - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Bicycle infrastructure</td>
<td>Provide bicycle cages at Diamond Creek, Wattle Glen and Hurstbridge railway stations.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Shared path</td>
<td>Extend the Diamond Creek Trail between Diamond Creek and Hurstbridge.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Pedestrian safety improvements</td>
<td>Provide pedestrian safety improvements Aqueduct Road, Diamond Creek.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Pedestrian safety improvements</td>
<td>Installation of signals across Diamond Creek Road at the Pipe Track.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>Bike path</td>
<td>Install on-road bicycle lanes between Civic Drive, Greensborough and existing lanes on Heidelberg – Kinglake Road in Diamond Creek.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓[1]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>Bike path</td>
<td>Rectify gaps in the off-road bicycle network including expanding the cycling network to connect with Diamond Creek and Eltham Activity Centres along</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The proposed upgrades extend beyond what is reasonable for the project. However, if Diamond Creek Road is duplicated or upgraded as a direct component of the project (or through an alternate complementary project upgrade), provision should be made for bicycle lanes and/or shared paths in the upgraded section, linking into the existing Greensborough Bypass path. Note that bicycles can travel in bus lane for a section southbound on this link.
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Figure C.2: Complementary active travel projects – segment B

North East Link Segment B
- Active travel complementary projects
- Active travel complementary projects
- North East Link
- Major Activity Centres
## ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

### Table C.2: Segment B - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Shared path</td>
<td>Deliver the trail Aqueduct Trail between Greensborough and Yarra Glen, generally along the Maroondah Aqueduct.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Shared path</td>
<td>Connect the Western Ring Road Path to Plenty Road Path.</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>B3 / B8</td>
<td>Underpass</td>
<td>Grade separate Elder Street and provide an underpass to the west side of Greensborough Road and along NEL corridor</td>
<td>29, 808</td>
<td>Peter Carter, Member of CTDG and Boroondara &amp; Blackburn Village Residents Group</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>B4</td>
<td>Shared crossing</td>
<td>Split Greensborough Road further north to allow pedestrian/cyclist crossing via one set of crossings</td>
<td>716</td>
<td>Banyule City Council</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
### ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>B5</td>
<td>Shared path</td>
<td>Provide direct covered pedestrian/cyclist access between the multi-deck car park and Watsonia Station.</td>
<td>716</td>
<td>Banyule City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6</td>
<td>Shared path</td>
<td>Provide direct shared user path across NEL and railway to provide access to Watsonia shopping strip.</td>
<td>716</td>
<td>Banyule City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7</td>
<td>Shared path</td>
<td>Provide a transport corridor over Watsonia rail tracks by extending Elder Street.</td>
<td>716, 29</td>
<td>Banyule City Council &amp; Peter Carter</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure C.3: Complementary active travel projects – segment C
# ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

## Table C.3: Segment C - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Shared path</td>
<td>Deliver Eltham to Montmorency Trail along the rail corridor.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>C2</td>
<td>Shared path</td>
<td>Deliver Diamond Creek Trail between Alastair Knox Park and Edendale Farm</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>C3</td>
<td>Pedestrian improvements</td>
<td>Provide pedestrian safety improvements on Bible Street, Eltham</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Pedestrian improvements</td>
<td>Upgrade pedestrian access at Falkiner Street.</td>
<td>691</td>
<td>Nillumbik Shire Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Figure C.4: Complementary active travel projects – segment D
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Table C.4: Segment D - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Underpass</td>
<td>Provide alternative design for a lowered SUP within the NEL trench, passing under Blamey Road and Yallambie Road</td>
<td>29, 808</td>
<td>Peter Carter &amp; Blackburn Village Residents Group</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>Underpass</td>
<td>Provide an underpass or SUP in the shoulder trench at Drysdale Street</td>
<td>29, 808</td>
<td>Peter Carter &amp; Blackburn Village Residents Group</td>
<td>✓[2]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Currently, pedestrians cross a minor side road at Drysdale Street. The reference design proposes an intensified crossing environment (i.e. across the access to Lower Plenty Road, which is much larger and has multiple crossings). The proposal is for the SUP to be either lowered into the NEL trench alongside the roadway to form an underpass (which would return to surface level at a later point), or to provide a separate underpass elsewhere to mitigate the need for the surface crossing. While it is not the role of this evidence to provide a recommendation on the preferred design solution, the improved connectivity sought by this proposal warrants further consideration for inclusion in the project.

**Criteria met:** Directly affected by Project, managing the effects of the Project
Figure C.5: Complementary active travel projects – segment E

North East Link Segment E
- Active travel complementary projects
- Active travel complementary projects
- Latrobe NEIC
- Major Activity Centres

Data Sources: North East Link Authority
## ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

### Table C.5: Segment E - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Pedestrian bridge</td>
<td>Additional location for a pedestrian bridge connection across the Yarra River into Birrarung Park[^188]</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E2</td>
<td>Shared path</td>
<td>Complete the trail network along the south side of the Yarra River[^188]</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E3</td>
<td>Shared path</td>
<td>Provide safe walking and cycling opportunities along Templestowe Road[^188]</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E4</td>
<td>Shared path</td>
<td>Reduce grades on Rivergum Walk[^188]</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E5</td>
<td>Shared path</td>
<td>Proposed an alignment that utilises existing paths and some additional length through Banksia Park Underpass</td>
<td>29, 808</td>
<td>Peter Carter, Blackburn Village Residents Group</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

[^188]: Extracted from the Yarra River Corridor Concept Plan (YRCCP). Manningham City Council (submission 316) sought inclusion of active transport projects in the YRCCP.
<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6</td>
<td>Pedestrian bridge</td>
<td>of Manningham Road and overpass into Banksia Park.</td>
<td>683</td>
<td>Maudie Palmer and Eugene Howard</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E7</td>
<td>Pedestrian bridge</td>
<td>New pedestrian bridge crossing the Yarra River linking the Birrarung Cultural Centre Precinct to the west of the Yarra River and surrounding parks.</td>
<td>316</td>
<td>Manningham City Council</td>
<td>✓[3]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E8</td>
<td>Shared path</td>
<td>A safe, direct and unimpeded connection to the Main Yarra Trail across Banksia Street to ensure viable commuter route and recreational route from Greensborough to the CBD</td>
<td>716, 808</td>
<td>Banyule City Council, Blackburn Village Residents Group</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

V153791 // 15/07/19
Expert Evidence Statement // Issue: Final North East Link (NEL), Traffic and Transport Review
<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>E9</td>
<td>Pedestrian bridge</td>
<td>New pedestrian bridge crossing the Yarra River linking the Birrarung Cultural Centre Precinct to the Main Yarra Trail</td>
<td>683</td>
<td>Maudie Palmer and Eugene Howard</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E10</td>
<td>Shared path</td>
<td>Walking and cycling infrastructure in accordance with the Yarra River Corridor Concept Plan</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E11</td>
<td>Pedestrian bridge</td>
<td>New pedestrian bridge crossing the Yarra River linking the Birrarung Cultural Centre Precinct to the south of Manningham Road.</td>
<td>683</td>
<td>Maudie Palmer and Eugene Howard</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E12</td>
<td>Pedestrian bridge</td>
<td>New pedestrian bridge crossing the Yarra River linking the Birrarung Cultural Centre Precinct to the east of Bulleen Road.</td>
<td>683</td>
<td>Maudie Palmer and Eugene Howard</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E13</td>
<td>Shared path</td>
<td>Provision of shared paths on Templestowe Road.</td>
<td>316</td>
<td>Manningham City Council</td>
<td>[4]</td>
<td></td>
<td></td>
</tr>
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V153791 // 15/07/19
Expert Evidence Statement // Issue: Final
North East Link (NEL), Traffic and Transport Review
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<th>Warranted but outside scope of project</th>
<th>Other</th>
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<tbody>
<tr>
<td>E14</td>
<td>Walking trail</td>
<td>New walking trail linking the Birrarung Cultural Centre Precinct to the river and surrounding parks.</td>
<td>683</td>
<td>Maudie Palmer and Eugene Howard</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E15</td>
<td>Shared path</td>
<td>Propose extension of bicycle lanes along NEL corridor between Manningham Road and Bulleen Road</td>
<td>29</td>
<td>Peter Carter</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

[3] The proposed shared bridge at Yarra Street is out of the scope of the project based on location, but an upgrade to the existing road bridge crossing on Manningham Road and a connection to the existing trail from the proposed shared path on Manningham Road warrants consideration to achieve a similar level of connectivity as sought by this submission. This would link the project into the SCC through to the existing PBN and would provide access to the La Trobe NEIC.

**Criteria met:** Integrating the Project with the surrounding network

[4] The proposal seeks provision of shared paths on Templestowe Road. While paths along the length of the road are beyond the remit of the project, there is a small section of Templestowe Road (between Bridge Street and the Banksia Park access) which falls within the project bounds. This stretch connects to a SCC on Templestowe Road and broader access to Banksia Park beyond and as such, consideration should be given to extending the Project’s shared paths to connect along this part of Templestowe Road – refer Figure C.7.

**Criteria met:** Integrating the Project with the surrounding network
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Figure C.6: Proposed connectivity across Yarra River (added in red)

Figure C.7: Proposed connectivity between Bridge Street and Banksia Park Access (added in red)
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Figure C.8: Complementary active travel projects – segment F
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Table C.6: Segment F - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
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<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Bike path</td>
<td>Extend Bulleen Road bike lanes through intersection to Manningham Road, ensure existing bike lines are not deleted</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>F2</td>
<td>Shared path</td>
<td>Complete Koonung Trail through Bullen Park(^{188})</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td>Shared path</td>
<td>Activate riverside access by completing trails network(^{188})</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>F4</td>
<td>Shared path</td>
<td>Proposed Bulleen Park reconfiguration(^{188})</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>F5</td>
<td>Pedestrian bridge</td>
<td>New pedestrian bridge crossing the Yarra River linking the Birrarung Cultural Centre Precinct design</td>
<td>683</td>
<td>Maudie Palmer and Eugene Howard</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>F6</td>
<td>Pedestrian bridge</td>
<td>Additional location for a pedestrian bridge connection across the Yarra River(^{188})</td>
<td>316</td>
<td>Manningham City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
## ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>F7</td>
<td>Pedestrian bridge</td>
<td>Provide new bridge over Yarra River to connect Ivanhoe areas into Bulleen Park</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>F8</td>
<td>Shared path</td>
<td>Link the Koonung Trail to the Main Yarra Trail[^8]</td>
<td>316</td>
<td>Manningham City Council</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F9 / F12</td>
<td>Underpass</td>
<td>Propose underpass of Bulleen Road and on-ramps with SUP bridge on west side (not east) Also propose SUP on Bulleen Road north of Eastern Freeway on the west side instead of east and Thompsons Road.</td>
<td>29, 808, 316</td>
<td>Peter Carter, Blackburn Village Residents Group, Manningham City Council</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F10</td>
<td>Bike facilities</td>
<td>Provide high quality and suitably located bike parking at the Bulleen Park and Ride facility</td>
<td>716</td>
<td>Boroondara City Council</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F11</td>
<td>Shared path</td>
<td>Provide good quality walking and cycling access to the Bulleen Park and Ride facility from all directions</td>
<td>716</td>
<td>Boroondara City Council</td>
<td>✔️[^5]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[^8]: Link the Koonung Trail to the Main Yarra Trail.

[^5]: [5]
<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>F13</td>
<td>Bike path</td>
<td>NEL/Eastern Freeway Interchange: bike ramp connections between northern re-aligned Koonung Trail and the proposed Shared Path Bridge on the west side of Bullen Road (ref 61)</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F14</td>
<td>Pedestrian bridge</td>
<td>New Shared Path Bridge: Over Eastern Freeway on Bulleen Road - West Side</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F15</td>
<td>Shared path</td>
<td>Freeway Golf Course Access Road - Koonung Creek Trail crossing, dangerous crossing requires improvement</td>
<td>338</td>
<td>Boroondara Bicycle Users Group (BUG)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F16</td>
<td>Shared path</td>
<td>Improve sight lines on Koonung Creek Trail - south side and reverse priority at Freeway golf links access Road</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F17</td>
<td>Underpass upgrade</td>
<td>Improve gradients and widths, Koonung Creek Trail; Burke Rd Underpass to Bulleen Road</td>
<td>338</td>
<td>Boroondara BUG</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GTA Ref.</td>
<td>Project description</td>
<td>Additional details</td>
<td>Sub #</td>
<td>Key stakeholder</td>
<td>Warrants consideration by the IAC</td>
<td>Warranted but outside scope of project</td>
<td>Other</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
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<td>-----------------------------------</td>
<td>----------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>F18</td>
<td>Shared path</td>
<td>A grade separated SUP on the north between Burke Road and Yarraleen Trail (near Estelle Street bridge crossing).</td>
<td>29, 808</td>
<td>Peter Carter, Blackburn Village Residents Group</td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td>F19</td>
<td>Underpass upgrade</td>
<td>Burke Road underpass has poor lighting and path surface, requires upgrades.</td>
<td>338</td>
<td>Boroondara BUG</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F20</td>
<td>Shared path</td>
<td>Koonung Creek trail to Hays Paddock link path, supported by Boroondara Council strategies</td>
<td>338</td>
<td>Boroondara BUG</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[5] Investigation of a more direct and low-stress route from the intersection of Bulleen Road and Thompsons Road to the Bulleen Park and Ride should be explored to provide improved access from residential catchments. This is especially relevant to catchments in the south and north, where routes proposed in the reference design are very circuitous and requires a walk of several hundred metres along Thompsons Road to access the Park and Ride. It is noted that there is a grade difference at this location which would need to be overcome.

**Criteria met:** Directly affected by Project, integrating the project with the surrounding network, connecting to Park & Ride
Figure C.9: Proposed connectivity between Bulleen Road/Thompsons Road intersection and Bulleen Park & Ride (added in red)
Figure C.10: Complementary active travel projects – segment G
### Table C.7: Segment G - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
<th>Key stakeholder</th>
<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Bike path</td>
<td>North East Bicycle Corridor access from Chandler Highway north bound bike lanes</td>
<td>338</td>
<td>Boroondara BUG</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>Shared path</td>
<td>Upgrade existing crossing of Eastern Freeway at Anniversary Trail – proposes a bridge or underpass</td>
<td>29, 808</td>
<td>Peter Carter, Blackburn Village Residents Group</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td>Shared path upgrades</td>
<td>Yarra Trail, between Chandler Highway to Kilby Rd underpass requires lighting and flood mitigation measures.</td>
<td>338</td>
<td>Boroondara BUG</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td>Shared path</td>
<td>Address flooding issues on path near Willsmere Park</td>
<td>808</td>
<td>Blackburn Village Residents Group</td>
<td>✓[6]</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>G5</td>
<td>Underpass upgrade</td>
<td>Kilby Road underpass poorly lit and would benefit from improved lighting and path treatment</td>
<td>338</td>
<td>Boroondara BUG</td>
<td>✓[7]</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
The reference design shows the existing path is proposed to be modified in this section (adjacent to Willsmere Park), as such, it would be reasonable to consider addressing flooding issues during the upgrade where changes or modifications are being made as part of the project.

**Criteria met:** Directly affected by Project

Given widening of the freeway is expected to extend (modify) this tunnel, it would be reasonable for the modified tunnel to meet the relevant lighting standards along its length.

**Criteria met:** Directly affected by Project, managing the effects of the Project

The submission notes that Sheets 28-42 of the NEL Map Book shows the shared path crossing Kilby Road incorrectly named as the ‘Anniversary/Outer Circle Trail’. I am happy for this to be corrected in later design iterations.
Figure C.11: Complementary active travel projects – segment H
## ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

### Table C.8: Segment H - expert witness determination

<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
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<th>Sub #</th>
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<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Bike path</td>
<td>Bicycle upgrades on Wellington Street (north of Johnson Street)</td>
<td>386</td>
<td>City of Yarra</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Bike path</td>
<td>Bicycle upgrades along South Terrace</td>
<td>386</td>
<td>City of Yarra</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3</td>
<td>Bike path</td>
<td>Bicycle upgrades along Roseneath Street</td>
<td>386</td>
<td>City of Yarra</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4</td>
<td>Shared path</td>
<td>Upgrade Merri Creek Trail bridge and upgrade Trenerry Crescent SUP</td>
<td>29, 808, 386</td>
<td>Peter Carter, Blackburn Village Residents Group, City of Yarra</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H5</td>
<td>Bike path</td>
<td>Bicycle upgrades along Gipps Street</td>
<td>386</td>
<td>City of Yarra</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H6</td>
<td>Pedestrian and cyclist facilities</td>
<td>Better opportunities for pedestrians and cyclists to cross major roads connecting with the NEL Project area such as the Eastern Freeway, Alexandra Parade and Hoddle Street.</td>
<td>386</td>
<td>City of Yarra</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

Figure C.12: Complementary active travel projects – segment I

North East Link Segment I
- Active travel complementary projects
- Active travel complementary projects
- Major Activity Centres

Data Sources: North East Link Authority

0 0.5 1 km
## ANNEXURE C REVIEW OF ACTIVE TRANSPORT PROPOSALS

**Table C.9: Segment I - expert witness determination**

<table>
<thead>
<tr>
<th>GTA Ref.</th>
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<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>I1</td>
<td>Bike facilities</td>
<td>Provide bike parking facilities at Doncaster and Bulleen Park and Ride</td>
<td>808</td>
<td>Blackburn village RG</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>I2</td>
<td>Bike facilities</td>
<td>Install bike maintenance stations along path, particularly in Elgar Park</td>
<td>716</td>
<td>Whitehorse City Council (CC)</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>I3</td>
<td>Shared path</td>
<td>Requesting a shared footbridge over Eastern Freeway at Tram Road / Station Street</td>
<td>29, 716, 808</td>
<td>Peter Carter, Whitehorse City Council &amp; Blackburn Village Residents Group</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>I4</td>
<td>Underpass upgrades</td>
<td>Improve visibility and safety through creative lighting and line marking in all underpasses on Koonung Creek Trail</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓️[6]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I5</td>
<td>Bike Path</td>
<td>Strategic Cycling Corridor from Koonung Creek Trail to Box Hill and Doncaster</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Where underpasses are added or modified (i.e. extended due to freeway widening), they should meet the relevant standards and considerations.

**Criteria met:** Directly affected by Project, managing the effects of the Project
Figure C.13: Complementary active travel projects – segment J
<table>
<thead>
<tr>
<th>GTA Ref.</th>
<th>Project description</th>
<th>Additional details</th>
<th>Sub #</th>
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<th>Warrants consideration by the IAC</th>
<th>Warranted but outside scope of project</th>
<th>Other</th>
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<tbody>
<tr>
<td>J1</td>
<td>Shared path</td>
<td>Grade separation of the path to the south of the Eastern Freeway</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>Bike path</td>
<td>Provide funding to Council to assist construction of Whitehorse Easy Ride Routes</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J3</td>
<td>Shared path</td>
<td>Improve wayfinding along entire Koonung Creek Trail</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓[10]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J4</td>
<td>Underpass</td>
<td>Construct underpasses along Koonung Creek Trail from Middleborough Road to Park Road</td>
<td>29</td>
<td>Peter Carter</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J5</td>
<td>Shared path</td>
<td>Improve connectivity of the Koonung Creek Trail on the east side of Middleborough Road</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J6</td>
<td>Bike Path</td>
<td>Concerns that neither Blackburn Road or Middleborough Road bridges across the Eastern Freeway provide adequate facilities for cyclists.</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GTA Ref.</td>
<td>Project description</td>
<td>Additional details</td>
<td>Sub #</td>
<td>Key stakeholder</td>
<td>Warrants consideration by the IAC</td>
<td>Warranted but outside scope of project</td>
<td>Other</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
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<td>------</td>
<td>-----------------</td>
<td>-----------------------------------</td>
<td>---------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>J6</td>
<td>Shared path</td>
<td>Grade separation of the path to the south of the Eastern Freeway</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J7</td>
<td>Shared path</td>
<td>Install further lighting, toilets, drinking fountains, seating and shelter along entire path</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J8</td>
<td>Shared Path</td>
<td>Seal sections of path that are currently gravel</td>
<td>716</td>
<td>Whitehorse City Council</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[10] Where infrastructure is added or modified, wayfinding should be updated along the Koonung Creek Trail (for example, to direct to new bridge links or replace wayfinding lost in construction).

Criteria met: Directly affected by Project, managing the effects of the Project
The GTA peer review of the Traffic and Transport Impact Assessment (TTIA) for the North East Link Environment Effects Statement (EES) listed three recommendations for additional information to be presented. This memo provides responses to each of those items. There were three recommendations, these related to:

- Watsonia Road sensitivity test;
- Avon Street left in/left out; and
- Bulleen Park and Ride details.

**Watsonia Road sensitivity test**

**Background**

The TTIA undertaken for the EES found that the project would increase daily traffic volumes on Watsonia Road by approximately 4,000 vehicles per day by 2036. The two key factors driving this increase are:

- the nearby interchange at Grimshaw Street, which provides direct access to / from North East Link; and
- a reduction in sign-posted speeds along Greensborough Bypass to 60 km/hr, which increases the relative attractiveness of Watsonia Road as a through route to / from Grimshaw Street.

Watsonia Road provides direct access to the precinct’s local shopping hub, community centre and railway station. It has relatively high pedestrian and cycling volumes, low sign-posted speeds and extensive on-street parking.

The peer review of the TTIA (which is Appendix A to the TTIA) noted that the strategic model may not be granular enough to consider all of these elements in its route choice. In this regard the peer reviewer recommended that:

* A sensitivity test for Watsonia Road be considered which reflects the attractiveness of this route between its intersection with Grimshaw Street and Greensborough Road.

**Model validation and methodology**

Speed and capacity coding in the VLC strategic model is initially based on traffic engineering guidelines, which provide ‘default’ values for different road types including freeways, arterials and local roads. However, these default values are typically further refined to match observed local conditions during model validation.

The North East Link Project team provided a series of traffic survey results conducted across the north-east of Melbourne which were used to improve the strategic model validation. This included surveys conducted along Watsonia Road.
A sound validation does not, however, completely eliminate forecasting uncertainty. For example, strategic models do not account for delays at signalised intersections and may therefore overestimate through traffic in cases such as Watsonia Road.

The TTIA acknowledges this uncertainty by not solely relying on strategic modelling results. All traffic volumes presented in the TTIA have undergone an additional spreadsheet modelling process, as outlined in Section 4.5 of the TTIA. This process rebases modelled forecasts to observed traffic surveys, which accounts for any variation in base year traffic validation. This process has been applied to traffic volumes on Watsonia Road, as well as all other locations presented in the TTIA.

**Sensitivity testing – strategic modelling**

In response to the peer reviewer’s comments, additional modelling was undertaken to test the impact of changing traffic signal phasing at the intersections of Watsonia Road / Grimshaw Street and Watsonia Road / Greensborough Bypass. These tests assumed that the signal phasing would be adjusted to discourage through traffic on Watsonia Road.

Several scenarios - imposing low to high impedances to through traffic on Watsonia Road - were undertaken to develop a range of potential traffic impacts. The resultant modelled impacts on daily traffic volumes are presented in Table 1.

The results indicated that traffic on Watsonia Road is sensitive to the access and signal arrangements at Greensborough Bypass and Grimshaw Street. Traffic volumes were predicted to reduce by up to 40% in the most extreme scenario modelled. Under this scenario, approximately all through traffic on Watsonia Road was diverted, which is considered unrealistic. It is intuitive however that traffic flow is sensitive to signal phasing arrangements, as these intersections directly determine the quantity of traffic that can access Watsonia Road. The sensitivity modelling undertaken supports this construction and demonstrates that there are means by which traffic impacts on Watsonia Road can be managed.

The traffic model predicted that through traffic along Watsonia Road would primarily divert to Greensborough Bypass, as shown by the dotted and solid lines respectively in Figure 1. Beyond this area, traffic was generally predicted to resume its original route. This is reflected in the results shown in Table 1, which indicated that volumes would increase on Greensborough Bypass north of Watsonia Road (by up to 10%) but not change significantly elsewhere.

Although impacts on local roads are not explicitly accounted for within the strategic model, it is likely that any diversion of through traffic away from Watsonia Road could also reduce through traffic on its side roads.
Figure 1 – Local redistribution of traffic - Watsonia Road through traffic impedances

Table 1 – Impacts on daily traffic volumes, due to Watsonia Road sensitivity tests (two-way, AWDT)

<table>
<thead>
<tr>
<th>Road name</th>
<th>Location</th>
<th>Potential daily traffic impact due to signal phasing changes at Watsonia Road – 2036 ‘with NEL project’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watsonia Road</td>
<td>Between Grimshaw Street and Greensborough Bypass</td>
<td>Up to -40%*</td>
</tr>
<tr>
<td>Grimshaw Street</td>
<td>Between Plenty Road and Watsonia Road</td>
<td>Negligible</td>
</tr>
<tr>
<td>Grimshaw Street</td>
<td>Between Watsonia Road and Greensborough Bypass</td>
<td>Negligible</td>
</tr>
<tr>
<td>Greensborough Road</td>
<td>South of Watsonia Road</td>
<td>0 to -5%</td>
</tr>
<tr>
<td>Greensborough Bypass</td>
<td>Between Watsonia Road and Grimshaw Street</td>
<td>+5 to +10%</td>
</tr>
<tr>
<td>Greensborough Bypass</td>
<td>Between Grimshaw Street and M80 Ring Road</td>
<td>Negligible</td>
</tr>
<tr>
<td>North East Link</td>
<td>Between Lower Plenty Road and Grimshaw Street</td>
<td>Negligible</td>
</tr>
</tbody>
</table>

*A 40% reduction was predicted in the most extreme scenario modelled only.*
It is therefore considered that signal phasing adjustments could be used to mitigate the predicted increases in traffic along Watsonia Road as a result of North East Link. However, these treatments may cause other adverse impacts, such as additional traffic on Greensborough Bypass and additional travel time for local residents and businesses accessing Watsonia Road. These impacts would need to be carefully assessed alongside the benefits of reducing through traffic on Watsonia Road.

For the purposes of the TTIA however, the assumption of existing signal phasing arrangements at the intersections of Watsonia Road / Grimshaw Street and Watsonia Road / Greensborough Bypass is conservative. The TTIA has therefore evaluated a ‘worst case’ scenario for Watsonia Road, which does not discourage through traffic and therefore results in the largest uplift in traffic as a result of North East Link. Once signal phasing along this route is adjusted to discourage through traffic on Watsonia Road, it is likely that the extent of additional vehicle movements will be reduced.

**Avon Street access**

**Background**

The TTIA included an assessment of the truncation of Avon Street from Bulleen Road. This truncation was deliberately implemented in the EES Reference Project to prevent rat-running between Manningham Road and the proposed North East Link ramps on Bulleen Road.

The TTIA peer reviewer provided the following recommendation:

*It is recommended the TTIA and Reference Design explore left-in/left-out arrangements to and from Avon Street at Bulleen Road.*

**TTIA assessment – Avon Street access arrangements**

The TTIA provides a summary of the proposed changes to Avon Street, including the diversions that would need to be performed by residents accessing their properties.

The TTIA assessment of these impacts is provided in section 9.2.4, and is summarised below:

- Under the EES Reference Project Avon Street will be closed off from Bulleen Road and neighbouring Austin Street will be reconfigured as left-in/left-out only, as shown in Figure 2.
- Traffic bound for Bulleen Road from Avon Street will be required to use Austin Street or York Street/Manningham Road (an additional 500 metres to one-kilometre travel distance, or approximately one to two minutes’ additional travel time), as shown by the black arrows in Figure 3.
- Traffic from Bulleen Road to the south wishing to access Avon Street will be required to use Thompsons Road/Manningham Road and perform a left turn at York Street, amounting to approximately an additional two kilometres travel distance or two minutes’ travel time, as shown by the black arrows in Figure 3.

Based on the assessment undertaken within the TTIA, it is considered that the closure of Avon Street at Bulleen Road is possible without significant impact to residents.
Figure 2 – Changes to local access near the Manningham Road interchange, EES Reference Project
Response to peer review recommendation

The potential to include a left in/left out arrangement to maintain access between Avon Street and Bulleen Road as part of the Reference Project has been assessed. It is considered undesirable for the following reasons.

If a left-in/left-out arrangement were to be considered within the EES Reference Project, it would need to be tied in directly with the signalised intersection at the North East Link ramps and Bulleen Road. It is undesirable to have a left-in/left-out treatment within a signalised intersection, as it creates confusion with respect to traffic priority. Left-turning vehicles usually have priority over right-turning vehicles although in this case the right turning vehicle would have right-of-way due to a signalised green arrow, which could lead to collisions.

It is also possible that vehicles could travel along Avon Street and drive around the traffic island to access the North East Link ramps, reintroducing a ‘rat-run’ along Avon Street. This is likely to increase traffic volumes along Avon Street which, as a local access road, is not suited to significant through traffic.

Fully signalising the intersection would deteriorate performance along Bulleen Road and the North East Link interchange ramps.
It is therefore not recommended to pursue a left-in/left-out arrangement at Avon Street based on the configuration of the Reference Project.

Bulleen Park and Ride

Background

The TTIA does not provide a detailed assessment of the proposed Bulleen Park and Ride. This is because detailed project scope for this facility was not provided in the EES project description documents.

The peer review of the TTIA undertaken by GTA recommended that:

*Commentary is provided on the proposed Bulleen Road Park and Ride facility including estimated number of car parking bays, general facilities and proposed access arrangements for general traffic and bus traffic.*

Commentary on the proposed Bulleen Road Park and Ride facility

The TTIA assumed the provision of a Bulleen Park and Ride facility which would be of a similar size to the existing Doncaster Park and Ride. The Bulleen Park and Ride facility is proposed to be located on the north east corner of the intersection of Bulleen Road and Thompsons Road. Access arrangements between the neighbouring Manningham Club and Thompsons Road have been assumed to be maintained. This was accounted for in the microsimulation modelling assessments (as per Section 9.3.3 of the TTIA) which included traffic demand associated with the Bulleen Park and Ride.

The assessment considers the impact of access to/from the Bulleen Park and Ride via Thompsons Road for general traffic. Bus traffic would access the facility via an at-grade intersection between the Doncaster Busway and Thompsons Road. Buses travelling to/from Thompsons Road would access the facility via an intersection on Thompsons Road. Westbound buses along Thompsons Road would use a dedicated diverge lane from Thompsons Road to join the Busway, while eastbound buses from the Park and Ride will turn left from the facility onto Thompsons Road.

This proposed layout is provided in Figure 4.
Based on advice from the Department of Transport, the busway and associated park and ride facilities have been designed to accommodate up to 240 buses per hour (two-way) in peak periods within the EES Reference Project. This is considered by the Department to represent an ‘upper limit’ (and therefore conservative) scenario for operating frequencies along the busway.

Chapter 8 of the main EES report provides an overview of the North East Link project description, and is consistent with the Reference Project assessed by the TTIA. Section 8.9.6 of the main EES report summarises the public transport upgrades associated with North East Link. This includes the proposed size of the Bulleen Park and Ride, which is planned to provide between 300-400 parking spaces.

The Department of Transport is responsible for determining the ultimate technical and design requirements of the Bulleen Park and Ride facility. These will include further specifications confirming:

- Car and bicycle parking provision;
- Bus stop design and bay provision;
- Access points for buses, private vehicles and bicycles; and
- General facilities, including station buildings, ticketing, signage and drop-off zones.
Memo

To: GTA

Copy to:

From: Tony Frodsham

Date: 13 June 2019

Subject: Response to outstanding items in microsimulation modelling peer review report

Job no.: P0015

Background

A microsimulation model was used to prepare the Traffic and Transport Impact Assessment (TTIA) for the North East Link Environment Effects Statement (EES). A peer review of the microsimulation model was conducted, as part of a broader peer review of the EES technical reports.

The list of outstanding peer review recommendations, relating to the TTIA microsimulation model, is contained in Table 1.

Table 1 – Outstanding recommendations – microsimulation modelling peer review

<table>
<thead>
<tr>
<th>ID</th>
<th>Recommendation details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation One V2</td>
<td>Replicate the operational effects associated with the Hoddle Street and Eastern Freeway junction to ensure those characteristic elements are appropriately considered on the operation of the broader corridor.</td>
</tr>
<tr>
<td>Recommendation Two V2</td>
<td>Ensure suitable documentation is available on file (and accessible) which demonstrates the validity and conformity of the raw survey data in the event that a request is made to demonstrate adequacy and confirm VicRoads were consulted and were satisfied with the adopted survey data.</td>
</tr>
<tr>
<td>Recommendation Three V2</td>
<td>Ensure suitable documentation is available on file (and accessible) which demonstrates existing traffic performance has been adequately documented including queuing and general vehicle delay observations out in the field.</td>
</tr>
<tr>
<td>Recommendation Five V2</td>
<td>Provide written documentation which outlines and summarises the issues raised by the community and stakeholders, the dates and time ranges of visits completed; observations recorded on those sites visits and changes made to the base model to satisfactorily replicate observed network performance. This documentation should also demonstrate that the adjustments made to the M80 model (2012 data) are sufficiently robust and thorough. This summary paper should subsequently confirm outputs such as queuing on key parts of the network are consistent with field observations relied upon to calibrate the existing (2017) base condition.</td>
</tr>
<tr>
<td>Recommendation Six V2</td>
<td>Ensure the reported period in the TIA reflects the adopted simulation period.</td>
</tr>
<tr>
<td>Recommendation Nine V2</td>
<td>It is recommended the vehicle types and compositions should be more thoroughly explained in the reports to ensure audience appreciation of the applied methodology.</td>
</tr>
<tr>
<td>Recommendation Eleven V2</td>
<td>Provide within the NEL TIA suitable and sufficient detail on driver behaviour adjustments made to the prepared Eastern Freeway models where an inconsistency or deviation from the base model exists.</td>
</tr>
<tr>
<td>Recommendation Twelve V2</td>
<td>Adjust the M80 No Project model to ensure the same vehicle behaviour is established on both the No Project and With Project models where similar traffic environments occur. Where deviations from this approach have occurred provide suitable and sufficient detail in the NEL TIA.</td>
</tr>
<tr>
<td>Recommendation Thirteen V2</td>
<td>Ensure the TIA provides a suitable level of explanatory commentary on the applied constrained capacity methodology and confirming this was applied</td>
</tr>
<tr>
<td>Recommendation Fourteen V2</td>
<td>Ensure the TIA provides a suitable level of explanatory commentary on the methodology applied to profile demands being generated in the future models.</td>
</tr>
</tbody>
</table>
The following sections respond to each of the recommendations.

**Recommendation One V2**

"Replicate the operational effects associated with the Hoddle Street and Eastern Freeway junction to ensure those characteristic elements are appropriately considered on the operation of the broader corridor."

VISSIM modelling was undertaken to investigate the impact on AM peak queueing at the western end of the Eastern Freeway in the 2036 North East Link (NEL) Project scenario. The modelling makes use of the 2017 validated Eastern Freeway base model.

The microsimulation model study area, shown in Figure 1, includes the westbound merge from Chandler Highway, but not the Hoddle Street diverge, nor the signalised intersections at Hoddle Street and Wellington Street.

Figure 1 – Base model study area extents

Floating car dashboard camera footage taken in May 2017 was used to develop an observed queue length profile for the Hoddle Street exit ramp. Since footage is limited to the floating car travel route (Alexandra Parade, turning around at Wellington Street) Hoddle Street exit ramp queueing was measured from the diverge point on the Eastern Freeway.

The VISSIM base model network was extended to include the Hoddle Street exit ramp and Alexandra Parade as far as Wellington Street. The generation of the queue on the Eastern Freeway is complex and is not necessarily created by the traffic signals at Hoddle Street or Wellington Street, but it is due to the downstream congestion beyond these locations.
As such, the signalised junctions at these locations were not explicitly modelled, but their impacts were approximated by simple red / green operation for the eastern approaches. The extended part of the model was configured assuming a fixed 120 second cycle time for the signals at both locations. This would enable the creation of a queue along the Eastern Freeway which matches the observed queue, but would not necessarily show the optional performance of these two signalised intersections.

Modelled green times at Hoddle Street and Wellington Street were adjusted per fifteen minute period so as to result in a modelled queue length profile which best approximates real world observations. The resulting queue profile throughout the model period is shown in Figure 2.

Figure 2 – 2017 queue lengths from Hoddle Street diverge (modelled and observed)

The results presented in Figure 2 shows that the modelled queue closely aligns with the existing queue on the Eastern Freeway.

The back of queue remains clear of the Chandler Highway westbound merge influence area throughout the model, and therefore does not impact results inside the validated microsimulation model study area.
Recommendation Two V2

“Ensure suitable documentation is available on file (and accessible) which demonstrates the validity and conformity of the raw survey data in the event that a request is made to demonstrate adequacy and confirm VicRoads were consulted and were satisfied with the adopted survey data.”

The Eastern Freeway microsimulation base models were calibrated and validated to the following datasets collected in May 2017, including:

- Ramp-to-ramp Origin-Destination survey;
- ATC (tube) data from entry and exit ramps;
- Main line and intersection video counts; and
- Floating car travel times.

To assess and confirm the suitability of the survey date as being representative of a typical weekday, Eastern Freeway SVO (Speed Volume Occupancy) data was obtained from VicRoads for the entire month of May.

Main line volumes at all sites in both directions, over both peak periods of each day, were charted to give an indication of day to day consistency throughout the month.

A sample of key locations / directions is presented for weekdays in Figure 3 to Figure 6. These charts indicate that the surveyed date was representative of a typical weekday in May 2017.

Figure 3 - Eastern Freeway west of Springvale Road - Westbound direction - 06:30 to 08:30 (weekdays)
Figure 4 - Eastern Freeway west of Burke Road - Westbound direction - 06:30 to 08:30 (weekdays)

Figure 5 - Eastern Freeway west of Springvale Road - Eastbound direction - 16:00 to 18:00
**Recommendation Three V2**

“Ensure suitable documentation is available on file (and accessible) which demonstrates existing traffic performance has been adequately documented including queuing and general vehicle delay observations out in the field.”

Observed data used to develop, calibrate and validate the Eastern Freeway and M80 base microsimulation models is summarised in the respective calibration / validation reports which were provided for review. Raw survey data is available on file.

The base models were calibrated to turning movement data and validated using journey time data from a concurrent floating car survey. As discussed in Recommendation One V2, dashboard mounted camera footage was used to examine queue lengths at the approach to Hoddle Street.

**Recommendation Five V2**

“Provide written documentation which outlines and summarises the issues raised by the community and stakeholders, the dates and time ranges of visits completed; observations recorded on those sites visits and changes made to the base model to satisfactorily replicate observed network performance. This documentation should also demonstrate that the adjustments made to the M80 model (2012 data) are sufficiently robust and thorough. This summary paper should subsequently
confirm outputs such as queuing on key parts of the network are consistent with field observations relied upon to calibrate the existing (2017) base condition.”

Basing traffic models on issues raised by the community is not advised as often these issues are subjective, presenting one view point and capturing one individual experience at a distinct point in time. The appropriate way, as per all valid guidance is to base models on factual observed traffic data, collected over a period of time to represent typical performance.

At the outset of the project an initial adjustment was made to the M80 base year matrices to attempt to bring to the volumes in line with recent observations. Some OD pairs were factored through a process informed by comparison of the modelled volumes against recently observed count data and SCATS detector data.

The estimated 2017 demand matrices result in operation of the model that reflects typical queueing and congestion at key locations in the study area.

A summary of data sources is contained in Table 2.

Table 2 – Observed data sources

<table>
<thead>
<tr>
<th>Location</th>
<th>Survey type</th>
<th>Date/s collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greensborough Road, south of Watsonia Road.</td>
<td>Bi-directional tube count</td>
<td>May 2017</td>
</tr>
<tr>
<td>Various signalised intersections</td>
<td>SCATS permanent detector data</td>
<td>May 2017</td>
</tr>
</tbody>
</table>

Recommendation Six V2

“Ensure the reported period in the TIA reflects the adopted simulation period.”

The peak periods used in the base models were informed by relevant survey data. Future forecasts are expressed as two hour peak demands, without precise boundaries defined for the time of day. This is because the peak two-hour period may not be at the exact same time in 2036 as it is today. As such, references to particular peak period times have been removed from the TTIA.

Recommendation Nine V2

“It is recommended the vehicle types and compositions should be more thoroughly explained in the reports to ensure audience appreciation of the applied methodology.”
Light and heavy vehicle user class matrices were developed separately and assigned their own vehicle types in the microsimulation models. The distribution of heavy vehicle dimensions in the model have been informed by classified ATC survey results.

**Recommendation Eleven V2**

“Provide within the NEL TIA suitable and sufficient detail on driver behaviour adjustments made to the prepared Eastern Freeway models where an inconsistency or deviation from the base model exists.”

Explanation of driver behaviour adjustments made to the Eastern Freeway and M80 models is covered in a memorandum attached as Appendix B to GTA’s microsimulation peer review report (Appendix A of Appendix A of the TTIA).

**Recommendation Twelve V2**

“Adjust the M80 No Project model to ensure the same vehicle behaviour is established on both the No Project and With Project models where similar traffic environments occur. Where deviations from this approach have occurred provide suitable and sufficient detail in the NEL TIA.”

Driver behaviour is consistent across the Project and No Project models where their network layouts are common. Driver behaviour has been adjusted in the Project models as necessary, to account for altered network conditions. For example, where an entry ramp has been upgraded from a merge to an added lane arrangement.

Explanation of driver behaviour adjustments made to the Eastern Freeway and M80 models is covered in a memorandum attached as Appendix B to GTA’s microsimulation peer review report (Appendix A of Appendix A of the TTIA).

**Recommendation Thirteen V2**

“Ensure the TIA provides a suitable level of explanatory commentary on the applied constrained capacity methodology and confirming this was applied consistently across the No Project and With Project cases.”

This item was addressed during the TTIA peer review. Section 4.5 of the TTIA has detail regarding the extent of the constraining process applied to the forecast traffic volumes.
Recommendation Fourteen V2

“Ensure the TIA provides a suitable level of explanatory commentary on the methodology applied to profile demands being generated in the future models.”

The profiling of future traffic demands is based on the existing profiles as observed through the data collection process. This has been utilised as it is not possible to forecast future profiles using the strategic transport model.

For freeway interacting trips, demand profiling was applied at the ramp level, based on ATC data from the relevant entry ramps. For non-freeway trips, profiling was applied based on aggregated turning movement count data from the relevant arterial corridor. Profiles were derived and applied per user class.
An alternate layout for the Watsonia area (Watsonia intersection and Elder Street intersection) was been released by the North East Link Project in March 2019. GTA has requested information regarding the traffic performance of the Watsonia alternate design.

**Background**

The Watsonia Precinct was highlighted as an area that additional options were being considered due to on-going work with Council. Greensborough Bypass carries high traffic volumes throughout the day, creating a barrier for east-west movement. Road roads such as Watsonia Road and Elder Street are important to the local area, providing connection from the Greensborough Bypass to businesses and residential properties.

Traffic volumes are predicted to increase between today and 2036 due to population, employment and education growth in the area. This is likely to place additional pressure on the road network.

The forecast 2036 traffic volumes without North East Link in the vicinity of the Watsonia Precinct are presented in Figure 1.
The North East Link Traffic and Transport Impact Assessment (TTIA) included an assessment of the reference design around the Watsonia Precinct. This design changed the connectivity of Elder Street to Watsonia Station, diverting traffic south through a single intersection of Watsonia Road and Greensborough Bypass. This was required due to the grade of North East Link which prevented a bridge connection directly between Elder Street and Watsonia Station.

Daily traffic volumes were predicted for the roads surrounding the Watsonia Precinct for the reference design. These are presented in Figure 2. The changes in daily volumes between the 2036 project and no project scenarios are presented in the TTIA.

The reference design layout has been tested using a microsimulation model. The results of the modelling are presented within the TTIA, with detailed output within Appendix E of the TTIA. Each of the intersections within the vicinity of the interchange meet the project performance target of a level of service D in the peak periods.
Alternate design

The alternate design changes the connectivity between Elder Street and Watsonia Station, through the provision of a bridge linking the two. This layout reflects the existing connectivity to and from Elder Street.

A potential layout was released by the North East Link Project in March 2019. This layout provided a three-lane bridge connecting Elder Street with Watsonia Station. However, feedback through the submissions to the Independent Advisory Committee (IAC) have raised concerns with the performance of this bridge and the intersections on either end. The main concerns that were raised was the potential lack of capacity of these intersections, particularly the Elder Street approach.

To address the concerns raised within the submissions, an updated layout has been produced for the Elder Street connection. This provides a four-lane bridge, with additional capacity on the Elder Street approach. The proposed updated layout of the Elder Street intersection and bridge is presented in Figure 3.
Daily traffic volumes for the alternate design have been predicted and are presented in Figure 4. Traffic volumes surrounding the intersection are not predicted to change significantly due to the alternate design.

Microsimulation modelling of the alternate design has been performed to determine whether it meets the performance target of level of service D for the whole intersection. The results of the modelling as provided in Table 1 to Table 6.

The modelling shows that all of the intersections meet the performance target of Level of Service D for the whole intersection. All intersections are predicted to operate better in the project scenario when compared to the no project scenario in 2036.
Figure 4 – 2036 daily traffic volumes alternate design

Alternate Design

16,000 – 21,000

WATSONIA ROAD

13,000 – 17,000

WATSONIA STATION

6,000 – 8,000

ELDER STREET

19,000 – 25,000

WATTLE DRIVE

38,000 – 49,000

TORBAY STREET

38,000 – 50,000

YALLAMBIE ROAD

BLAMEY ROAD

LEGEND

Δ TUNNEL PORTAL

 Railway STATION

Freeway

Tunnel

REBUILT GREENSBOROUGH BYPASS / ROAD

Roads
Table 1: 2036 AM peak: Grimshaw Street Interchange

<table>
<thead>
<tr>
<th></th>
<th>First hour</th>
<th></th>
<th>Second hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Project Case</td>
<td>Project Case</td>
<td>No Project Case</td>
<td>Project Case</td>
</tr>
<tr>
<td></td>
<td>Arrived Volume</td>
<td>Average Delay (sec)</td>
<td>Level of Service</td>
<td>95th Percentile Queue (m)</td>
</tr>
<tr>
<td>Southern Approach</td>
<td>1,550</td>
<td>429.8</td>
<td>F</td>
<td>500+</td>
</tr>
<tr>
<td>Grimshaw Street E</td>
<td>1,550</td>
<td>194.5</td>
<td>F</td>
<td>500+</td>
</tr>
<tr>
<td>Northern Approach</td>
<td>2,660</td>
<td>44.8</td>
<td>D</td>
<td>200</td>
</tr>
<tr>
<td>Grimshaw Street W</td>
<td>680</td>
<td>42.2</td>
<td>D</td>
<td>55</td>
</tr>
<tr>
<td>Intersection</td>
<td>6,440</td>
<td>173.1</td>
<td>F</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: 2036 PM peak: Grimshaw Street Interchange

<table>
<thead>
<tr>
<th></th>
<th>First hour</th>
<th></th>
<th>Second hour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Project Case</td>
<td>Project Case</td>
<td>No Project Case</td>
<td>Project Case</td>
</tr>
<tr>
<td></td>
<td>Arrived Volume</td>
<td>Average Delay (sec)</td>
<td>Level of Service</td>
<td>95th Percentile Queue (m)</td>
</tr>
<tr>
<td>Southern Approach</td>
<td>1,930</td>
<td>313.9</td>
<td>F</td>
<td>500+</td>
</tr>
<tr>
<td>Grimshaw Street E</td>
<td>1,040</td>
<td>426.7</td>
<td>F</td>
<td>500+</td>
</tr>
<tr>
<td>Northern Approach</td>
<td>2,470</td>
<td>39.5</td>
<td>D</td>
<td>150</td>
</tr>
<tr>
<td>Grimshaw Street W</td>
<td>1,480</td>
<td>204.7</td>
<td>F</td>
<td>475</td>
</tr>
<tr>
<td>Intersection</td>
<td>6,920</td>
<td>209.4</td>
<td>F</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: 2036 AM peak: Watsonia Road Intersection

<table>
<thead>
<tr>
<th></th>
<th>First hour</th>
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Table 4: 2036 PM peak: Watsonia Road Intersection

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Table 5: 2036 AM peak: Elder Street Intersection

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Table 6: 2036 PM peak: Elder Street Intersection

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The Reference Project for North East Link includes the truncation of the western end of Nell Street in Greensborough. GTA has requested information regarding the existing and forecast traffic volumes on roads surrounding Nell Street.

**Background**

The North East Link EES Reference Project includes the truncation of Nell Street from Greensborough Road (i.e. the service road, rather than the Greensborough Bypass). This is required due to the limited space available to construct the North East Link main line, the rebuilt Greensborough Bypass and new walking and cycling paths.

Nell Street is a local road, aligned east-west within Greensborough. It provides access to residential properties as well as Greensborough College. Nell Street is not utilised by any public bus routes however some school buses operate along it to access Greensborough College.

**Existing traffic volumes**

Existing traffic volumes have been collected on roads surrounding Nell Street with the majority of the roads within the local area carrying low traffic volumes.

The traffic volumes in the area can be summarised as follows and are also presented in Figure 1:

- Nell Street currently carries approximately 1,500 vehicles per day (two-way)
  - This traffic is heavily biased to the westbound direction with over 1,000 vehicles per day heading in this direction
  - The heavy westbound bias is most likely due to ‘rat-running’ vehicles attempting to bypass the queuing along Grimshaw Street (as shown by the orange arrow)
- Longmuir Road currently carries approximately 1,300 vehicles per day (two-way)
- Doris Street currently carries approximately 110 vehicles per day (two-way)
- Adeline Street currently carries approximately 700 vehicles per day (two-way)
- McDowell Street currently carries approximately 4,200 vehicles per day (two-way).
- Elder Street currently carries approximately 7,800 vehicles per day (two-way). This is the most significant road within the local area.
Local road operation

Most roads operate with balanced traffic volumes in each direction. This is typical of local roads where people often make a trip both to and from their origin or destination. The exception to this, in this local area, is Nell Street which has a heavy bias in the westbound direction. Of the 1,500 vehicles a day travelling on Nell Street (two-way), over 1,000 vehicles per day are travelling in the westbound direction. This is likely due to heavy westbound queuing on Grimshaw Street at the Greensborough Bypass intersection, and vehicles using Nell Street to ‘rat-run’ and avoid this.

When North East Link is constructed, the queuing that currently occurs from the intersection of Grimshaw Street and Greensborough Bypass is predicted to be reduced. This is due to the grade separation of Grimshaw Street from the north-south traffic on the Greensborough Bypass which results in more east-west priority (and therefore less queuing) on Grimshaw Street. North-south traffic demand on the reconfigured Greensborough Bypass is also predicted to reduce with the opening of North East Link, which would relieve congestion and queuing at the Grimshaw Street intersection.

Assuming all of the additional westbound traffic on Nell Street is avoiding the Grimshaw Street and Greensborough Bypass queues, the North East Link project could potentially rebalance traffic demand on Nell Street. Based on current traffic demand levels this could reduce traffic volumes to a potential minimum of 800 vehicles per day (i.e. 400 eastbound, 400 westbound). This remaining...
traffic is likely to be undertaking local trips (i.e. with an origin or a destination in the vicinity of Nell Street).

**Redistribution of traffic due to North East Link**

It is proposed that Nell Street would be truncated from Greensborough Road as part of North East Link. As discussed previously, the grade separation of the Grimshaw Street / Greensborough Bypass intersection could reduce traffic on Nell Street to as low as 800 vehicles per day. However, the truncation of Nell Street from Greensborough Road (service road) would require many of these trips to redistribute to alternative routes. The remaining traffic on Nell Street is likely to be local traffic and would therefore disperse onto other nearby local roads.

This traffic would likely disperse across multiple roads in the vicinity of Nell Street depending on their specific origin / destination and as such, it is unlikely that any one road would have an increase of 800 vehicles per day. Some of these trips would be destined for properties along Nell Street itself and would therefore remain. The diverted traffic is less likely to use the low-capacity neighbouring Santon Street, Teresa Street and Doris Street and is more likely to use higher-capacity collector roads such as Elder Street and McDowell Street. These roads are best suited to servicing these local movements.
Memo

To: GTA
Copy to:
From: Tony Frodsham
Date: 11 July 2019
Subject: EastLink tunnel performance
Job no.: P0015

GTA has requested an assessment of the predicted performance in the EastLink tunnels. This memo provides additional analysis to that provided within the North East Link Traffic and Transport Impact Assessment (TTIA).

**Background**

The TTIA included an assessment of the predicted changes to the EastLink tunnel traffic performance due to the project. This included an assessment of:

- The existing conditions, summarising the current traffic performance issues relating to the tunnels (section 6.3.4 of the TTIA)
- Traffic forecasts under a ‘no North East Link project’ scenario in 2036 (section 8.3 and Appendix E of the TTIA)
- Traffic forecasts under a ‘with North East Link project’ scenario in 2036, to assess the impact of the project on the tunnels’ traffic performance (section 9.3 and Appendix E of the TTIA).

**Existing conditions**

The existing conditions assessment found that traffic flow near the EastLink tunnels often breaks down in peak periods. However, this is not due to a lack of capacity in the tunnel itself, but rather because of upstream and downstream bottlenecks. These bottlenecks are described in detail below and are illustrated in Figure 1:

- In the AM peak, the inbound Springvale Road on-ramp carries high traffic volumes which enter the freeway without the control of ramp signals. This uncontrolled entry causes flow breakdown on the Eastern Freeway, which then sends a congestion 'shockwave' back through the EastLink tunnels.
- Unmetered traffic enters from the Ringwood Bypass onto EastLink before the tunnel which combines with the ‘shockwave’ caused by the Springvale Road entry ramp. This causes speeds in the tunnel to drop significantly for inbound traffic.
Figure 1 – Existing conditions analysis, AM peak congestion in the EastLink tunnels

Vehicle speeds along EastLink between Ringwood Bypass and Springvale Road are presented in Figure 2 and Figure 3 for AM peak inbound and PM peak outbound respectively. This data reflects average weekday conditions from May 2017 and has been collected using permanent data stations along the freeway. Speeds are presented at four distinct locations, as marked on the map in Figure 4, including near the tunnel entry and exit, inside the tunnel and near the Springvale Road interchange. The speed limit within the tunnel is 80km/h, and is 100km/h outside of the tunnel.

Figure 2 – Existing conditions analysis, weekday inbound AM peak vehicle speeds (May 2017)
Figure 2 shows that the vehicle speeds within the tunnel are relatively stable throughout the AM peak, sitting between 70 and 75km/h. There is a slight deterioration between 6:30-6:45am however after this period the speeds remain stable. This shows that the tunnel is operating well throughout the morning peak, with vehicle speeds close to the posted speed limit.

Outside of the tunnel there is a gap between the posted speed limit and the observed speeds. In the inbound direction the 100km/h zone begins just prior to the Park Road overpass, so while the speed limit here is 100km/h, vehicles may not have reached the posted speed limit before the data station. However, there is a large reduction in vehicle speeds on the approach to the Springvale Road interchange. Vehicle speeds drop steadily from the start of the morning peak, with greatest reduction from 6:30-6:45am. This reduction in speed is due to the congestion at the Springvale Road inbound entry ramp, causing flow breakdown at the merge. Once the volumes on this entry ramp reduce, vehicle speeds increase, however they still remain below the posted speed limit.
This indicates that the primary cause for inbound congestion is the Springvale Road entry ramps, rather than the capacity of the EastLink tunnels themselves. It also shows that the grade of the tunnel is not a significant issue, with speeds of vehicles travelling uphill (identified as the orange line) only being approximately 5km/h slower than those travelling downhill (identified as the blue line).

Figure 3 indicates that vehicle speeds in the tunnel in the outbound direction are also relatively stable across the PM peak. There is a deterioration in observed speeds of almost 10km/h across all locations between 6:00-6:15pm. This reduction is due to the heavy weave segment at the approach to the Ringwood Bypass exit. This causes some flow breakdown back through the tunnel, which is cleared relatively quickly. Once again the grades of the tunnel does not appear to be an issue with the uphill speeds (represented by the blue line) only being 5km/h slower than the downhill speeds (represented by the orange line).

**Forecast traffic performance**

Density-based Level of Service is the primary performance indicator used to assess freeway performance in the TTIA. However, this indicator is suited for locations where the speed limit is 100km/h or above and is not suited for locations with a speed limit lower than 100km/h. As the speed limit in the EastLink tunnels is 80km/h their performance was alternatively assessed using travel speeds.

Forecast travel speeds through the EastLink tunnels were extracted from the microsimulation models, for both the ‘with project’ and ‘no project’ scenarios. Two routes were assessed:

1. From EastLink at the south-facing Maroondah Highway ramps, to the Eastern Freeway at the Blackburn Road overpass; and
2. From the Ringwood Bypass (just west of the Ringwood Street intersection) to the Eastern Freeway at the Blackburn Road overpass.

These routes are shown by the red lines in Figure 5.

**Figure 5 – Travel speed assessments, EastLink tunnels**
Inbound (northbound) AM peak travel speeds for the ‘with project’ and ‘no project’ models are compared in Figure 6. Travel speeds for each 100 metre interval along Route 1 (between EastLink and Eastern Freeway) and Route 2 (between Ringwood Bypass and Eastern Freeway) are shown by the solid and dotted lines respectively.

Key observations include:

- Both the inbound ‘with project’ and ‘no project’ travel speeds are very similar until the approach to the Springvale Road interchange.
- At this point the merge from the inbound Springvale Road entry ramp causes significant flow breakdown in the ‘no project’ scenario, which leads to vehicle speeds reducing to less than 40km/h. The inclusion of ramp-metering in the ‘with project’ scenario, combined with the added lane from the entry ramp onto the freeway mainline, controls the entry volumes such that travel speeds along the Eastern Freeway main line operate at close to sign-posted speed (100km/h).
- Travel speeds through the EastLink tunnel segments are virtually unchanged between the ‘with project’ and ‘no project’ scenarios. Tunnel speeds are generally forecast to operate at just under sign-posted speeds (80km/h). The exception to this is the uphill segment at the approach to Springvale Road, where the grade reduces travel speeds to approximately 70km/h across both the ‘with project’ and ‘no project’ scenarios.

Figure 6 – AM peak travel speed assessments

Outbound (southbound) PM peak travel speeds for the ‘with project’ and ‘no project’ models are compared in Figure 7. Key observations include:

- ‘With project’ speeds at the Blackburn Road overpass improve significantly due to the removal of the existing lane drop.
Travel speeds are otherwise very similar within the EastLink tunnels, operating at close to sign-posted speed. A small reduction in travel speed is forecast at the approach to the Ringwood Bypass exit ramp, due to lane changing and an uphill grade.

Figure 7 – PM peak travel speed assessments

Conclusion

Modelling indicates that the traffic performance of the EastLink tunnels and surrounds is forecast to generally improve in the ‘with project’ scenario. The key outcomes from this analysis were:

- Inbound AM peak travel speeds at the approach to the Springvale Road interchange are forecast to improve significantly. This is primarily due to the implementation of ramp metering at the inbound Springvale Road entry ramp.
- Travel speeds inside the EastLink tunnels are forecast to remain approximately unchanged between the ‘with project’ and ‘no project’ scenario, and operate at close to sign-posted speeds in both cases.
- Outbound PM peak travel speeds at the Blackburn Road overpass are predicted to improve due to the removal of the lane drop.

This shows that no physical capacity improvements (such as lane widening) is required in the EastLink tunnels due to the North East Link.
GTA has requested information regarding the operation of the Diamond Creek roundabout and who is responsible for its potential upgrade.

**Background**

The Diamond Creek Road roundabout is at the intersection of the Greensborough Bypass, Diamond Creek Road and Civic Drive. It carries large volumes of traffic, particularly during the peak periods. There are significant delays at the roundabout due to unbalanced flows, which restricts traffic flow and results in high levels of rat-running to avoid these delays.

The roundabout has signalised approaches to try and improve its overall operation. However, this can lead to long delays on some approaches and overall has not managed to improve the overall operation of the roundabout to a satisfactory level.

**Treatment**

The poor performance of the roundabout is a known issue and was identified as a complementary project in the North East Link Business Case, which would be delivered by others.

VicRoads is the relevant road authority that is assessing the performance of the roundabout and the potential upgrades that may be required.