

*Environment Effects Act 1978*

*Planning and Environment Act 1987*

**Inquiry and Advisory Committee Report**

**North East Link Project**

**22 October 2019**

*Environment Effects Act 1978*

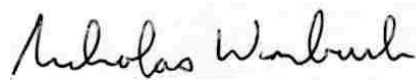
Inquiry Report pursuant to section 9(1)

*Planning and Environment Act 1987*

Advisory Committee Report pursuant to section 151

North East Link Project

22 October 2019



Nick Wimbush, Chair



Dalia Cook, Deputy Chair



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## Glossary and abbreviations

AAQMS	Ambient Air Quality Monitoring Station
Air Toxics NEPM	National Environment Protection (Air Toxics) Measure
BAAG	Bulleen Art & Garden
B & F	Broadway & Frank
Banyule	Banyule City Council
BBW Councils	Banyule City Council, Boroondara City Council and Whitehorse City Council
BCR	Benefit Cost Ratio
BIP	Bulleen Industrial Precinct
BIZ Group	Bulleen Industrial Zone Group
Boroondara	Boroondara City Council
Carey	Carey Baptist Grammar School
CD	Collector Distributor (traffic lane arrangement)
CEMP	Construction Environment Management Plan
CHMP	Cultural Heritage Management Plan
CIS	Comprehensive Impact Statement
CNVG	NSW Roads and Maritime Services Construction Noise and Vibration Guideline, August 2016
CNVMP	Construction Noise and Vibration Management Plan
CO	Carbon Monoxide
DART	Doncaster Area Rapid Transit



dB	Decibel – measurement of noise
dba	Expression of the relative loudness of sound in air as perceived by the human ear
DDO	Design and Development Overlay
DELWP	Department of Environment, Land, Water and Planning
DoT	The Department of Transport
EE Act	<i>Environment Effects Act 1978</i>
EES	Environment Effects Statement
EMF	Environment Management Framework
EMP	Environment Management Plan
EMS	Environment Management System
EPA	Environment Protection Authority
EP Act	<i>Environment Protection Act 1970</i>
EP (Amendment) Act	<i>Environment Protection (Amendment) Act 2018</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
EPR	Environmental Performance Requirement(s)
EVC	Ecological Vegetation Class
FFG	<i>Flora and Fauna Guarantee Act 1988</i>
GDE	Groundwater Dependent Ecosystems
GHG	Greenhouse Gas
Heide MOMA	Heide Museum of Modern Art
HIA	Health Impact Assessment
HO	Heritage Overlay
HPFV	High Productivity Freight Vehicles
IAC	Inquiry and Advisory Committee
IEA	Independent Environmental Auditor
Incorporated Document	North East Link Project Incorporated Document
ISCA	Infrastructure Sustainability Council of Australia
ITEANZ	Institute of Transportation Engineers Australian and New Zealand
JFT	Japan Food Trading

LA10	Noise level exceeded for 10% of a specified time period
LAeq	Equal to the average noise over a specified period
LACA	<i>Land Acquisition and Compensation Act 1986</i>
LFG	Landfill Gas
LOS	Level of Service
LVIA	Landscape and Visual Impact Assessment
LXRA	Level Crossing Removal
MAC	Major Activity Centre
Map book	The map book which forms part of the EES
Manningham	Manningham City Council
Marcellin	Marcellin College
MLTV	Medium Long Term Viability
MMRP	Melbourne Metro Rail Project
MTIA	Major Transport Infrastructure Authority
MTPF Act	<i>Major Transport Projects Facilitation Act 2009</i>
National Trust	The National Trust of Australia (Vic)
Native Vegetation Guidelines	Guidelines for the removal, destruction or lopping of native vegetation, Department of Environment, Land, Water and Planning, December 2017
NEIC	National Employment and Innovation Cluster
NO <sub>2</sub>	Nitrogen Dioxide
OD	Over Dimensional
OEMP	Operational Environment Management Plan
OGA	Open Graded Asphalt
PAO	Public Acquisition Overlay
PE Act	<i>Planning and Environment Act 1987</i>
PER	Public Environment Report
PFAS	Per- and poly- fluoroalkyl substances
PIW	Prescribed Industrial Waste
PM <sub>2.5</sub>	Particulate Matter with an equivalent aerodynamic diameter of 2.5 microns or less
PPF	Planning Policy Framework

Proponent	The North East Link Project
PSA	Planning Scheme Amendment GC98
RAP	Registered Aboriginal Party
SCO	Specific Controls Overlay
Scoping Requirements	The final scoping requirements for the EES for the Project issued by the Minister for Planning, June 2018
SEES	Supplementary Environmental Effects Statement
SEMP	Site Environmental Management Plan
SEPP	State Environment Protection Policy
SEPP (AAQ)	State Environment Protection Policy (Ambient Air Quality)
SEPP (AQM)	State Environment Protection Policy (Air Quality Management)
SMART	Save My Area's Residents and Trees (Mr Buono SMART taxpayer road design)
SUZ	Special Use Zone
TBM	Tunnel Boring Machine
The Centre	Watsonia Neighbourhood Activity Centre
National Trust	The National Trust of Australia (Vic.)
The Project	The North East Link Project (NELP)
The Proponent	The North East Link Project
TIA	<i>Transport Integration Act 2010</i>
TN	Technical Note
TRG	Technical Reference Group
Trinity	Trinity Grammar School
UDAP	Urban Design Advisory Panel
UDS	Urban Design Strategy, April 2019
UFP	Ultrafine Particulates
UGB	Urban Growth Boundary
VLC	Veitch Lister Consulting
VicRoads TNRP	VicRoads Traffic Noise Reduction Policy (2005)
VP	Viewpoint
Vpd	Vehicles per day

VPP	Victoria Planning Provisions
VTAG	Victorian Transport Action Group
WAA	Works Approval Application
WASS	Waste Acid Sulfate Soils
WTA	Watsonia Traders Association
Whitehorse	Whitehorse City Council
WHO	World Health Organisation
WSUD	Water Sensitive Urban Design
Yarra Riverkeeper	Yarra Riverkeeper Association
YRP Act	<i>Yarra River Protection (Wilip-gin Birrarung murron) Act 2017</i>
ZTV	Zone of Theoretical Visibility

## Executive summary and recommendations

### (i) Background

The North East Link Project (the Project) is a major city-shaping piece of road infrastructure that will connect the M80 Ring Road in Greensborough via surface roads, trenches and tunnels to the Eastern Freeway in Bulleen.

The Proponent is the North East Link Project (the Proponent), an office within the Major Transport Infrastructure Authority (MITA), a branch of the Department of Transport (DoT) in the Victorian Government.

The Project also proposes expansion and upgrade of the Eastern Freeway between Hoddle Street and Springvale Road; with significant works between Bulleen Road and Springvale Road.

The Project includes interchanges at:

- the Greensborough Bypass
- Grimshaw Street in Watsonia
- Lower Plenty Road in Rosanna
- Manningham Road in Bulleen
- the Eastern Freeway in Bulleen.

Complementary elements are proposed including a dedicated busway along the Eastern Freeway from Doncaster Road to Hoddle Street and significant cycling and pedestrian infrastructure upgrades along the Eastern Freeway and in the northern part of the Project area.

The Project has been developed to provide the ‘missing link’ in the freeway network between Melbourne’s north and south east. The lack of such a link has led to:

- inefficient traffic movement between the M80 Ring Road and the Eastern Freeway/EastLink resulting in increased travel time and cost
- high levels of traffic - both cars and trucks - on arterials and local roads fundamentally unsuited to such a level, and particularly the Rosanna Road – Heidelberg – Bulleen Road corridor
- reduced residential amenity along such roads.

Melbourne’s population, and hence vehicle traffic, is predicted to grow significantly in the coming decades, along a similarly high trajectory to the last 10 years. The problems of the existing traffic network in the local area and region are expected to be exacerbated as a result.

### (ii) The assessment process

The Minister for Planning determined in early 2018 that an Environment Effects Statement (EES) for the Project under the *Environment Effects Act 1978* (EE Act) would be required to consider environmental effects.

An EES was prepared and exhibited in early 2019. At the same time, a draft Planning Scheme Amendment (PSA)<sup>1</sup> was developed and exhibited with the EES for Banyule, Boroondara, Whitehorse, Manningham, Yarra, Whittlesea and Nillumbik Planning Schemes.

If approved, the effect of the PSA, amongst other things, will be to include an Incorporated Document via the Specific Controls Overlay (SCO) at Clause 45.12 in those planning schemes. This provides for the Project use and development and provide a statutory basis for the Project Environmental Management Framework (EMF), including the Environmental Performance Requirements (EPR).

The Amendment will also introduce Design and Development Overlays (DDO) to be applied to protect tunnel and portal infrastructure.

The tunnel's vent stacks for ensuring adequate ventilation of vehicle exhaust fumes require works approval under the *Environment Protection Act 1970* (EP Act). The Works Approval Application (WAA) was exhibited with the EES and draft PSA.

### **(iii) What was assessed**

Instead of a detailed project design, the exhibited Project was based on a Reference Design. This is described in the EES Executive Summary:

The reference project is not the final design for North East Link but demonstrates the project's feasibility and ability to achieve acceptable outcomes.

This approach has been taken in some recent major project assessments such as the Melbourne Metro Rail Project and the East West Link assessment, but differs from others such as the West Gate Tunnel Project assessment which considered a detailed, resolved design.

The Reference Design approach received sustained criticism<sup>2</sup> in submissions, largely on the basis that it results in:

- uncertainty around the scale or existence of environmental effects; and thus the degree to which they can, or need to be, avoided or mitigated
- uncertainty around the form and detail of the eventual design
- uncertainty for those who may be compulsorily acquired or otherwise directly and indirectly impacted by the Project
- the limited ability for community input to, and comment on, the actual project as opposed to the theoretical Reference Design put forward in the EES.

### **(iv) Submissions**

In response to exhibition, 874 submissions were received from local Councils, government agencies, local community groups, professional organisations, schools, environmental groups, transport groups, individual submitters and many others.

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<sup>1</sup> Amendment GC98.

<sup>2</sup> The East West (Eastern Section) Link Assessment Committee provided detailed criticism of the Reference Design in its report at pages 55-60.

While many submissions were in support of the concept of a ‘north east link’, they expressed concern about issues such as:

- climate change and the lack of sustainability of fossil fuel-based road transport
- the need for greater investment in public transport rather than this Project
- scepticism as to whether the Project will have a beneficial effect on congestion
- a preference for other routes considered for the North East Link
- impacts on ecology; particularly vegetation and habit loss
- potential impacts on groundwater and surface water features such as the Bolin Bolin Billabong, the Yarra River and other waterways
- health impacts from noise and air quality
- amenity impacts from loss of open space and tree canopy
- business impacts, particularly in Watsonia and the Bulleen Industrial Precinct (BIP)
- impacts on schools and sporting clubs from the Project and particularly construction impacts related to loss of facilities
- impacts on individual properties and residences, either directly from acquisition or indirectly from potential health and amenity impacts.

#### **(v) The Inquiry and Advisory Committee**

The Minister for Planning appointed a joint EES Inquiry and Advisory Committee (IAC) in April 2019 and provided Terms of Reference to guide its work. The Terms of Reference require the IAC to review the Project documentation, including submissions, and conduct Hearings to provide the opportunity for submitters to speak in support of their submission.

Hearings were held over nine weeks from late July to mid-September 2019 at the Veneto Club in Bulleen. Over 200 submitters requested to speak, approximately 70 sets of expert evidence were called in technical areas related to the Project and 14 conclaves were held.

Four formal site inspections were undertaken as well as over 20 site visits by individual members or subsets of the IAC.

The Terms of Reference require the IAC to provide advice to the Minister for Planning, in summary, on:

- whether the Project can achieve acceptable environmental outcomes
- reasonable and feasible modifications to the Project that would provide beneficial outcomes
- measures to prevent, mitigate or offset adverse environmental effects
- conditions that might be applied or changes made to the draft PSA to ensure environmental effects are acceptable
- changes to other elements of Project delivery including the Urban Design Strategy and Environmental Management Framework.

In its role as an Advisory Committee, the IAC is required to advise the Minister for Planning on the form and content of the draft PSA and whether any changes should be made to it.

This report is the IAC’s final task in accordance with its appointment and Terms of Reference.

**(vi) Overall findings**

This Project needs to successfully resolve the tension between road functionality, infrastructure and safety with community liveability, landscape character and economic prosperity in this sensitive corridor. It has not yet struck this balance.

Considering the adverse and beneficial environmental effects as a whole, the IAC considers if certain changes to the Project occur then the environmental effects of the Project could be managed to an acceptable level and the Project approvals should be granted. These changes are described in this report. Having said this, there are several issues and elements of the Project where the actual effects and effectiveness of mitigation will not be able to be properly tested until a resolved design is available. This is likely to be long after the completion of this Inquiry process.

As proposed in the Reference Design, the Project interchanges, particularly those at Lower Plenty Road, Manningham Road and the Eastern Freeway/Bulleen Road, would result in a significant level of environmental impact. The IAC accepts that these interchanges are a fundamental aspect of achieving traffic benefits, but the balance between impact and benefit is far from an easy one.

The IAC considers that many of the Project's potential environmental effects can be managed within the EMF and particularly the EPRs. There have been very significant improvements to the EPRs through this process; the recommended set are far superior to those exhibited in the IAC's opinion. The IAC has recommended further changes to achieve acceptable outcomes in certain areas.

The overall conclusion that the Project's environmental effects should be able to be mitigated to an acceptable level is subject to many important changes outlined in the recommendations in this report.

The IAC considers all these changes are potentially feasible under the Terms of Reference; some will have significant cost implications for the Project, Government and thus the community.

The IAC recommends significant changes to reduce environmental impacts to an acceptable level to meet the evaluation objectives of the Minister's Scoping Requirements, including:

- The need to seriously consider the continuance of a bored tunnel north to Grimshaw Street. The IAC is aware that this will pose technical challenges and additional cost. However, the IAC considers the likely commensurate reduction in environmental effects and the opportunities provided to improve the long-term future of the Watsonia Neighbourhood Activity Centre make this an essential Project improvement.
- Avoidance of surface impacts on Simpson Barracks by identifying it as a "no go zone" for the Project. The evidence is clear that the Barracks contain one of the most significant populations of native vegetation in inner metropolitan Melbourne, including species such as Matted Flax Lily and Studley Park Gum. The final Project design should avoid surface impacts on this area through re-design.



- Consideration of additions to public transport improvements and active transport elements and linkages. The IAC considers that additional improvements are feasible and will add significant benefits to Project delivery.
- Review of the need for the extent of widening of the Eastern Freeway. This is a substantial area of impact on open space and local communities and is a clear negative impact of the decision to choose Option A at the Business Case stage. The IAC is unable to determine if the EPRs relating to optimising design will result in a significant reduced impact compared to the Reference Design, which in this area leads to a sustained impact in terms of loss of amenity, vegetation, habitat and loss of open space and valued parkland.
- Effective Project implementation will be critical, including environmental management of construction impacts.

It is vital for a city-shaping Project such as this, to shape Melbourne in a way that creates a lasting positive legacy. The IAC considers that given the infrastructure design life of 100 years, it would be a lost opportunity to not maximise long-term benefits not only for transport, but for affected communities and environments along the route.

Having made the general findings above, the IAC's strong view is that the Reference Design approach to Project assessment has generated serious challenges for such a large and complex project as this in an established urban area. This method, using a Reference Design, was contemplated in the Scoping Requirements; but importantly was not required.<sup>3</sup>

Some of the concerns with the Reference Design are outlined in Section iii above, in relation to uncertainty. Perhaps the most obvious illustration of this relates to visual impact and urban design. Multiple experts for the Proponent and submitters attempted to have an intellectual discussion about how the Project may look, and what its impact may be. In the absence of an actual project, this is patently a difficult exercise.

Tangible effects of using the Reference Design approach were obvious during the Hearing. The uncertainty in the community amongst businesses, schools, groups and landowners, in the absence of a tangible project design and thus the knowledge of the actually proposed, as opposed to possible, impacts is difficult to overstate. This coupled with limited opportunities to participate when the ultimate design is progressed creates an atmosphere which may unnecessarily cause social concern and social impacts which could be alleviated by providing more detail.

The Proponent submitted that the Reference Design approach is well established in Victoria. The IAC does not agree. While it has been used to evaluate some recent infrastructure projects, it is still a comparatively new approach that has been used only for State-led projects with varying degrees of detail and with varying degrees of success. Moreover, the IAC considers it is an approach to Project assessment that should be used with great caution in future and confined to projects with limited footprints and potential for impact.

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<sup>3</sup> See Section 3.3, Scoping Requirements.

While some of these impacts can be managed to an acceptable level through normal construction management techniques, there is going to be a sustained negative impact on quality of life in the Project area for four to seven years, particularly in relation to traffic. This will be an area requiring careful planning and management.

The IAC makes recommendations which are directed to managing the impacts of construction activities:

- A tunnel boring machine (TBM) launch/retrieval site at Borlase Reserve is not supported given the extent and duration of works and proximity to residential properties. The IAC finds that the Project is likely to generate significant amenity issues in this location.
- The Incorporated Document should require approval of the location and general categories of works permitted for each construction compound given the sensitivities of this corridor.

#### **(vii) Key issues**

The IAC comments on some of the key issues below.

##### **Legislative and policy context**

- A north east link in some form has been entertained for at least 50 years and there is little opposition to the concept.
- The Business Case for the Project, which supports Option A in the EES, does not clearly identify the significant impacts along the Eastern Freeway corridor. It is not clear if the extent and scale of the widening of the Eastern Freeway east of Bulleen Road was countenanced at the time of Options assessment.
- The Project has strong high-level policy support in Plan Melbourne 2017-2050.
- Many submitters were critical of the Project when reviewed against the objectives of the *Transport Integration Act 2010* (TIA); in particular that the Project does not significantly address public transport matters.
- Many submissions were concerned at the lack of a Transport Plan, required by the TIA. This is an ongoing issue which has been identified by several major project inquiries since the Act came into force. There was concern among many submitters that major road projects and other transport projects are not being undertaken within the logical, planned framework that the TIA requires.
- The Project would realise State and local policy objectives to increase vehicle and freight connectivity. However, it is likely to fall short of meeting a broader and equally important suite of policies seeking the protection and enhancement of natural values, protection and growth of local business, social wellbeing and visual amenity unless significant modifications are made in Project design and delivery.

##### **Traffic capacity, connectivity and traffic management**

- The traffic modelling undertaken for the Project appears fit for purpose. Within the general limitation of modelling, the IAC is satisfied that the modelling provides a reasonable basis for the Project.
- While the Project should reduce truck traffic on Rosanna Road once operational, issues will remain with this route due to traffic growth and the apparent need for

its ongoing use as an Over Dimensional (OD) and placarded load route. The need for further traffic management measures and upgrades should be reviewed after Project operation commences to identify if additional measures are justified to improve amenity and safety along this route.

- Alternatives put forward through the EES process, such as the O'Brien alternative,<sup>4</sup> have the potential to achieve integrated outcomes and should be considered further through detailed Project development.
- While access to La Trobe University and the La Trobe National Employment and Innovation Cluster (NEIC) is said to be part of the Project justification, there is no obvious high capacity transport link between the Project and the NEIC.
- While the Project is proposing approximately 25 kilometres of new or upgraded walking and cycle paths, the IAC considers that such a large inter-generational Project could, and should, be the driver for additional improvements to active transport.

### **Built environment**

- The Project passes through highly urbanised suburbs which also commonly benefit from well distributed, high amenity open spaces with established landscaping such as in Greensborough, Watsonia, Yallambie and along the Eastern Freeway through Bulleen, North Balwyn and Box Hill North.
- As mentioned, the uncertainty surrounding the Reference Design and the eventual design to be approved has made it difficult to determine the specific impacts in all areas.
- Some areas, such as the Eastern Freeway surrounds, are likely to experience significant amenity impacts from loss of open space and vegetation and far closer proximity of substantial road and related infrastructure. In many areas substantial noise walls will be needed to ensure noise criteria are met.
- In addition, the Reference Design proposal for Greensborough Road is likely to result in sub-standard urban design outcomes for the Watsonia Neighbourhood Activity Centre and its wider context. An extended bored tunnel in the north of the Project to Grimshaw Street, as well as a meaningful reduction in the footprint of the Eastern Freeway expansion, have the potential to significantly reduce impacts on these key areas.

### **Health, amenity and environmental quality**

- The proposed tunnel components of themselves have significant benefit in terms of minimising impacts on communities and the environment.
- The general Project objective for day/evening operational noise levels is consistent with current policy.
- The proposed construction noise management levels are appropriate.
- Special consideration will need to be given to noise from Unavoidable Works.

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<sup>4</sup> Mr O'Brien was a traffic expert called by the BBW Councils.

- Noise to open space should be maintained at appropriate levels to preserve amenity. The IAC has recommended that for open space the predicted levels provided in the EES should not be exceeded.
- The IAC recommends a mandatory night time noise limit and is not convinced that meeting the Project day/evening objective noise level will necessarily achieve the same result.
- Construction noise can be managed to an acceptable level via the application of appropriate controls in the Construction Noise and Vibration Management Plan (CNVMP).
- Noise management of Unavoidable Works will require a clear framework including defined noise management levels and appropriate mitigation measures.
- Some areas near the Project such as the Rosanna Road surroundings are projected to experience significantly improved amenity outcomes from reduced car and truck traffic when the Project becomes operational.
- Some areas such as extensive residential areas bounding the Eastern Freeway are likely to be able to meet noise and air quality objectives but may suffer significant loss of amenity due to a closer roadway, reduced open space and loss of mature vegetation.
- There was considerable discussion in the Hearing about the need for VicRoads (now Department of Transport) to revise and modernise the Traffic Noise Reduction Policy. The IAC notes that the Minister’s Assessment for the West Gate Tunnel Project and Mordialloc Bypass suggested this should be done. It is disappointing that this has not been undertaken and the Department of Transport indicated there is no timing for a review. The IAC considers this significantly undermines confidence in the Victorian community about the management of traffic noise.
- There was significant concern in submissions about air quality along the route from the Project.
- The modelling for roadside and tunnel ventilation exhaust for the Project is conservative and concludes that relevant standards can be met compared to a ‘no project’ scenario; noting that there is general agreement that there is no safe level of exposure to airborne particulates.
- There will be improvements in air quality on many arterial roads and a marginal decline in some locations along the Project corridor.
- The IAC accepts that tunnel ventilation system pollution control equipment is not required to meet current standards. Through the EPRs the IAC has recommended that space for retrofitting pollution control equipment be installed within the tunnel ventilation system in accordance with advice from the EPA; to provide scope for its potential future installation, notwithstanding projected improvements in vehicle technology.

#### **Landscape, visual, and recreational values**

- The visual impacts of structures proposed in the Reference Design will be significant for many sensitive receptors. The Project is likely to have a major impact on open space and parkland in the region, particularly during construction.

- The Urban Design Strategy (UDS) was criticised for being overly generic and not responding to the different landscape, visual and community contexts along the route.
- Further UDS refinement to introduce priorities for infrastructure design will be required before approval and this will be paired with an overarching requirement for Urban Design Framework Plans or similar to be approved as a requirement of the Incorporated Document for key interchanges and interfaces.
- The substantive involvement of the Wurundjeri Woi-wurrung people in the development of the UDS is commended and this partnership should continue through Project development and beyond.
- The Urban Design Advisory Panel (UDAP) process is supported but needs to be refined to give a more substantive role and wider membership to achieve the best possible urban design outcomes for the Project.
- The Project's impact on schools and sporting clubs will be very significant during construction and some key facilities will be acquired. Plans for relocation and other arrangements are being negotiated but ensuring that the Proponent commit to appropriate relocation plans will be essential to measuring the success of the Project post-construction.
- The loss of mature vegetation will have significant medium to long term visual and amenity impacts. Tree and understorey replacement will be undertaken to provide an increase in vegetation long term, but the limitations of the Project boundary are such that only a confined proportion can be replanted near affected areas. In addition, in the interim, the impacts on community health and amenity are likely to be substantial.
- The IAC considers that the continued erosion of recreational areas and open space in areas where access to the natural environment is limited for infrastructure or other uses poses a serious long-term threat to the health and long-term sustainability of urban communities.
- The replacement of all forms of open space on a like-for-like basis is key to mitigating these impacts of the Project. The IAC suggests that the Project is the necessary catalyst to realise the acquisition of land along the Yarra River corridor set aside for open space.

### **Surface water and groundwater**

- The Project has the potential to impact on groundwater and Groundwater Dependent Ecosystems (GDE). The IAC considers that the EPRs should be able to manage these issues provided they are effectively implemented, including monitoring and mitigation if required.
- The Project will have significant effects on waterways through direct relocation and barrelling, and indirectly through possible reduced water quality. The IAC considers these impacts should be able to be managed to acceptable levels through the EPRs, except for the increased barrelling of waterways, for which no mitigation is possible.

### **Ecological impacts**

- The Project will have a large impact on native vegetation and habitat in the established urban area of metropolitan Melbourne and the IAC is not satisfied that this impact can be effectively mitigated and offset.
- While the loss of native vegetation may be less than suggested in the Reference Design, the extent of clearing will not be known until a final design is developed and the native vegetation removal refined.
- The IAC considers the significant ecological values in the Commonwealth Department of Defence Simpsons Barracks should be avoided by identifying this land as a Project “no go zone”.

### **Land use, business and social**

- There are two significant hotspots of business impact: the BIP and the Watsonia Neighbourhood Activity Centre.
- The BIP is to be totally demolished, and while the State significance of the Project may make this loss acceptable, the IAC considers given the unprecedented scale of the loss of a whole industrial area and the particular characteristics of the industrial precinct, it is incumbent on the Proponent and State to mitigate this impact to the maximum extent possible.
- Given the uncertainty inherent in the Reference Design approach the IAC is of the view that the Proponent is not unwilling, but has been unable, to offer the level of assistance required to date. This has led to an unacceptable level of stress and uncertainty for the occupants of the industrial precinct.
- The same principle applies to the businesses in the Watsonia Neighbourhood Activity Centre, where the uncertainty of impact and timing is causing distress to business owners. The long construction period may place businesses in jeopardy in circumstances where acquisition and direct compensation are not available. More will need to be done to assist such businesses through the significant impact period.
- In Watsonia the IAC considers the extended tunnel option would go a long way to reducing impacts on business.
- Some residential owners who may be compulsorily acquired are experiencing distress due to the uncertainty inherent in the Reference Design approach.
- In some cases, the IAC considers there is a strong case for immediate acquisition of residential properties to mitigate the impact of the Project. In other instances where businesses wish to continue to operate for as long as possible from the local area, acquisition should be deferred if possible.
- The IAC also considers there is merit in developing a voluntary acquisition scheme. This would be for adversely affected properties which could be subject to significantly reduced amenity through construction and operation or where occupants may be particularly vulnerable to Project effects.

### Risk assessment

- While reviewing the EES, the IAC noted the risk assessment approach taken by the Proponent by using a 'planned' risk category. This was also drawn to the attention of the IAC by many submitters.
- Using a 'planned' risk category for certain events is not consistent with best practice or Australian Standards and has caused confusion amongst submitters.
- It appears to the IAC that the net effect may mean the impact of some activities that may otherwise attract a 'Very High' risk rating, are not considered for as much avoidance and mitigation as might otherwise be required.
- This is an unconventional approach which should not be encouraged in future project assessments.

### Other issues

- There are other issues where the IAC is satisfied the environmental effects can be addressed through the application of environmental management controls including cultural heritage, surface water and groundwater, ground movement, solid waste and contamination.

### (viii) Consolidated recommendations

The IAC concludes that subject to the recommendations in this report, many of which recommend additional work and investigation, the environmental effects of the North East Link Project should be able to be managed to an acceptable level. The IAC recommends:

- 1. Adopt Amendment GC98 to the Banyule, Boroondara, Nillumbik, Manningham, Whitehorse, Whittlesea and Yarra Planning Schemes subject to:**
  - a) Applying recommended changes to the Incorporated Document in Appendix F to this report.**
  - b) Proposed changes to the Environmental Management Framework to incorporate a statutory auditor within the Independent Environmental Auditor role and requirements under the new *Environment Protection (Amendment) Act 2018* regime.**
  - c) Applying the Environmental Performance Requirements in Appendix G to this report.**
  - d) Amending all schedules to the Design and Development Overlay to:**
    - consolidate design objectives in clause 1.0; and
    - in clause 5.0 after the words "adjoining roads and infrastructure (including underground services and utilities)", add the words "to the extent this information is available within the public domain".
- 2. Include land to be acquired for, or converted to, public open space in connection with the Project in the Specific Controls Overlay. This measure will facilitate the efficient provision of replacement or enhanced community assets including sporting and recreation facilities.**
- 3. The Environment Protection Authority consider the recommendations and Environmental Performance Requirements in this report when determining the Works Approval Application.**

### **Project design elements, the Reference Design and transport**

- 4. Pursue an extended, bored, tunnel option northwards to the vicinity of Grimshaw Street, including a review of the need for the Lower Plenty Road interchange, to:**
  - a) Significantly reduce ecological impacts on critically endangered and threatened species, ecological communities, significant tree canopy, habitat fragmentation and the northern reach of the Banyule Creek.**
  - b) Significantly reduce social, noise, air quality, business, landscape and visual impacts on the community along Greensborough Road and the Watsonia Neighbourhood Activity Centre.**
- 5. Exclude Borlase Reserve as a Tunnel Boring Machine launch/retrieval site given the level of expected amenity impact from noise, dust and spoil haulage for many years proximate to, and nearly surrounded by, a significant residential community.**
- 6. Consider Reference Design alternatives provided in the Hearing during Project design and development including:**
  - a) The Project alternative designs for Watsonia, Lower Plenty Road Interchange, Manningham Road Interchange and Bulleen Road be considered preferentially to the exhibited Reference Design for those components.**
  - b) Providing other alternatives from Ms Hilary Marshall, Mr Fred Buono and Mr Andrew O'Brien to the tenderers for consideration.**
- 7. Ensure the final Manningham Road Interchange design enables:**
  - a) Maximisation of land for post construction industrial/commercial land use**
  - b) Consideration of the design prepared by Ms Marshall (as per 6(b) above).**
  - c) long term retention and viability of the River Red Gum tree on the corner of Bridge Street and Manningham Road.**
- 8. Assess Active Transport complementary projects suggested by submitters to the Environment Effects Statement against Project criteria during Project development.**
- 9. Consider the operation of Rosanna Road including:**
  - a) Adopting alternative routes for spoil haulage during Project construction.**
  - b) Reviewing truck volumes following commissioning of the Project to ascertain if further truck curfews or safety improvements should be put in place.**
- 10. The Department of Transport review the North East Truck Curfew truck routes after Project commissioning to determine whether to extend the curfew to 24 hours on those arterial roads in the vicinity of the Project.**

### **Business impacts**

- 11. The Department of Transport with appropriate expert advice, prepare and implement as a matter of urgency:**
  - a) A package of individual business plans prepared with each business in the Bulleen Industrial Precinct that understands at a fine-grained level their**



current operation, desire to relocate or cease operations, business needs for new sites, preliminary site identification, and practical and reasonable assistance beyond *Land Acquisition and Compensation Act 1986* entitlements to implement these plans.

- b) A package of individual employee assistance plans prepared with and for each employee who requests it, in consultation with the employer, that understands at a fine-grained level their future employment plans, need for training and development, factors that would influence their desire to remain employed with a Bulleen Industrial Precinct business, and practical and reasonable assistance to implement their assistance plan.
12. The Department of Transport, in consultation with the City of Manningham, facilitate providing replacement industrial land in Websters Road, Templestowe, including rezoning the Council green waste site to an appropriate use.

#### Social impacts

- 13. Implement a voluntary acquisition scheme for residential properties impacted by the Project alignment. The criteria for participation in the voluntary acquisition scheme should be developed and should include distance from major works, likely extent and duration of proximate works, predicted adverse effects on amenity and the presence of vulnerable occupants.
- 14. Provide 'like-for-like' open space, parkland, reserves, sport and recreational facilities displaced by the Project during construction and operation of the Project; including, but not limited to, giving effect to long term public open space aspirations for key landholdings in the Public Acquisition Overlay along the Yarra River corridor.

#### Biodiversity

- 15. Designate the Simpson Barracks as a "no-go zone" due to the potential significant environmental effects and re-design that aspect of the Project as per Recommendation 3.
- 16. Submit a revised Native Vegetation Removal Report to the Department of Environment, Land, Water and Planning once the final Project design has been determined. The revised report should include native vegetation (trees and aquatic vegetation) to be potentially impacted by groundwater drawdown and the effects of relocating active open space and community facilities to new locations that have not yet been addressed.
- 17. Acquire all native vegetation offsets prior to construction of any element of the Project requiring the removal of native vegetation, in accordance with the Department of Environment, Land, Water and Planning *Guidelines for the removal, destruction or lopping of native vegetation*.

#### Visual impact, urban design and landscape

- 18. Narrow the Project boundary and consequential road alignment where possible in accordance with Environmental Performance Requirement LP1 and principles of

the Urban Design Strategy. This should be done in particular at critical locations along the Eastern Freeway to provide capacity for acceptable visual, landscape and urban design outcomes, especially in the vicinity of the Koonung Creek linear reserve.

19. Include a set of guiding principles in the Urban Design Strategy to clarify relative priorities for the Project, generally as outlined in Chapter 7.3.3 of this report.
20. Amend the Incorporated Document to require the preparation and approval of Urban Design Framework Plans for the following key locations:
  - a) M80/Greensborough Highway interchange.
  - b) Watsonia Neighbourhood Activity Centre.
  - c) Borlase Reserve and Lower Plenty Road Interchange.
  - d) Manningham/Bulleen Road Interchange.
  - e) Bulleen Road/Eastern Freeway Interchange.
21. The Urban Design Framework Plans recommended in Recommendation 20 should involve input from expert consultants including the Urban Design Advisory Panel, together with consultation with Councils as per the process in the recommended version of the Incorporated Document. Subsequent Urban Design and Landscape Plans must explain how they have responded to the relevant Urban Design Framework Plan.
22. In addition to matters required by the Incorporated Document, the Urban Design Strategy and subsequent amendments should be approved by the Minister for Planning including the following:
  - a) An outline of and response to relevant principles of the *Yarra River Protection (Willip-gin Birrarung Murrong) Act 2017*, the Cultural Values assessment report prepared by the Wurundjeri Woi-wurrung Aboriginal Council and the Yarra Strategic Plan (when released).
  - b) Consideration of the setting and requirements of schools along the Project alignment and surrounds and provide detailed direction to achieve acceptable urban design interfaces with them.
  - c) Reconsideration of which elements of the Place-specific Requirements should be changed from complementary (and optional) to mandatory. At a minimum, this should:
    - include elements that are integral to ensuring the Project achieves relevant strategic objectives, including the Manningham Interchange, biodiversity and habitat links along the Yarra River corridor and opportunities in Water Sensitive Urban Design elements around the Yarra Park lands.
    - facilitate enhancement of local areas in line with Project objectives.
23. Incorporate a broad range of works as an adjunct to the Project that would result in enhanced amenity and functionality for locally affected areas, with priority given to works identified by relevant local councils and submitters.

## Groundwater

24. Undertake a revised groundwater assessment prior to construction commencing to reduce uncertainty regarding the environmental effects of groundwater drawdown on Bolin Bolin Billabong and large trees within and adjacent to the Project area.

## Cultural heritage

25. If works are permitted within the Simpson Barracks, further consultation should be undertaken with the Commonwealth Department of Defence to identify opportunities to relocate and reinstate memorials.
26. The Proponent should continue to assist Aboriginal parties through all stages of the Project to enable their effective participation.

## Further recommendations

In addition to the Project specific recommendations above, the IAC makes a number of recommendations on broader issues raised by the Project environment assessment:

27. The use of a Reference Design for a project of this scale and extent as part of an Environment Effects Statement process in future should only be considered where there is a substantially resolved, well documented Project so that there can be certainty about the nature and extent of environmental effects.
28. The description of a risk or event as 'planned' is not an approach supported by the Australian Standard and should not be used in the risk assessment for future projects assessed by way of an Environment Effects Statement.
29. The Department of Transport should develop a Victorian Transport Plan as required under Section 63(1) of the *Transport Integration Act 2010* to provide an effective framework for consideration of future major transport projects.

## (ix) The report

The report is structured around:

- an outline of the Project
- consideration of the environmental effects by issue (Chapters 3 to 14)
- Project implementation through the Environmental Management Framework (EMF) including the Environment Performance Requirements (EPRs) (Chapter 15)
- the draft planning scheme amendment (Chapter 16)
- integrated assessment of effects at Chapter 17.

Identification of key legislation and policies is included in Appendix A.

The IAC has evaluated Planning Scheme Amendment GC98, including the proposed Design and DDO and associated schedules, the SCO (Schedule 1) and the draft Incorporated Document, April 2019.

In addition, the IAC has considered the draft WAA and makes associated recommendations to the EPA.

**(x) Acknowledgement**

The IAC acknowledges the extensive support provided to it at all stages of the process by staff of Planning Panels Victoria, particularly Amy Selvaraj, Senior Project Officer, Georgia Thomas, Administrative Support Officer and in the early stages Ms Greta Grivas, Senior Project Officer.

## **PART A: BACKGROUND**



# 1 The Project and approach

## 1.1 The Proponent

In December 2016, the Victorian Government announced its commitment to deliver the North East Link Project.

The Major Transport Infrastructure Authority (MTIA), within the Victorian Department of Transport (DoT) is the proponent for the North East Link Project (the Project). The North East Link Project (the Proponent) is an administrative office designated as the proponent for the Environment Effects Statement (EES) process and Project delivery.

## 1.2 The Project

The Project is described at length in the EES. A summary description which includes the core elements is in the Infrastructure Australia business case evaluation:<sup>5</sup>

The project would create a Managed Motorway connection from the M80 Metropolitan Ring Road in the north to the M3 Eastern Freeway in the south through:

- A new 11 kilometre roadway between the M80 at Greensborough and the M3 at Bulleen
- Approximately 2.3 kilometres of upgrades to the M80 between Greensborough and Plenty Road
- Three-lane twin tunnels (5 kilometres) travelling from Lower Plenty Road to south of the Veneto Club in Bulleen
- Five interchanges at the M80, Grimshaw Street, Lower Plenty Road, Manningham Road, and the M3
- Upgrades to the Eastern Freeway between Springvale Road and Chandler Highway with up to eight new lanes
- Around 10.6 kilometres of bus lanes between Doncaster and Hoddle Street ('the Doncaster Busway').

The project also includes new walking and cycling paths, upgraded and new noise barriers along the Eastern Freeway, and a Freeway Control Centre for controlling traffic and managing operations.

The project includes the systems and infrastructure to enable tolling, operation as a Managed Motorway, and integration with connecting roads. Modernisation of the Eastern Freeway is a core element of the project to ensure the freeway integrates effectively with the North East Link and keeps pace with increasing traffic volumes and changing travel demands. The proponent has stated that the North East Link will be tolled.

Key elements of the Project are shown in the figures below.

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<sup>5</sup> From <https://www.infrastructureaustralia.gov.au/map/north-east-link>, Project Evaluation Summary, 18 October 2018, page 3.







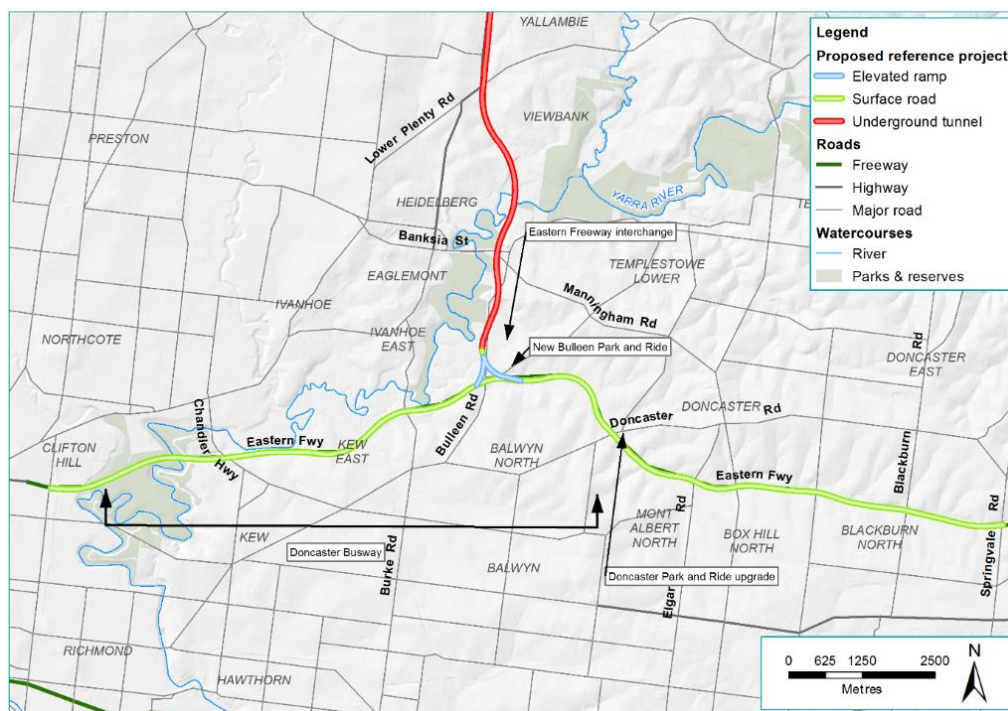


Figure 3 Eastern Freeway element<sup>8</sup>

### 1.3 Project rationale

The EES identifies that there is no freeway-standard connection for cross-city orbital movements between the M80 Ring Road, the Eastern Freeway and the northern end of EastLink.<sup>9</sup> Currently, this traffic predominately uses arterial roads that experience significant and increasing congestion.

The Project rationale for the EES identifies three key challenges for transport connectivity in the north-east corridor:<sup>10</sup>

- Melbourne's poor orbital connectivity is constraining the economic potential of the city and Victoria
- Inefficient freight movement between the north and south-east of Melbourne is limiting supply chain competitiveness and hindering the growth of high value industries
- Congestion and heavy vehicles on neighbourhood roads in the north-east is harming liveability and community wellbeing.

These challenges are compounded by Melbourne's increasing population, expected to reach nearly eight million people by 2046,<sup>11</sup> with the outer suburbs projected to experience highest overall growth levels.

<sup>8</sup> EES Executive Summary, Figure 5, page 15.

<sup>9</sup> EES Chapter 6.1.

<sup>10</sup> EES Chapter 2, Project Rationale at 2.3.1 to 2.3.3.

<sup>11</sup> Document 83, Part 1, Victorian in Future (VIF) in NELP Slide 10 (7.931 million by 2046).

## 1.4 Corridor assessment and business case

### 1.4.1 The options

Potential corridor options for an enhanced road linkage were explored from early 2017, distilled from a broad set of potential alignments. Four corridor options (Options A, B, C and D) are identified in Figure 4 based on documented Project objectives and constraints.<sup>12</sup> Other options were identified further west, but were not pursued given the potential to attract trips to central Melbourne that would be better served by either public transport or existing roadways. Likewise, a surface road only option was discounted due to environmental and residential constraints in the North East corridor.



Figure 4 North East Link potential corridor options<sup>13</sup>

### 1.4.2 Option selection

The process for determining the most suitable corridor involved a three-stage approach as documented in Chapter 6.3.3 of the EES.

Option D was not selected as:

- the route was regarded as too long and circuitous to address existing or future travel patterns (to attract enough trips from the existing arterial road network in the north-east)
- rural conditions including steep terrain are not favourable for new freeway connections

<sup>12</sup> EES Chapter 6.3.

<sup>13</sup> EES Chapter 6.3.5, Figure 6-4, page 13.

- the location outside the Urban Growth Boundary (UGB) was regarded as a limitation on improved access for business and employment considering low population densities.

Option B was not favoured because:

- it was likely to attract more east-west orientated trips and had limited capacity to relieve the north-south arterial road network
- interchanges would have unbalanced spacing, increasing travel distances to ‘feeder roads’ to the new freeway
- utility services would be impacted significantly (including high voltage power lines)
- Project cost would be affected by extensive tunnelling requirements.

Following this, Option C was discounted because:

- available connections to the existing arterial road network were considered not well suited to projected traffic volumes, with expected lower rates of usage and less redirection from the existing arterial network
- the route would provide limited support for medium distance cross-city trips
- integration with the strategic arterial road network through the north-east, would be sub-optimal
- elements of the route would traverse the Urban Growth Boundary, with potential to increase development pressures contrary to policy
- Project cost would increase due to tunnelling requirements.

### **1.4.3 The preferred option - Corridor A**

Option A was ultimately announced by the Government as the preferred corridor in 2017. It considered that Option A performed significantly more effectively in response to the documented Project objectives and guiding principles.

Key influences were perceived benefits to the transport network, the capacity to remove more vehicle trips from local roads and the significant projected more economical ‘whole of life’ cost. In summary, the corridor depicted in Option A was considered to provide:

- the best opportunity for connections to the existing arterial road network to respond to travel demand and to reduce pressures on key arterial roads
- improved connectivity for freight journeys, serving more extensive freight catchments along critical routes
- the closest most direct connection to areas of increased activity (including major activity centres and the La Trobe National Employment and Innovation Cluster (NEIC), to facilitate improved access to employment and services
- Eastern Freeway enhancements to improve capacity and connectivity to cater for future growth
- an opportunity to facilitate a Doncaster Busway along the Eastern Freeway
- an enhanced opportunity for expanded walking and cycling facilities in the area.<sup>14</sup>

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<sup>14</sup> See Assessment of Corridor Options at 6.3.5 of the EES.

The Proponent undertook an option refinement process to identify the optimal solution for Corridor A. Several road options were considered including:

- a tunnel from the M80 Ring Road to the Eastern Freeway with no interchanges at the major crossroads (a bypass freeway)
- other design iterations including freeway interchange configurations and other road tunnel configurations.

#### **1.4.4 The Business Case**

The Business Case for the Project was released in mid-2018.<sup>15</sup> The Project was assessed as having a risk adjusted Benefit Cost Ratio (BCR) of 1.4.<sup>16</sup> Sensitivity testing suggested that if a more realistic discount rate in the current low interest rate environment of 4 per cent was applied (instead of 7 per cent), then the BCR for the Project would be 2.7,<sup>17</sup> a very significant benefit over costs.

The Inquiry and Advisory Committee (IAC) does not interrogate the Business Case or the options assessment process as part of this Inquiry because the focus in accordance with the Terms of Reference is on Corridor A. In addition, the IAC considers there was not enough information available to it to review the effects of alternative corridors on the information put to it. It is however worth recording that submissions were critical of the Business Case and options assessment. For example, the Corridor options from the EES as shown in Figure 4 above show a dotted line for works on the Eastern Freeway.

This is not apparent in figures in the Business Case which show the Option A route ending at the Eastern Freeway.<sup>18</sup> Section 6.4 in the Business Case does describe works on the Eastern Freeway: *Eastern freeway modernisation*.<sup>19</sup> The language used, while technically correct, gives no indication of the scale of widening of the Eastern Freeway east of Bulleen; that only became apparent when the EES was released.

### **1.5 Key elements of the Project approach**

#### **1.5.1 The Reference Design**

##### **(i) Background**

Over the past decade, the use of a 'Reference Design' has emerged for State government infrastructure projects that are subject to an impact assessment process either under the *Environment Effects Act 1978* (EE Act) or the *Major Transport Projects Facilitation Act 2009* (MTPF Act).

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<sup>15</sup> <https://northeastlink.vic.gov.au/publications/businesscase>

<sup>16</sup> Business Case Appendix Q1, Table 24, page 62.

<sup>17</sup> Business Case Appendix Q1, Table 24, page 67.

<sup>18</sup> For example, see Figure 5-1 in the Business Case Chapter 5.

<sup>19</sup> Business Case Chapter 6, page 6-11.

The Melbourne Metro Tunnel EES referred to a 'Concept Design' that was used to assess the environmental impacts of that project. A 'Reference Design' was used in the East West Link Project, which was a declared project under the MTPF Act and assessed under the Comprehensive Impact Statement (CIS) provisions of that Act.

'Reference Design' is not a term found within the relevant legislation. The IAC understands a Reference Design is a broader concept of a Project boundary within which the Project could occur combined with a potential design for works within that boundary.

The Project boundary is identified in the EES. It extends beyond the proposed road alignment since it defines the area within which the Project *may* be developed or delivered. It encompasses all areas identified for potential use for permanent structures, temporary construction areas and areas for potential minor road and rail works. It has also been used as the basis for assessing potential vegetation removal.

The EES Scoping Requirements provide that the EES for this Project may assess the effects of a concept or Reference Design for the Project with the ultimate design to be developed at a later stage.<sup>20</sup>

The EES states:<sup>21</sup>

The reference project represents a feasible means by which the project could be designed, constructed and operated. It forms the basis of the impact assessments in this Environment Effects Statement (EES) and has been used to develop the environmental performance requirements (EPRs) for the project, setting the environmental outcomes that must be achieved by the project, irrespective of the ultimate design solution selected for the project.

The Proponent explained to the IAC that:<sup>22</sup>

It is important to recognise that a Reference Design is a tool to facilitate the assessment of potential environmental effects and that it does not necessarily constitute the only means by which the Project could be delivered.

The actual design will be developed by the successful project consortia. The degree to which the final design will be like the Reference Design is unknown but major project elements such as tunnels and interchange works are likely to be similar.

## **(ii) Submissions and evidence**

Most EES's, and most likely all non-government projects, would assess a project comprising a detailed design. The use of a Reference Design is a much more recent tool used to assess large Victorian State infrastructure projects within the past decade.

Submissions criticised the adoption of a Reference Design for the Project to inform the assessment of its environmental effects. The BBW and Manningham submitted:

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<sup>20</sup> EES Scoping Requirements June 2018, page 8.

<sup>21</sup> EES Chapter 8, Volume 1, page 8-1.

<sup>22</sup> Document 34a, paragraph 25.

The assessment of the true effects of the Project are made that much more complex, by the fact that the Project itself is no more than a “Reference Design”. This complexity is compounded by the need to prepare “performance measures” to prescribe the outcomes sought to be achieved, the details of which are not yet known.<sup>23</sup>

The Proponent’s Part A<sup>24</sup> submission provided the following response to such submissions:

The adoption of a Reference Design to inform the assessment of environmental effects has been criticised in a number of the submissions. While it is true that the ultimate configuration of the Project may differ in certain respects from the reference project, the proper question for present purposes is not whether there is scope for this to occur, but instead whether the reference project adopted for the purposes of the EES is an effective tool to assess the likely environmental effects of the Project as declared.

When referring to the use of a Reference Design for this EES, the Proponent suggested:<sup>25</sup>

While every project is different, and each has the capacity to give rise to a range of different social, economic and environmental effects, the recent assessments of other major transport projects provide guidance concerning how to assess the environmental effects and broader planning merits of projects of this type including:

- (a) The means by which relevant environmental risks can be identified and quantified;
- (b) The appropriate use of a reference project as a tool to inform the assessment of the environmental effects;
- (c) The proper function and structure of governance regimes;
- (d) The role that environmental performance requirements should play within those regimes;
- (e) The central role that consultation plays in the effective identification and assessment of environmental effects; and
- (f) The reliance on independent peer review in the preparation and documentation of technical analyses within an EES.

These matters have informed the preparation of the EES.... it also constitutes best practice for the assessment of environmental effects undertaken in respect of major projects within Victoria.

Mr O’Brien, traffic engineering expert for the BBW Councils, explained that:<sup>26</sup>

The *Reference Design* is a design for the NEL that shows how the project could connect the Eastern Freeway, M80 and Greensborough Bypass. However, the Reference Project is only a concept design, which shows a potentially feasible way to achieve the Victorian Government’s aim for providing such a connection. There is no guarantee that the winning consortium chosen to build the link would utilise a similar design. This introduces a significant challenge in assessing the transport risks and impacts of the project, as the impacts of variations could alter traffic flows significantly.

<sup>23</sup> BBW Councils submission 716 at 1.32.

<sup>24</sup> Document 34a, paragraph 177.

<sup>25</sup> Document 34a, paragraphs 21 and 22.

<sup>26</sup> Document 28a Mr O’Brien’s Expert Witness Statement, page 11.

Even if the winning consortium intend to utilise the Reference Design as a basis of their design, it is likely that major changes would be needed to address non-transport impacts, which may thus have cumulative impact on the traffic impacts. Also, the Reference Design for the Project, as designed, may not be acceptable...

The Proponent's surface water expert, Mr Fuller, suggested that Reference Design use was satisfactory, stating:<sup>27</sup>

During the peer review process it was evident that the Reference Project is not a detailed design and there are additional stages of design to follow. My understanding is the Reference Project is an initial design to test the environmental effects and the adequacy of the EPRs. The results of the modelling along with the EPRs were in my opinion sufficient to demonstrate that the flood impacts arising from the development could be managed in consultation with approving authorities during the more detailed stage(s).

Others, such as Mr Buono (SMART<sup>28</sup> taxpayer design) found the Reference Design frustrating:<sup>29</sup>

The Banyule Community is supportive of having a North East Link, and is prepared to accept the chosen alignment, but cannot accept an imposed Reference Design Concept that not only fails to deliver on their aspirations, but would actually degrade their Community and psychological wellbeing, unlike the Community driven SMART Taxpayer Design.

The Councils suggested that in some instances a Reference Design can be used for EES' and cited the Edithvale and Bonbeach level crossing removals and the Mordialloc Bypass as examples where Reference Designs had been refined to the point where they were to a large extent, complete indications of the ultimate design to be progressed. However, the Councils suggested that the Project's Reference Design makes assessment of the environmental effects of this Project impossible.<sup>30</sup>

### (iii) The IAC response

The IAC partly agrees with the Proponent that:

...as in the case of other recent environmental assessments, the adequacy and robustness of the proposed regulatory framework, of which the Environment Management Framework and Environment Performance Requirements constitute critical components, should be a primary focus of the IAC's inquiry.<sup>31</sup>

However, the IAC contends that its *primary* role<sup>32</sup> is to assess whether the EES has adequately investigated and reported the environmental effects of the Project in order to determine and make recommendations to the Minister for Planning as to whether its effects are acceptable, including with mitigation through the EPRs. In this setting, it is critical for

<sup>27</sup> Document 24e Mr Fuller's Expert Witness Statement, page 4.

<sup>28</sup> Save My Areas Residents and Trees.

<sup>29</sup> Document 421, page 4.

<sup>30</sup> Document 374, paragraphs 65 – 77.

<sup>31</sup> Document 34a, paragraph 33.

<sup>32</sup> In addition to considering the PSA and WAA.



enough rigour and certainty to be provided through the Reference Design proposed as a framework for assessing environmental impacts.

Given the approach of assessing a Reference Design rather than an actual project, the EPRs become more critical in determining how the eventual project can be delivered within an acceptable framework, including ongoing monitoring, management and reporting.

By way of contrast to the North East Link Project, in the West Gate Tunnel Project, the Assessment Committee reviewed a Project which had been developed to the detailed design stage. The benefits of this approach for environmental assessment were noted.<sup>33</sup>

The WDA noted that the assessment of the Project is significantly different to the recent East West Link and Melbourne Metro Rail Projects (MMRP) in that a specific project design rather than a reference project is available. The benefits of this include:

- There is a high level of certainty as to the alignment of the Project;
- There is a well well-developed urban design concept for the Project;
- The impacts of the Project can be readily assessed by the various technical Experts without speculation or opinion as to ultimate design or alignment;
- The statutory approval mechanisms including the EPRs can be framed in the Context of a highly resolved set of base plans; and
- The EPRs and plans can be explicitly referenced in the planning approval Governing the Project's development implementation.

The Assessment Committee for the East West Link Comprehensive Impact Statement raised issues with the use of a Reference Design. It considered submissions relating to the use of a reference design and highlighted some of the difficulties it encountered when grappling with an assessment of the environmental impacts of a 'reference project'.<sup>34</sup>

On a more general level, and regardless of any legal issues, there is no doubt that the use of a 'Reference Project' approach has caused considerable difficulty and angst for the Committee, other parties and the community.

As the Reference Project is a concept and not a 'real' project, it has made it difficult to fully assess the impacts of the Project, as they may occur or not, depending on whether the final Project is quite similar or very different to the Reference Project. In practical terms this has caused the following issues:

- Lack of certainty on key technical issues such as tunnelling approach leading to difficulty in fully assessing potential impacts;
- Lack of certainty on other issues such as social and economic effects;
- The generation of significant community concern and stress about Reference Project elements that may not be in the final Project.

The approach has also led to difficulties for expert witnesses from the LMA and other parties who have tried to provide an expert opinion based on a Reference Project whose impacts, as far as they can be assessed given the uncertain design, may be significantly different to the final Project.

The Committee considers that in a high intensity urban environment such as that to be encountered by the Project, a more transparent, measured and structured approach to

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<sup>33</sup> West Gate Tunnel Inquiry and Advisory Committee Report page 10.

<sup>34</sup> Pages 55-60.

options identification and discussion with the community would have resulted in a superior process and Project outcome.<sup>35</sup>

The IAC sees potential merit in the use of a Reference Design for some large complex State government projects. However, like the East West Link Project Assessment Committee, the use of a Reference Design for the North East Link Project has caused substantial difficulty for the IAC, other parties and the community in properly understanding the likely scope of the Project and its potential environmental effects.

If a Reference Design process is to be used in the future, the IAC considers there needs to be a more rigorous assessment leading to refinement of the Reference Design prior to it being subject to an exhibited EES process so that the overall environmental effects of the Reference Design can be properly assessed and understood. That is consistent with the proper role of the EES.

The IAC notes the joint Council submission that states “*what stands for adequate (let alone Best Practice) environmental assessment of projects of this scale in this case will be the measure for other cases in the future*”.<sup>36</sup> The IAC agrees with the Councils’ submission that the use of a Reference Design for environmental assessment in the future should consider a number of factors:

- the nature and complexity of the project in question
- the extent to which the Reference Design has been refined and the extent of certainty about its likely final design
- the extent to which it is possible to identify the likely environmental effects of the Project based on the Reference Design.<sup>37</sup>

## 1.5.2 Risk Assessment Guiding the EES

### (i) Background

The EES explains that an environmental risk assessment was carried out for the Reference Design in general accordance with the risk process guidance outlined in section 5 of the Australian Standard *AS/NZS ISO 31000:2009, Risk management – Principles and guidelines* to inform preparation of the EES and development of the EPRs.

The EES states:<sup>38</sup>

The results of the risk assessment have helped to focus the impact assessment and informed development of the reference project and measures to avoid, mitigate and manage environmental risks and impacts.

A range of risk pathways were identified and assessed by specialists during the EES process. The initial risk assessment rated these risk pathways as planned, very low, low, medium, high or very high.

<sup>35</sup> East West Link AC report pages 55-60.

<sup>36</sup> Document 91, paragraph 71 page 9.

<sup>37</sup> Document 374, paragraph 68, page 22.

<sup>38</sup> EES Attachment III – Risk report page III-2.

The risk assessment for the North East Link EES included “planned events”, described as “events with outcomes that are certain to occur (i.e. planned impacts such as land acquisition), as distinct from risk events where the chance of the event occurring and its consequence is uncertain.”<sup>39</sup>

### Planned Events in the Risk Assessment

The risk assessment forms a key component of the EES. It has three main roles:

- to focus the impact assessment
- inform the development of the Reference Design
- guide the development of measures to avoid, mitigate and manage the environmental risks and impacts of the Reference Design.

The risk report states:<sup>40</sup>

Following risk treatment most risks were identified as either very low, low or medium risks. No risks were identified as having a high or very high residual risk. Planned events had consequence ratings ranging from negligible through to major and were assessed further through the impact assessment process.

The risk table from the risk assessment is presented below.

Likelihood	Consequence				
	Negligible	Minor	Moderate	Major	Severe
Rare	Very low	Very low	Low	Medium	Medium
Unlikely	Very low	Low	Low	Medium	High
Possible	Low	Low	Medium	High	High
Likely	Low	Medium	Medium	High	Very high
Almost certain	Low	Medium	High	Very high	Very high
Planned	Planned (negligible consequence)	Planned (minor consequence)	Planned (moderate consequence)	Planned (major consequence)	Planned (severe consequence)

**Figure 5 EES Risk assessment matrix<sup>41</sup>**

In response to the IAC’s request for further information<sup>42</sup> regarding the use of “planned events/risks” in the risk assessment, the Proponent provided the following explanation:<sup>43</sup>

The risk assessment framework distinguishes between planned events and risks. This is because some impacts would definitely occur if the project proceeds while others may or may not occur and can be assigned a likelihood level. This distinction is considered to be useful as it provides greater transparency on the nature of the potential impacts associated with the project.

<sup>39</sup> EES Attachment III – Risk report page III-16.

<sup>40</sup> EES Attachment III risk report page III-2.

<sup>41</sup> EES Chapter 4, Figure 4-5, page 4-10.

<sup>42</sup> Document 5.

<sup>43</sup> Document 44.

**(ii) Submissions**

Friends of Banyule was quite critical of the Proponent's approach to risk assessment:<sup>44</sup>

NELP have reinvented the accepted risk matrix and introduced **Mauve** to indicate when an impact is certain, when an impact will happen despite mitigation attempts or best practice. **MAUVE** is the **NEW RED** in the NELP Risk Assessment Framework. The mauve colour is being used to indicate medium, high or very high impacts. In some risk matrices high is called significant or severe, while very high is called catastrophic or critical.

One can only assume that the word planned has been used to hide the fact that the Project results in severe detrimental impacts...

The NELP planned Event category does not accord with accepted Risk Management practice and certainly is not in accord with either Australian Standard AS/NZS ISO 31000:2009, Risk management – Principles and guidelines or AS/NZS ISO 31000:2018, Risk management – Guidelines...

It is highly unusual and misleading for a Government Agency such as North East Link Project, to replace the accepted Risk Assessment nomenclature of very low, low, medium, high and very high or catastrophic with Planned.

The IAC asked DELWP Biodiversity whether the risk assessment process in the EES for native flora and fauna was considered acceptable<sup>45</sup> and DELWP responded that the approach is inconsistent with standard practice. DELWP stated:

The activity of clearing of native vegetation itself is a planned activity. However, what is required to be assessed from a risk perspective is what the risk of that activity is to a range of ecological values. For example, risk ECO1 – land clearing during construction impacting threatened flora and ecological communities. We agree that the activity of land clearing is planned, however what is the risk to threatened flora and ecological communities? The likelihood based on impacts to Matted Fax-lily and Studley Park Gum is almost certain. The consequence should be moderate-major, which would give a risk rating of high-very high...

The use of 'planned' is also not applied consistently. For example, aspects such as construction noise and groundwater dewatering are also planned events that are not possible to avoid. However, the risks associated with these activities have been assessed in a standard manner.<sup>46</sup>

In his evidence to the IAC, Dr Lorimer for BBW Councils stated that by categorising the greatest risks as 'planned' discourages reconsideration of avoidance and minimisation.<sup>47</sup>

Dr Stubbs, social impact expert for Manningham, was the only expert that provided a response to the risk assessment approach. She said that the approach to "planned events" in the risk assessment "*is not helpful*" and "*that all impacts should be properly considered and understood on effected communities*". Dr Stubbs stated that the use of 'planned' risks or events should be subject to the same hierarchy of risk response and internalisation of

<sup>44</sup> Document 224e, paragraphs 55 – 61.

<sup>45</sup> Document 19.

<sup>46</sup> Document 93, paragraphs 4.2 and 4.4.

<sup>47</sup> Document 265b, slide 8.

costs as ‘non planned’ events. She suggested in her evidence that the use of ‘planned events’, although severe, seemed to look as though they are acceptable.

In responding to these submissions, NELP in closing explained that assigning an event as a ‘planned’ event did not mean its consequence was not assessed and also did not mean its impacts were not assessed. They stated:

...any “planned event” with a consequence of “minor” or above was subjected to a more thorough impact assessment process, with options for additional or modified EPRs or design changes considered where practicable.<sup>48</sup>

### **(iii) The IAC response**

The IAC understands how the risk assessment has been utilised to inform the overall impact assessment and acknowledges that ‘planned events’ does not necessarily mean they were not assessed in the impact assessment. As noted by NELP in closing,<sup>49</sup> there is a distinction between a risk and an impact, which the IAC understands. The IAC generally agrees with the use of *AS/NZS ISO 31000:2009, Risk management – Principles and guidelines*. However, the use of the term ‘planned events’, which is not contained in *AS/NZS ISO 31000:2009* that the EES states it has used for the risk assessment, has caused some confusion and misunderstanding for some submitters.

For example, the Proponent stated that native vegetation removal was designated as a ‘planned event’ in the EES, recognising that it is not possible to avoid its removal. The risk table in Attachment III of the EES presents that for risk ECO1 ‘Land clearing during construction impacting threatened flora and communities’ the risk level is ‘planned’. Instead, the IAC considers this should have been presented as a ‘very high’ risk because there will need to be significant vegetation removal, but avoidance and minimisation required under policy will reduce the total amount of vegetation removal necessary.

Although the IAC understands how the risk assessment was used for NELP, other EES’ in Victoria, including those that are accompanied by reference designs, have not used this methodology of ‘planned events’ and risks. The IAC agrees with Dr Stubbs that the use of ‘planned events’ is not helpful, and is not consistent with the Australian Standard.

The IAC considered submissions calling for the Proponent to prepare an updated risk assessment to address this deficiency. On balance, it is satisfied by the end of the Hearing process that the risks are sufficiently well understood for it to prepare its report. Section 27.4 ‘Risk Assessment’ of the Environmental Management Framework (EMF) suggests that contractors would be required to develop a risk management process for use throughout the project delivery phase. The process would be required to be consistent with *AS ISO 31000:2018 Risk management – guidelines* and to consider the risks and impacts identified during the EES process.<sup>50</sup>

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<sup>48</sup> Document 434, pages 24 -25.

<sup>49</sup> Document 434, page24.

<sup>50</sup> EES Chapter 27, Volume 4 of 4, page 27-8.

The IAC recommends the contractor concentrate on the process in *AS ISO 31000:2018 Risk management – guidelines* or other equivalent Australian Standard to undertake the risk assessment rather than the use of ‘planned events’ as presented in the exhibited EES for the Project.

### 1.5.3 The Transport Integration Act

#### (i) Background

The *Transport Integration Act 2010* (TIA) is the main legislation for transport in Victoria. Its aim is to develop:<sup>51</sup>

An integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible state.

The TIA has objectives for the transport system based around:<sup>52</sup>

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

The TIA also requires the preparation of a Victorian Transport Plan.<sup>53</sup> Under the TIA:<sup>54</sup>

The transport plan must—

- (a) set the planning framework within which transport bodies are to operate;
- (b) set out the strategic policy context for transport;
- (c) include medium to long term strategic directions, priorities and actions;
- (d) be prepared having regard to the vision statement, transport system objectives and decision making principles;
- (e) be prepared having regard to national transport and infrastructure priorities;
- (f) demonstrate an integrated approach to transport and land use planning;
- (g) identify the challenges that the transport plan seeks to address;
- (h) include a short term action plan that is regularly updated.

#### (ii) Submissions

Many submissions were critical of the Project against the TIA objectives, suggesting that the Project did not adequately address the objectives. The Proponent submitted that it is not necessary for a single project to meet all the sustainability requirements of the TIA, and that

<sup>51</sup> Quoted from EES Chapter 2, Section 2.4.2.

<sup>52</sup> In Division 2.

<sup>53</sup> At Section 63.

<sup>54</sup> Section 63(2).

the Victorian Government is undertaking a broad range of transport projects including rail, bus and road.<sup>55</sup>

The Proponent also confirmed that a Transport Plan under the TIA has not been prepared since the Act came into force.<sup>56</sup> The DoT confirmed that the 2008 *Victorian Transport Plan* has been superseded.

### **(iii) The IAC response**

The lack of a Transport Plan was also raised as an issue in the West Gate Tunnel Inquiry, with that IAC concluding:<sup>57</sup>

Without such a plan, it is difficult to put this Project, and other major transport projects, into a logical context for the community to understand the transport system that is desired. Such a plan would be useful in understanding how this and other projects sit within the bigger transport picture to provide a clear vision for Victoria's transport future. It would also greater confidence to the community that while a single project may not meet all of the transport objectives, there are other strategies in place to do so.

In the IAC's view nothing has changed since this was written two years ago. Why a Transport Plan, which must be prepared under the TIA, has not been prepared is not clear and an answer has not been forthcoming.

The risk in not having such a plan, is that while there are many worthwhile projects being constructed and considered, there appears to be little community confidence that individual projects are coming forward in a logical and integrated progression. It is hard to sensibly have the discussion about transport mode share without such a logical framework.

The IAC considers that the Project would achieve a high proportion of transport objectives in the TIA including facilitating economic prosperity (especially at the State level) and improving access to transport and network efficiency. Many of these objectives align with elements in the Scoping Requirements.

However, the IAC has concerns about the extent to which the Project as currently proposed would meet certain other transport objectives which include contributing to environmental sustainability (including avoiding, minimising and offsetting harm to the local environment), integrating transport and land use effectively and improving the amenity of communities while minimising impacts on adjacent land uses. The consolidated recommendations in this report are targeted to improving the Project's performance against the full range of objectives in the TIA.

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<sup>55</sup> Document 34a, para 170 onwards.

<sup>56</sup> Document 34a, para 203.

<sup>57</sup> West Gate Tunnel Inquiry and Advisory Committee Report, page 17

## 2 The Inquiry process

### 2.1 Outline of statutory framework

The EES outlines the legislative framework for the Project.<sup>58</sup> The Project requires both State and Commonwealth assessment and approvals; this report only addresses State approvals. The processes are outlined in Figure 6 below. A summary of the main legislative and policy instruments is provided in Appendix A.

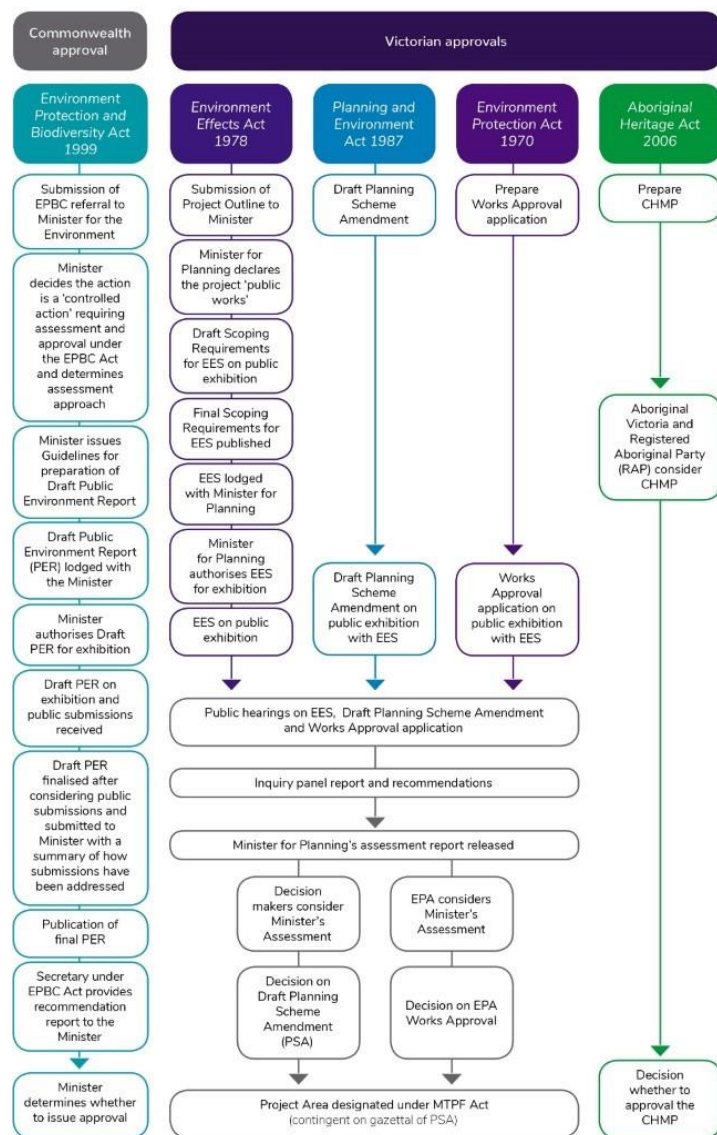


Figure 6 Commonwealth and Victorian approvals processes<sup>59</sup>

<sup>58</sup> In Chapter 3.

<sup>59</sup> EES Chapter 3.3, Figure 3-2, page 15.



## 2.2 The Inquiry and Advisory Committee

On 2 February 2018 the Victorian Minister for Planning declared the Project to be ‘public works’ under section 3(1) of the EE Act. This triggered the requirement to prepare an Environment Effects Statement (EES) to inform the Minister’s Assessment of the Project and other decisions in respect of it.

In June 2018, the Minister issued Scoping Requirements for the Project EES (Scoping Requirements) which set out the specific environmental matters to be investigated and documented in the Project’s EES.

The Minister appointed an IAC on 11 April 2019 under section 9(1) of the EE Act and section 151 of the *Planning and Environment Act 1987* (PE Act) to inquire into, and report on, the Project in accordance with a Terms of Reference. The Terms of Reference are contained in Appendix B.

The IAC was:

- Mr Nick Wimbush (Chair)
- Ms Dalia Cook (Deputy Chair)
- Mr Peter Edwards
- Ms Mandy Elliott
- Ms Elizabeth Hui.

Clause 46 of the Terms of Reference permits the IAC to seek advice from experts as necessary. The IAC sought advice from:

- Mr Stephen Axford – urban design
- Mr Craig Barker – tunnelling, hydrogeology and geomechanics
- Ms Catherine Wilson – air emissions and air quality.

The IAC retained Ms Marita Foley as Counsel Assisting in accordance with Clause 44 of the Terms of Reference.

## 2.3 The IACs role

The Terms of Reference Clause 1 establishes the role of the Inquiry, to:

- Review and consider the EES and public submissions received in relation to the environmental effects of the Project.
- Consider and report on the potential environmental effects of the Project, having regard to the evaluation objectives in the EES Scoping Requirements.
- Identify any measures it considers necessary to avoid, mitigate or manage the environmental effects of the Project.
- Provide advice to the Environment Protection Authority (EPA) that can be used to inform its consideration of the Works Approval Application (WAA).

The Terms of Reference Clause 2 establishes the role of the Advisory Committee, to:

- Provide a report to the Minister for Planning as to whether the draft Planning Scheme Amendment (PSA) contains provisions and controls that are appropriate for the Project.
- Recommend any changes to the draft PSA that it considers necessary.

The Terms of Reference Clause 31 requests the IAC to produce a written report containing findings and recommendations relating to the environment effects of the Project and its capacity to achieve acceptable environmental outcomes. A specific response to Clause 31 is included in the Integrated assessment in Chapter 17.

This report responds to the IAC's Terms of Reference as an EES Inquiry and Advisory Committee.

## 2.4 Consultation and public exhibition

The *Ministerial guidelines for assessment of environmental effects* under the EE Act contain a specific objective “to provide public access to information regarding potential effects as well as fair opportunities for participation in assessment processes by stakeholders and the public”. This is reinforced in Section 2.4 of the Scoping Requirements for the Project EES.

Chapter 5 of the EES outlines the communications and engagement program undertaken by the proponent in conjunction with stakeholders and the broader community. Further details are contained in Attachment IV of the EES – Stakeholder Consultation Report.

Consultation to date has principally occurred in two stages.

- Stage 1 (2017) involved corridor selection and development of the Project Business Case.
- Stage 2 (2018-mid 2019) involved the preparation and exhibition of the EES.

In addition to published materials, information sessions and workshops, other notable elements of the consultation process included:

- establishment of a North East Link Council Communications Working Group
- involvement of two Community Liaison Groups and Community Technical Discussion Groups
- formulation of an Urban Design Advisory Panel (UDAP) in partnership with the Office of the Victorian Government Architect as a body with an ongoing role in the implementation of the Project, especially the Urban Design Strategy (UDS) forming Attachment II to the EES.
- collaboration with Traditional Owners, the Registered Aboriginal Party (RAP) and other Aboriginal groups.

This culminated in public exhibition of the EES, WAA and draft PSA between 10 April and 7 June 2019.

The EES confirms that further consultation (Stage 3) is proposed in respect of procurement, early works and construction from late 2019.

## 2.5 Submissions

A total of 874 submissions were received from:

- Local councils including the BBW Councils as a group, Manningham City Council, Yarra City Council, Maroondah City Council and Nillumbik Shire Council
- Government agencies and Departments including the EPA, VicRoads, DoT, Melbourne Water, Parks Victoria and Yarra Valley Water.

- Interest groups, community and cultural organisations, educational facilities and local sporting and recreation clubs
- Commercial and business operators
- Individuals.

The full list of submitters is in Appendix C to this report.

Some submitters expressed concern that the consultation process had not been entirely transparent or genuine, suggesting pre-determined outcomes. Many emphasised that the Reference Design representing the Project did not provide enough detail to identify likely impacts with certainty.

A high proportion of submitters regarded the Project as providing a necessary link in the Victorian infrastructure network. However, they urged the IAC to conclude that the impacts of the Project were excessive and disproportionately distributed, with the greatest adverse impacts for those in the local area. Some requested significant changes to the Reference Design and enhancement of the draft Environmental Performance Requirements (EPRs) to manage effects appropriately.

In summary, submissions identified potential impacts over three key timeframes, short, medium and long term:

- the anxiety and disruption caused by an imminent major road project in the local area
- the challenges of an extensive construction period over large tracts of land in a largely urban area
- operational effects once the new and upgraded roadways are commissioned.

The proponent prepared a summary report of key categories and themes derived from submissions to guide the IAC<sup>60</sup> consistent with Section 3.2 of the Scoping Requirements. The submissions have been read in full by the IAC and considered irrespective of whether the submitter presented at the Hearing. Key issues raised by submitters are outlined below in summary form.

### **2.5.1 Justification for the proposed route and method of delivery**

Many submitters suggested that the options assessment for the Project which resulted in the selection of Option A as the basis for the Reference Design was flawed, generally preferring Options B, C or D (refer to Figure 4 showing the different corridors).

Submitters also raised in-principle concerns about the Project's capacity to entrench motor vehicle use, in preference over public transport and other more active transport options. They regarded this as an inefficient use of major project expenditure and inconsistent with contemporary planning objectives. Some pointed out that it was not appropriate for the Project to proceed in advance of an Integrated Transport Plan for Victoria.

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<sup>60</sup> Document 16.

## 2.5.2 Traffic impacts and changes to pathway networks

A portion of submitters acknowledged the potential benefits of the Project in reducing traffic congestion on arterial and local roads including a reduction in heavy vehicle traffic.

A plethora of traffic engineering issues were raised in submissions, ranging from concerns about the poor design and potential functionality of certain interchanges, to impacts on local traffic flows, including a strong desire to ban truck use on Rosanna Road. The effect of the Project on the broader transport network and the rationale for projected vehicle numbers was also queried.

Several proposed interchanges were regarded as ill-conceived or poorly designed, particularly at Manningham Road and Lower Plenty Road Interchanges. Others were regarded as 'over engineered' with consequential visual and amenity impacts especially where raised roadways or pathways were proposed close to private open space areas. Some submissions recommended alternative road design parameters for key elements of the Project.

Concerns were expressed about proposed works in Watsonia as depicted in the Reference Design, using a trenched roadway with land bridges spanning above. This was considered to further divide the neighbourhood and to reduce access to local services and facilities.

Other common concerns included significant anticipated impacts during construction, over extensive areas for a long duration (many years). This was combined with a perceived lack of physical connectivity throughout and across parts of the Project area, with the potential to fragment communities and impair daily activities.

Cyclists and walking groups also made detailed submissions advocating for changes in respect of the location and specifications of proposed pathways. Some urged the IAC to consider recommending related upgrades to the cycling and walking network as part of the Project.

## 2.5.3 Ecological effects and impacts on heritage values

Submitters were significantly concerned about the extent of vegetation removal and consequential impacts on habitat and tree canopy cover, as well as the effects on waterways through altered flows or potential groundwater drawdown.

Submissions highlighted the Project's numerous potential physical and functional effects on natural systems across the Project area and beyond, such as the Yarra River and surrounds, Simpson Barracks (including endangered species located within it) and other parklands. The environmental and amenity contribution of these areas was emphasised, as well as the significance of the 'green corridor' throughout the Project area.

Several submissions also pointed to the need for sensitive, appropriate management of Aboriginal cultural heritage and historical heritage assets.

Many submitters insisted on the retention of the River Red Gum tree (*Eucalyptus camaldulensis*) at Bridge Street (Caltex service station site) as a critical requirement for the Project, recognising its landmark status.

#### **2.5.4 Social and economic impacts**

Many submitters opposed the compulsory acquisition of businesses within the Bulleen Industrial Precinct (BIP) due to the likely commercial and personal effects; and there being limited options to relocate nearby which may result in more limited supply of services to the local catchment. It was also considered to have significant impacts on local employment, particularly for the City of Manningham.

Many submissions opposed potential for the Project to result in the closure of Bulleen Art and Garden (BAAG) and its complementary uses. This enterprise was regarded as a 'haven', an inclusive educational facility and a promoter of sustainable land management.

Submissions also focused on the impacts of the Project on numerous public and private sports and recreation facilities in and around the Project area. These would include the permanent closure of the Bulleen Tennis Centre (to facilitate the Freeway interchange and Bulleen Park and Ride facility), the Boroondara Swim Centre and impacts on ovals, parks and multi-purpose areas such as Bulleen Park. Submissions were also received from private schools and other facilities such as the golf courses that would be impacted. These submissions relayed concerns about potential effects, including the lack of timely or feasible resolution of relocation options or the need for subsequent upgrade arrangements.

#### **2.5.5 Effects on residential land use and associated planning restrictions**

Submitters who own and occupy land that would be affected by the Project raised extensive concerns about impacts on their amenity and lifestyle.

Some owners of land identified for compulsory acquisition were concerned about the need to move, especially considering the uncertainty and timing of this process. For others, the impacts of the construction phase or operational phase were considered so significant that they requested mitigating measures (property upgrades, temporary relocation, upgrades to proposed noise walls or the like) or the opportunity to participate in a voluntary purchase scheme. Negative impacts on land values were an underlying concern.

Many of these submissions came from households close to existing freeways where the road and associated infrastructure would be shifted closer to residential boundaries under the current Reference Design. Visual impact was a key concern. This was exacerbated by the location and features of the proposed ventilation stacks and other road infrastructure, together with projected vegetation removal with limited opportunity for buffer replanting in many areas.

Some submitters advocated for the curtailment of the extent of the proposed Special Controls Overlay (SCO) once the final road alignment was known to prevent excessive restrictions on the development of affected private land.

#### **2.5.6 Noise and vibration**

This was a key concern for many submitters, notwithstanding proposed noise walls and other mitigation measures proposed as part of the Project works. In some instances, submitters nominated preferred standards that should be applied to ensure an acceptable level of noise emission, including consideration of the effects of construction activities

(especially at night) and to limit effects on the use and enjoyment of open space and recreation areas.

The use of Tunnel Boring Machines (TBMs) and other proposed construction techniques gave rise to concerns about whether the effects of vibration could be suitably managed. This extended to the structural integrity of buildings, environmental landscapes as well as to human health and amenity effects.

### **2.5.7 Impacts on human health and climate change**

Air emissions and their effects on human health were another notable theme in submissions, especially given already high levels of particulates in some affected suburbs.

The risks associated with contaminated land within the Project area were also a focus for submissions, which emphasised the need for stringent investigation and management to protect beneficial uses.

Other broader concerns included the effects of the Project on more sensitive or vulnerable parts of local communities, including people with disabilities, youth, elderly residents and people suffering poor health (both mental and physical). The timing and extent of proposed construction (in some locations up to seven years) was regarded as a key issue, especially given the proximity of works to places of residence, education, leisure and work.

Some submitters regarded the proposal as inconsistent with current obligations to reduce the effects of climate change. Intergenerational equity was raised as an underlying issue, particularly for a legacy project such as this.

## **2.6 Hearings**

A Directions Hearing was held at The Veneto Club on 21 June 2019. The IAC subsequently issued written directions on 26 June 2019<sup>61</sup> with supplementary written directions on both the 9 July 2019<sup>62</sup> and 11 July 2019.<sup>63</sup>

The Hearing for the Project was held for 34 days over a period of nine weeks, from 25 July to 16 September 2019. A night Hearing session was held, and a small proportion of the Hearing took the form of concurrent sessions to ensure that timelines for assessment of the Project could be met.

Parties to the Hearing are shown in Appendix D of this report and the list of tabled documents is at Appendix E.

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<sup>61</sup> Document 15.

<sup>62</sup> Document 18.

<sup>63</sup> Document 21.

## 2.7 Site inspections

The Proponent organised an accompanied inspection of parts of the Project area on 12 July 2019 for the IAC, representatives of Councils, agencies, organisations and community groups.<sup>64</sup>

The inspection comprised a full day bus tour looking at key components of the Project with a focus on major transport routes including the proposed expansion of the Eastern Freeway and connections to the M80 Ring Road as well as the treatment of major interchanges, the BIP and Carey Baptist Grammar School (Carey). The IAC also observed the general locations of proposed Tunnel Boring Machine (TBM) launch sites, elevated structures, locations of cut and cover works, construction compounds, portal locations and existing and proposed walking and cycling paths.

An additional all-day site inspection was organised for the IAC by the BBW Councils on 13 August 2019 to directly inspect locations within their municipalities impacted by the Project. This visit was attended by the IAC, the Proponent, representatives of Councils and selected government agencies. A central focus of the visit was on the setting of the proposed works on local waterways and vegetation such the Banyule Flats, Koonung Creek and Valda Avenue wetlands, public open space, recreation and commercial areas such as the Freeway Golf Course, Boroondara Tennis Centre and Watsonia Neighbourhood Activity Centre that may be affected. Document 196 contains the itinerary and records the places visited during the inspection.

Some members of the IAC undertook a site visit of relevant parts of the Simpson Army Barracks on the 16 August 2019 and were accompanied by a Defence personal due to security protocols.<sup>65</sup>

An accompanied inspection of Marcellin College (Marcellin) facilities was also conducted on 19 August 2019<sup>66</sup> to look at the impacts the Projects Reference Design would have on the operation of the school.

On 28 August 2019 the IAC, Proponent, representatives of the Councils, selected government agencies and a community representative undertook a site visit to the West Gate Tunnel Project TBM launch site to gain a better understanding of the operation and scale of the works.

Manningham also arranged for the IAC a half day inspection of key facilities and open space within the Manningham municipality on 30 August 2019. The sites included those locations that had not previously been shown to the IAC and included the Bolin Bolin Billabong, BAAG, future industrial land at Webster's Road, Estelle Street and Bulleen Park. The site visit was attended by the IAC, the Proponent, representatives of Councils and selected government agencies.<sup>67</sup>

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<sup>64</sup> See Document 22 for itinerary.

<sup>65</sup> Document 302.

<sup>66</sup> Document 220.

<sup>67</sup> See Document 301 for itinerary.

Parties throughout the IAC process were also given an opportunity to nominate locations for further inspection by the IAC. The IAC members individually or in groups undertook in excess of 20 visits to different parts of the Project including where property acquisition is proposed, where there are likely significant impacts on parks and reserves and other areas likely to have significant Project impacts.

## **2.8 Procedural matters**

### **2.8.1 Request for information**

The IAC issued a Request for Further Information to the Proponent on 20 July 2019. The Appendix to the request included an outline of matters identified by the IAC's technical advisors with the EES and their requests for information. The request was tendered at the Directions Hearing<sup>68</sup>. The proponent's response to the request was made<sup>69</sup>, supported by information in its Part A – Written Submissions,<sup>70</sup> in a series of Technical Notes,<sup>71</sup> in evidence,<sup>72</sup> as well as in submissions during the Hearing.

Some submitters, and particularly the BBW Councils submitted that Technical Notes were being used to bring forth new information; and that the IAC should not be tempted to give them the weight of evidence.

The IAC accepts that the Technical Notes are not, and should not be treated as, evidence particularly where their content has not been tested. They are however, a useful tool to bring forward information in response to queries from the IAC and parties.

### **2.8.2 Confidentiality request**

The IAC was required to consider submissions in closed session as to whether Carey was entitled to present a component of its submissions and evidence in an 'in camera hearing' due to its claimed confidentiality. The IAC determined that the claim for confidentiality was not justified at that time and made a ruling accordingly. Carey subsequently elected to file its evidence on an 'open' basis and presented its submissions and evidence at the public Hearing.

### **2.8.3 Circulation of material**

In the early days of the Hearing, the BBW Councils and Manningham made strenuous submissions claiming that they had been prejudiced by the timing of circulation of material in preparing for their cases. They were also extremely concerned that longstanding requests for further information had not been responded to suitably. Following further consideration, these councils explained that they would use their best efforts to proceed within the Hearing timetable, subject to changes made by the IAC with the agreement of the

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<sup>68</sup> Documents 5-10.

<sup>69</sup> Documents 34b and 34d.

<sup>70</sup> Documents 34a.

<sup>71</sup> Documents 35-63.

<sup>72</sup> Documents 24a to 24aa.



parties as required. Protocols were put in place by the IAC to seek to ensure fairness to all parties through advance circulation of material to be relied on.

#### **2.8.4 Heritage listing**

During the course of the Hearing the IAC also received from Heritage Victoria, two Victorian Heritage Register nominations for the Eastern Freeway.<sup>73</sup> The first nomination was received by the IAC on 2 August 2019 and was raised by the IAC in preliminary matters in the morning of 5 August 2019. The second nomination was received by the IAC on 29 August 2019. Post-Hearing a nomination was received by Heritage Victoria for amending the Fairlea Womens Prison listing. The nomination and listing process is a separate statutory process and the IAC has not addressed that process or its implications for the Project.

#### **2.8.5 Conclave matters**

Pre-hearing there was significant correspondence between parties regarding the arrangement of conclaves. Several issues were raised including:

- The use of multiple conclaves on the same issue<sup>74</sup>
- The attendance at conclaves of ‘parent’ organisations such as DoT representatives who had not prepared expert statement<sup>75</sup>
- Whether other agencies such as EPA should be signatories or merely observers to conclave outcomes.

In the context of such a large project and Hearing, and the inquisitorial nature of the Inquiry’s role, the IAC considers the conduct of the conclaves was overall very successful; despite the issues above.

Over 70 expert statements were circulated, and 14 conclave meetings held. The IAC considers that the conclaves were a valuable tool to aid in its deliberations and any shortcomings in terms of procedural fairness have been addressed through the Hearing process.

#### **2.8.6 Adjournment**

In their closing submission, the BBW Councils and Manningham submitted that the IAC has the power to adjourn to a future date without closing the Hearing and reconvene when it has further considered the material before it. They said:<sup>76</sup>

The IAC should adjourn the hearing for a period prior to reaching a decision to declare the formal hearing at an end. It should consider the evidence to date, and reach a conclusion as to whether or not it is in a position to make the kind of findings required of it by the Terms, within the constraints imposed by those Terms.

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<sup>73</sup> See Document 255a for background.

<sup>74</sup> See for example Document 69.

<sup>75</sup> See for example Document 64.

<sup>76</sup> Document 374a, para 668.

No party submitted that the IAC did not have the power to adjourn; and the IAC considers it does have such power.

However, the rationale as to why an adjournment should be taken is less clear to the IAC. The Project is very large and the assessment through the Hearing process has been challenging, including long sitting weeks and the absorption of a very significant amount of information.

The IAC does not consider however, that this means more time is needed. Given the EES has proceeded on the basis of a reference design (discussed in 1.5.1 above), the consideration of detail has been conceptual; and arguably less than is required for a detailed project design for a project of this scale. The aim of the assessment has been to determine if the environmental effects of the Reference Design have been identified and assessed in the EES and secondly, if the proposed EMF and EPRs are capable of managing these impacts to an acceptable level.

Without a detailed design the IAC consider there is little to be gained from further consideration of effects at this time; that would only be assisted by a detailed design.

### **2.8.7 Supplementary EES**

Given the Reference Design approach and Project scale some submitters suggested the IAC could not reasonably undertake the assessment of environment effects which the Terms of Reference require. The BBW Councils and Manningham submitted:<sup>77</sup>

If the IAC were to decide to formally conclude the hearings on 16 September 2019, the Councils submit that the only course that is reasonably open to the IAC in all the circumstances is to recommend that a Supplementary EES is prepared and exhibited – based upon a design that can be assessed, and replete with all of the actual information necessary to properly address the scoping requirements and evaluation objectives.

One of the main problems of the Reference Design in such a large project as this is that the community do not get any substantive opportunity to review the actual project design and its detailed environmental effects as opposed to the Reference Design which is a feasible concept.

Between now and the issuing of construction contracts in early 2020, it is anticipated that there will be a significant amount of work on Project impacts being undertaken, with limited transparency for the public post this EES process.

The preferred design will not be finalised for approximately the same time period. It raises the obvious issue of how the Project can be constructed in the time frame set by Government if a Supplementary EES (SEES) is required towards the second half of next year.

The IAC highlights a number of areas where environmental effects assessment is perhaps incomplete in the exhibited EES. The decision on whether a SEES is required is one for Government and the IAC has not recommended that one be prepared. A SEES is however,

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<sup>77</sup> Document 374a.

clearly an option for specific parts of the Project if considered necessary as the final design evolves.

The IAC considers it is able to reasonably make findings on the environment effects of the Project, subject to the recommendations and qualifications in this report.

## **2.9 The IAC's approach**

The IAC has assessed the environmental effects of the Project considering:

- the evaluation objectives of the Scoping Requirements as responded to by the EES
- the Terms of Reference
- relevant legislation and policy
- all evidence and submissions.



## **PART B: ENVIRONMENTAL EFFECTS OF THE PROJECT**



### 3 Traffic and transport

Traffic and Transport impacts are addressed in the EES in:

- Chapter 9 Traffic and transport
- Technical Report A Traffic and transport.

The Traffic and transport evaluation objective 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.

The IAC acknowledges that traffic and transport impacts have far reaching influences on other evaluation objectives such as health, amenity, environmental, social, business and land use and these are explored in their relevant chapters.

Table 1 summarises each party's traffic and transport evidence and the expert's principal area of focus.

**Table 1** Traffic and transport evidence

Party	Expert	Firm	Principal Area
Proponent	Tim Veitch	Veitch Lister Consulting	Strategic transport modelling
	Luis Willumsen	Willumsen Advisory Services	Strategic transport modelling (Peer review)
	John Kiriakidis	GTA consultants (Vic)	Technical Report A (Peer review) and public submissions
BBW Councils	Andrew O'Brien	O'Brien Traffic	Traffic engineering, transport planning (alternative design)
	Peter Dunn	Arup	Strategic transport modelling
	William McDougall		Transport planning and experience in modelling
Manningham	Hilary Marshall	Ratio Consultants	Traffic and transportation
Carey	Brett Young	Ratio consultants	Car parking and traffic
Marcellin	Charmaine Dunstan	Traffix	Car parking and traffic
La Trobe University	Knowles Tivendale	Movement & Place	Transport planning
Friends of Banyule	Dr John Stone	The University of Melbourne	Transport planning
ALH Group	Valentine Gnanakone	Onemilegrid	Car parking and traffic

Due to site specific issues (such as the schools and Manningham Club) and a discrete group of strategic transport modelling experts, six traffic conclaves were held as set out in Table 2.

The Strategic transport modelling conclave went over two days, with many issues not discussed due to lack of time. Conclave Number 6<sup>78</sup> was organised by the Councils without the Proponent being represented, which defeats the intended purpose of these meetings of succinctly identifying the key issues of agreement and disagreement between parties.

**Table 2** Traffic and transport conclaves

Doc. No.	Date	Attendees	Principal Area
95	25 July	Tim Veitch, William McDougall, Peter Dunn, Knowles Tivendale, Luis Willumsen	Strategic transport modelling
109	24 July	Charmaine Dunstan, John Kiriakidis, Tony Frodsham (SmedTech), Matthew Hall (DoT), Richard Fanning (DoT), Phoebe Hollins (GTA as record taker)	Marcellin College
110	24 July	Brett Young, John Kiriakidis, Tony Frodsham (SmedTech), Matthew Hall (DoT), Richard Fanning (DoT), Phoebe Hollins (GTA as record taker)	Carey Baptist Grammar School
118	24 July	Valentine Gnanakone, John Kiriakidis, Tony Frodsham (SmedTech), Matthew Hall (DoT), Phoebe Hollins (GTA as record taker), Richard Fanning (DoT – observer)	Manningham Club, ALH Property Pty Ltd.
124	29 July	Hillary Marshall, Andrew O’Brien, John Kiriakidis, Matthew Hall (DoT), Richard Fanning (DoT), Phoebe Hollins (GTA as record taker)	Councils
219a	12 August	Hilary Marshall, Charmaine Dunstan, Brett Young, Valentine Gnanakone and Andrew O’Brien	Conclaves, Reference Design at Bulleen Road I/C

### 3.1 Key transport outcomes and traffic and transport Evaluation Objective

The key transport outcomes sought are:<sup>79</sup>

- Redistribute traffic away from local and arterial roads and onto the North East Link and freeway network
- Less congestion at existing bottle necks
- Improve travel times across the northeast
- Reduce truck volumes on local and arterial roads
- Improve Doncaster Area Rapid Transit (DART) bus travel times
- New and upgraded shared use paths

The key Project transport outcomes and evaluation objective were generally considered acceptable to parties. The primary issue was the Proponent’s solution(s) and measures to manage the Project effects were contested. This leads to the second component of the

<sup>78</sup> Document 219a.

<sup>79</sup> EES Chapter 9.2.



evaluation objective *‘while managing the effects of the project’* which is where the IAC has primarily focused.

### **3.2 Key issues**

The IAC considers the key traffic and transport issues are:

- Adequacy of the strategic modelling
- Adequacy of the Reference Design, including:
  - interchange design
  - Bulleen Road alignment and access issues
  - Eastern Freeway expansion
  - Extent of tunnelling by TBM
  - Active Transport infrastructure
- Project operational impacts including:
  - Rosanna Road conditions and resident proposed full time truck ban
  - Increased traffic and redistributed traffic on selected roads
  - Public transport services and functionality
- Construction impacts
  - Haul routes
  - Disruption and diversions
  - Compound traffic impacts.

### **3.3 Adequacy of the strategic transport modelling**

The strategic transport modelling is a key project building block. It informs the Project design in terms of providing enough transport capacity such as the number of traffic lanes, interchange design and configuration, and impacts on the surrounding road network. It provides the primary inputs into other Project facets such as air quality and noise modelling which depends on the projected traffic volumes.

It is critical that the transport modelling provides sound and realistic outputs.

The key issues were:

- Is the transport model fit for purpose
  - there were differing views regarding the Proponent’s methodology which was considered by some parties to not accord with standard practice
  - input assumptions

Key transport modelling metrics which are outlined in Technical Report A:

- around 88 per cent of existing drivers on routes such as Fitzsimons Lane, Greensborough Road, Rosanna Road and Tullamarine Freeway will divert to the Project<sup>80</sup>
- around 17 per cent increase in bus patronage for DART services in 2036 due to better level of service associated with higher travel speeds<sup>81</sup>
- a slight 1-2 per cent reduction in rail patronage on services along Camberwell, South Morang and Hurstbridge corridors due to DART providing better service.

### 3.3.1 Evidence and submissions

#### (i) The Proponent

##### Tim Veitch - Veitch Lister Consulting

Mr Veitch<sup>82</sup> stressed that his strategic modelling was reliable and prepared to an appropriate standard, however, it is a model endeavouring to forecast human and travel behaviour up to 20 years into the future which is inherently uncertain.

The strategic transport modelling was undertaken using his proprietary Zenith model for options assessment, business case and the Project EES.<sup>83</sup> It included modelling different transport network options with and without the Project to quantify Project impacts. In Mr Veitch's opinion, the Zenith model is more accurate than other models for toll road forecasting.

Mr Veitch used a variety of techniques to ensure the model was working soundly including validating the model against actual traffic volumes and travel times and found a high degree of reliability. Further sensitivity testing was undertaken to ascertain effects of amongst other things, changes in toll prices, cost of fuel, public transport fares etc.

He observed that it is not possible to quantify the accuracy of the model until we reach the modelled dates (2026 and 2036), as there are just too many unknowns. Significant drivers in traffic generation are population growth<sup>84</sup> as shown in Figure 7, land use and economic growth.

<sup>80</sup> Technical Report A - VLC Transport Modelling Summary Report p. 27.

<sup>81</sup> Technical Report A - VLC Transport Modelling Summary Report p. 37.

<sup>82</sup> Document 24z.

<sup>83</sup> Mr Veitch Strategic Transport Modelling Presentation.

<sup>84</sup> Which has been increasing significantly higher than forecasts.

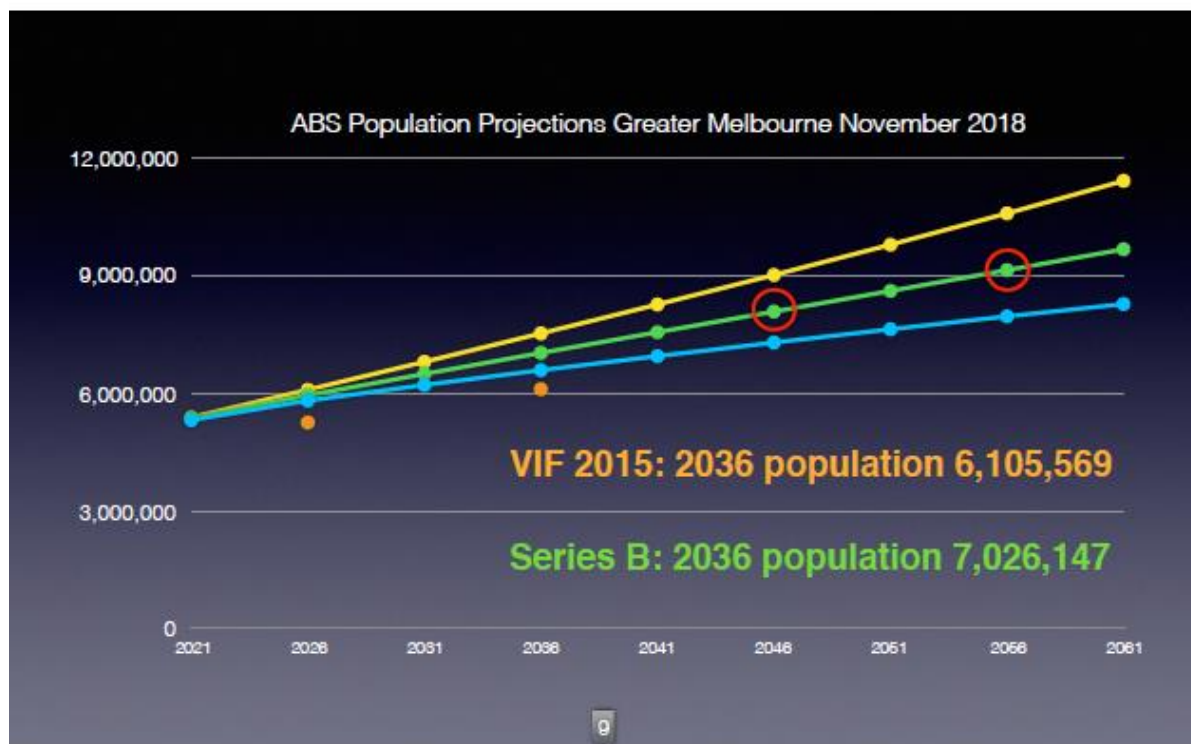


Figure 7 Population growth forecasts<sup>85</sup>

Mr Veitch believed that the model should do a reasonable job of predicting where traffic will increase and decrease across the road network and a broad indication of by how much.

Mr Veitch agreed with concerns that some key infrastructure projects were not included in his model<sup>86</sup> and consequently undertook further modelling to ascertain their impacts. These projects and anticipated Project impacts are shown in Table 3.

Table 3 Major infrastructure projects

Project	Impact on Project traffic flows
Suburban Rail Loop	around 1 per cent reduction
East West Link	around 4 per cent reduction <sup>87</sup>
Melbourne Metro stage 2 (Clifton Hill to Newport)	less than 1 per cent
Eastlink widening (including tunnel upgrades)	around 4 per cent increase (at Yarra River crossing)

Mr Veitch modelled an unconstrained public transport network (i.e. potentially more attractive) and hence overstated its attractiveness in the future. On his assessment, he did

<sup>85</sup> Document 83, slide 9.

<sup>86</sup> In part because they were not included in the Transport for Victoria (TfV) Reference Case that identifies all major public transport and infrastructure projects to be considered.

<sup>87</sup> Document 122 - correction from evidence which originally showed a 4 per cent increase.

not believe that a suite of public transport upgrades or new services would be capable of circumventing the need for the Project. The Suburban Rail Loop, which follows a similar alignment, only achieved a one per cent reduction in Project demand.

Mr Veitch explained that all strategic transport models follow a four-step process:

- Trip generation (how many trips)?
- Destination choice (where to)?
- Mode choice (train, tram, car, walk...)?
- Trip assignment (which route)?

Mr Veitch clarified that that the ‘dampened single distribution’ approach taken by Veitch Lister Consulting (VLC) had been its standard practice since 2002<sup>88</sup> and in his opinion produced more stable, realistic and reliable results. He acknowledged that the Zenith model takes a different approach to that recommended in the Transport for Victoria (TfV) guidelines for the future trip distribution component. He clarified that his modelling was more conservative (i.e. generates higher traffic volumes) than the conventional ‘undampened loop through distribution’ method. Revising the 2036 figures using the conventional method would result in:

- 7 per cent reduction in Project demand
- 10 per cent lower (average) impacts on other nearby roads.

Mr Veitch acknowledged the strengths and weaknesses associated with strategic modelling, including forecasting. Key limitations include:

- relies on third party inputs (Government forecasts for population, land use)
- forecast travel demand can exceed practical capacities of public transport and roadways requiring adjustments to model outputs
- difficult to accurately model intersections and queueing effects
- medium to long range forecasts are uncertain
- lack of data.

### **Luis Willumsen – Peer Review**

Dr Willumsen undertook a peer review with his primary focus to assess the process, assumptions, methodology and assessment in the transport model preparation. He concluded that the model is appropriate for use.

The model produces reliable and consistent results that can serve as a solid base for the EES.<sup>89</sup>

He held extensive discussions with the VLC modelling team to further understand their approach. He sought greater details on toll avoidance, as this had been a source of miscalculation in the past and dealt with new transport modes such as ride share services and autonomous vehicles.

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<sup>88</sup> Document 95, Strategic Transport conclave.

<sup>89</sup> Document 126, Luis Willumsen Evidence page 40.

Dr Willumsen noted that a strategic model has over 1,000 parameters, most of which result from calibration and estimation efforts and must be seen in the context of a complete model, not necessarily one parameter at a time.

He observed the difficulty in trying to model traffic and driver behaviour with the example of the day to day variations one experiences, in travel times, queue lengths, varying congestion and the like when driving.

## **(ii) Department of Transport**

Mr Connor advised that the DoT is supportive of the Project's transport modelling and the traffic estimates appear reasonable. DoT had been involved throughout the strategic modelling process providing key inputs.

DoT agreed to model boundary constraints, and in particular, the Eastern Freeway/Hoddle Street interchange was not included as projected traffic flows would only be marginally higher compared with the no project scenario.

Traffic volumes along Hoddle Street just south of the Eastern Freeway are forecast to increase by only two per cent across the day, which is within the margin of day-to-day traffic variability.<sup>90</sup>

DoT does not believe the Reference Case is more developed for roads compared to public transport, as a range of rail, tram and bus improvements has been included in the assessment.

## **(iii) BBW Councils**

The BBW Councils called two experts in strategic transport modelling.

### **Mr Peter Dunn – Arup**

Mr Dunn's evidence was that he took a broader approach, focusing on strategic transport planning matters as well as the modelling component.

He believed that separating the strategic modelling and traffic and transport tasks heightened his concern that policy is not informing the modelling, rather that the modelling is driving the 'road based' outcomes.

His evidence was that the Project is a significant road project that has been developed in isolation, which is not consistent with the TIA or Victorian Transport Plan. It fails to meaningfully consider a range of transport and policy measures or explore opportunities to reprioritise the road network for users other than private vehicles.

He suggested that the Project has evolved beyond its original objectives to primarily address freight and orbital trips, whereas the DART services and Eastern Freeway widening east of the Project serve primarily radial trips. Further, the Eastern Freeway widening west of the

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<sup>90</sup> EES Chapter 9, pp9-83.

Project, adding capacity towards the city, is contrary to the principle of prioritising public transport.

Mr Dunn was concerned with the lack of strategic model validation, in particular, poor correlation of traffic and travel times on some key routes and lack of data. Forecasting concerns were associated with intersection modelling and the downstream effects where the micro-simulation model determines the Project's size and capacity (i.e. number of lanes, interchange design, queue lengths).

Mr Dunn believed that there is a high degree of uncertainty in the 2036 traffic forecasts, but this has not been adequately considered or influenced the design. In his opinion, the Zenith model overestimates traffic in the corridor and materially affect the EES outcomes, however he was unable to say by how much.

In addition, the Eastern Freeway is mostly assessed to operate at the posted speed limit in the 2036 AM peak, but due to arterial road capacity constraints at multiple locations, additional traffic will be unable to access the freeway.

Mr Dunn identified significant impacts on local centres such as Watsonia, Macleod, Box Hill, Blackburn and Nunawading associated with increased traffic which should be considered. He further noted there appears to be no operational assessment for pedestrians and cyclists and little enhancement to prioritise cycling along the Eastern Freeway, or improvements for cyclists on sections of road network between the Ring Road and the Eastern Freeway.

#### **Mr William McDougall – independent transport planner**

Mr McDougall's primary evidence was that it is fundamentally important that the strategic transport modelling follows industry best practice and is demonstrably robust. The model provides travel and traffic projections on which the future Project performance is based and is a key input into the ultimate project size and scope. His evidence was that detailed guidance exists in Australia<sup>91</sup> which stipulates how strategic transport modelling should be done to ensure maximum confidence in the outputs.

From the conclave he agreed that the Zenith 2016 model overestimates daily traffic and further model refinement could have been undertaken.

Mr McDougall did not support the VLC 'single loop distribution' method as it was not consistent with established practice and potentially distorts the trip distribution component of the model resulting in significant over or under estimating future traffic volumes. Further, it is not possible for the model to adequately converge to a stable state resulting in traffic volumes varying enormously between model iterations, especially in future years.

There were several other modelling and parameter issues that Mr McDougall did not support which in his opinion would most likely result in an inflated Project demand, but he was unable to comment on the extent.

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<sup>91</sup> Australian Transport Assessment and Planning Guidelines, <https://atap.gov.au>.

**(iv) City of Yarra**

Yarra raised the following concerns with the strategic modelling:

- Shifting excess traffic demand to either side of peak periods due to road capacity constraints does not capture re-routing onto other roads
- East West Link should be included in analysis
- Lack of scenario testing.

**(v) Mr Knowles Tivendale – La Trobe University**

Mr Tivendale submitted that the primary focus had been on treating the transport symptoms with essentially a road-based solution rather than a broad assessment of the cause of these symptoms. More detailed analysis should be undertaken of other modes in the corridor, with greater consideration given to public transport and active transport solutions. These issues are discussed in Chapter 3.8.

In relation to the strategic modelling, Mr Tivendale was concerned with some of the modelling assumptions and perceived biases in relation to public transport usage and uptake against car travel. This may result in public transport being not accurately modelled.

**(vi) Other submitters**

A number of submissions were received from various parties and individuals. These generally related to:

- Robustness and realism of the strategic modelling
- Is induced demand appropriately considered
- Future year assumptions
- Traffic and transport impacts, particularly at the Hoddle Street/Eastern Freeway interface.

**3.3.2 Discussion**

The IAC accepts that it is inherently difficult to predict transport movements up to 20 years into the future but considers the VLC strategic modelling provides a reasonable basis for design development.

DoT provided key inputs and generally oversaw the model development, and Dr Willumsen's peer review found the work to be reasonable and provide consistent results.

Mr Dunn and Mr McDougall believed that additional data and validation would have been useful and did not support Mr Veitch's 'single loop' methodology as it was not aligned with standard practice.

Additional and 'newer' data is always preferable, but the IAC is unsure whether more accurate results would be realised considering the long lead times to 2036. VLC has been using the single loop method for close to 20 years. The IAC considers they have a sound track record providing strategic transport modelling for major projects throughout Australia. They have more accurately determined traffic flows on major transport infrastructure projects where others had significantly overestimated the likely benefits. Considering the above, Mr Veitch's methodology appears reasonable.

The IAC senses that if each expert had undertaken the modelling task, it would have resulted in a range of different assumptions, model parameters and traffic outputs. In some respects, the simulation model itself becomes the core focus, rather than the *use* of the simulation model to solve a problem. The choice of the many parameters and assumptions is a key skill of the forecasters. There was debate on these issues, but the overarching outcome appeared to be and agreed by all parties is the model is likely to overestimate traffic flows (perhaps around 10 per cent) in 2036 than may occur.

The consequences of lower traffic volumes in 2036 compared with the estimated figures would result in a higher level of service for motorists (and better air quality and less road noise) or alternatively, 2036 figures may not be realised until sometime further into the future. But this raises a more fundamental question – could a substantially smaller footprint project be delivered to achieve the desired Project objectives?

Ten per cent more or less traffic is unlikely to materially affect the design, and road practitioners often refer to day to day variations of ten per cent in traffic flow being commonly observed. Further, a ten per cent variation in future traffic flow out to 2036 would have negligible consequences on the ultimate Project design. Similarly, a greater uptake of public transport, which would be desirable, is unlikely to be so great as to negate the need or result in a significant reduction in the required Project traffic capacity.

While there is disagreement between the various experts, these differences are unlikely to result in such a significant change in traffic flow to warrant a major redesign of the Project.

### **3.3.3 Findings**

The IAC finds that the strategic model outputs are suitable for Project design development considering the inherent uncertainty of forecasting to 2036.

## **3.4 2036 Traffic distribution and interchanges**

While the key physical elements of the Project have been highlighted in Chapter 1.2, it is beneficial to appreciate the broad traffic distribution and functionality of the Project.

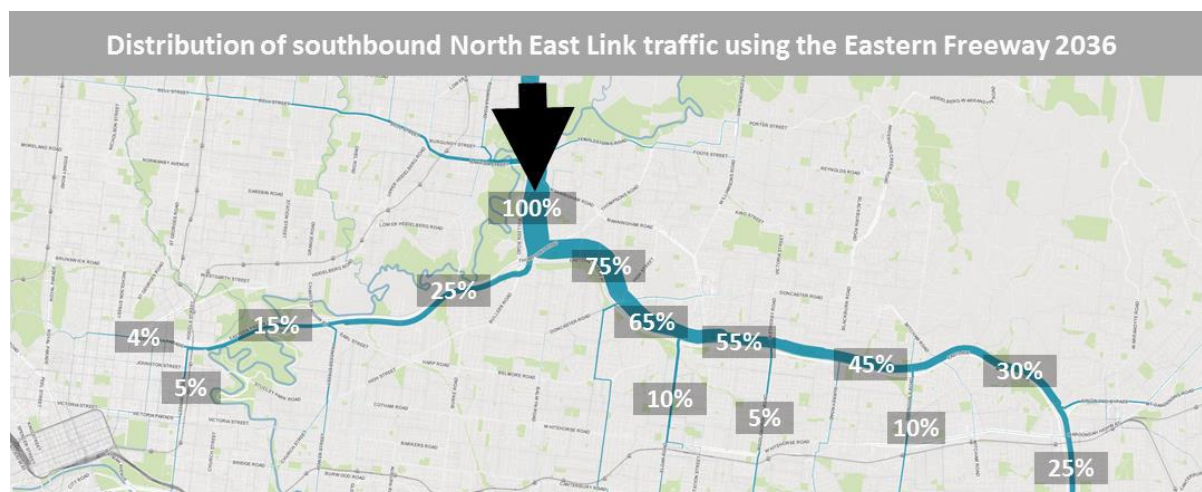
Based on strategic modelling, completing the ‘missing link’ in Melbourne’s orbital freeway network will migrate traffic off the local and arterial roads and on to the Project and the freeway network.

It should be noted that the Project does not attract additional traffic to the inner suburbs, rather it redistributes some of this traffic bound for these suburbs to the freeway network, freeing up capacity on the arterial road network.<sup>92</sup> While 25 per cent of Project southbound traffic heads towards the City, around five per cent is destined for Hoddle Street and four per cent for Alexandra Avenue (refer to Figure 8).

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<sup>92</sup> Document 434. NELP closing submission para 171.





**Figure 8** Distribution of southbound North East Link traffic using the Eastern Freeway 2036<sup>93</sup>

Intuitively, the Project providing additional freeway capacity will relocate traffic from the surrounding road network. Most nearby roads will experience a **decrease** in traffic, most notably, arterial roads on a similar alignment to the Project such as Greensborough Road, Rosanna Road and Fitzsimons Lane. Some roads which feed into the Project would experience **increases** in traffic, particularly north-south roads in the City of Whitehorse (Figure 9).

The IAC enquired about opportunities to remove connection(s) to the Project at the Manningham Road Interchange to minimise impacts on BIP. The Proponent advised that a key component of the design, and identified in the Project business case, was interchanges would be provided at arterial road crossings points:

- to provide maximum accessibility and connectivity between local community and employment and education precincts
- removing trucks from local roads.<sup>94</sup>

The IAC accepts this rationale and that it would equally apply to all proposed interchange locations such as Lower Plenty Road where some submitters believed that an interchange should not be located, or its installation deferred.

<sup>93</sup> North East Link Project Business Case, Appendix D, page 10.

<sup>94</sup> Document 56. Technical Note 22.

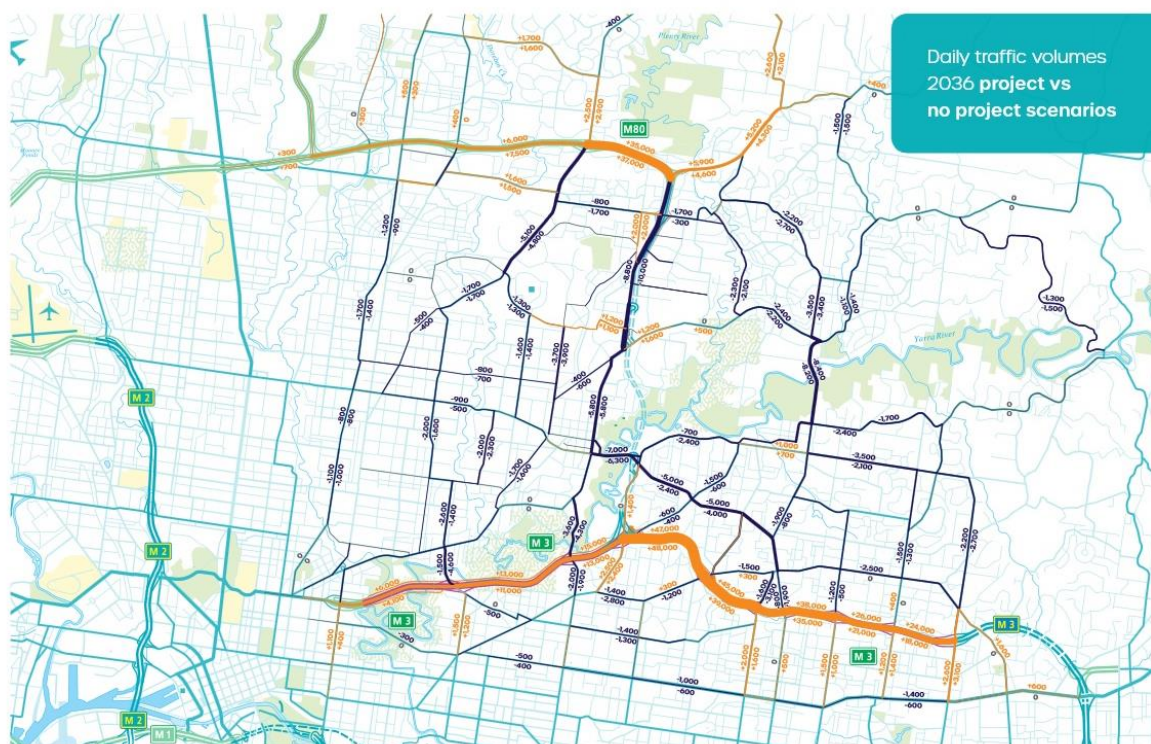


Figure 9 Traffic impacts, 2036, Project compared to No Project<sup>95</sup>

### 3.5 Reference Design

While the Reference Design represents one possible design solution, there was considerable debate over many of its traffic and road design elements.<sup>96</sup>

Key issues:

- The design footprint was too big - it was 'over designed'
- Alternative designs options.

The Proponent developed a number of alternative designs in response to community feedback. Some of these alternatives were considered to have desirable elements relative to the Reference Design. Where relevant, the alternatives are considered below.

The Project alternative designs are:

- **Bulleen Park and Ride facility** – new access to north via a two-way service road and improved active travel links<sup>97</sup>
- **Bulleen Road switch** – new access to Bulleen Park and Ride and Manningham Club via a service road. Reduced construction impacts<sup>98</sup>

<sup>95</sup> Document 85, slide 7.

<sup>96</sup> The IAC raises concerns in relation to the Reference Design approach in Chapter 1.

<sup>97</sup> Document 217.

<sup>98</sup> Document 102, 217.

- **Watsonia Station** – reduced traffic in Watsonia Neighbourhood Activity Centre, better network connectivity, direct access to Elder Street, improved pedestrian access<sup>99</sup>
- **Lower Plenty Road interchange** – improved traffic functionality /accessibility, less complex Lower Plenty Road interchange, reduced impacts on Erskine Road and shared use paths, simpler construction<sup>100</sup>
- **Manningham Road interchange** – avoids high traffic demand from Bulleen Road.<sup>101</sup>

Many submitters believed that the tunnels should be extended further (Chapter 3.6). Discussion of other Reference Design elements are:

- Active transport – Chapter 3.7
- Public transport – Chapter 3.8.

### 3.5.1 Evidence and submissions

#### (i) The Proponent

Mr Kiriakidis identified that the Reference Design is required to meet (amongst other things):<sup>102</sup>

- network connectivity
- complete the High Productivity Freight Vehicle network
- relevant motorway design standards
- meet Level of Service D for density and delays (approximately 2,000 cars per lane per hour travelling at 100 km/h at 2036)
- Urban design objectives.

#### Microsimulation model

The strategic transport modelling estimated traffic volumes are inputs for the microsimulation model. This step determines key road capacity and preliminary design parameters such as the number of traffic lanes, intersection configuration, and traffic signal operations to ensure an appropriate Level of Service is maintained during peak periods.

The model also identifies where traffic exceeds capacity on the nearby road network and assists in allowing remedial measures to be identified such as:

- Greensborough Bypass/Diamond Creek Road/Civic Drive roundabout (upgrade works are planned by DoT for this site).
- Impacts on EastLink Tunnels were assessed. It was found tunnel performance improves with the Project and tunnel upgrades would not be required. Localised inbound congestion was caused by
  - Springvale Road entry ramps which will be resolved by the Project

<sup>99</sup> Document 100.

<sup>100</sup> Document 117.

<sup>101</sup> Map book sheet 20 of 42.

<sup>102</sup> Document 135. Mr Kiriakidis Expert witness presentation.

- on ramps at Maroondah Highway, Ringwood.

Mr Kiriakidis reviewed the Hoddle Street/Eastern Freeway interchange and noted that forecast traffic increase would be modest. Traffic queues back from Hoddle Street did not interfere with the recently upgraded Chandler Highway interchange.

In relation to arterial roads intersections within the City of Whitehorse, the model boundaries, had been developed in consultation with VicRoads. Predicted increases in traffic volumes were modest and likely to be addressed through signal modifications rather than significant intersection upgrading works. Nevertheless, ongoing monitoring of these key intersections would be undertaken after the Project opening to ascertain impacts at these locations.

### Project 'over design'

Mr Kiriakidis explained that Level of Service D was an EES requirement and consistent with other DoT projects including the West Gate Tunnel Project. While throughput of vehicles is not as great as Level of Service E or F; Level of Service D provides for maximum productivity at the maximum sustainable flow rate (refer to Figure 10). Essentially this means:

- travel speeds remain higher
- there is less risk of flow breakdown
- there is less risk of crashes
- improved travel time and reliability.

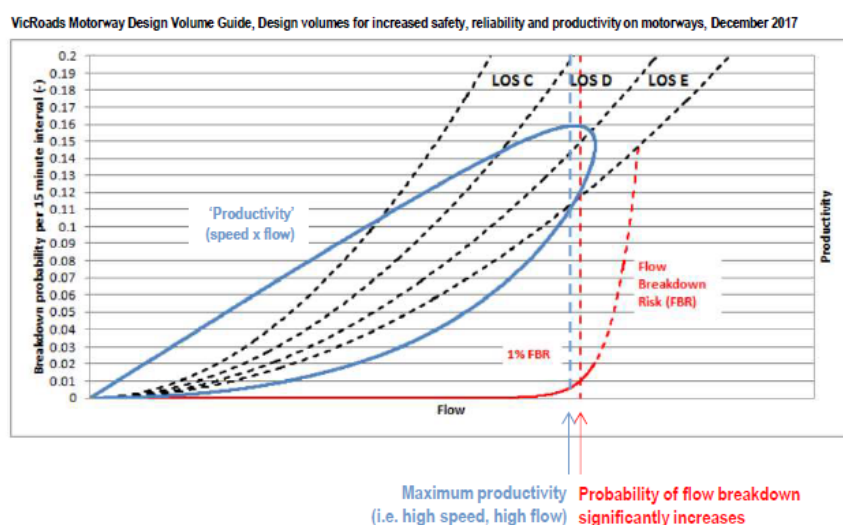


Figure 10 Level of service D design<sup>103</sup>

The Collector Distributor (CD) design rationale separates traffic entering and exiting the freeway from traffic travelling longer distances in the express carriageways. This method minimises weaving which enhances safety and makes the freeway more efficient. However, the CD system requires more width to separate the express and CD lanes.

<sup>103</sup> Tabled document 135, slide 22.

## Project alternative designs

Mr Kiriakidis endorsed the Proponent's alternative designs outlined above.

In relation to Ms Marshall's alternative design for Manningham Road Interchange, he believed it would be premature to identify preferred access locations or arrangements for the former BIP until the future land use was finalised.

Active travel and construction impacts are discussed separately elsewhere in this report.

### (ii) Department of Transport

Mr Connor advised that DoT supports the Proponent's design intent and criteria as well as their alternative designs.<sup>104</sup>

Mr Connor provided an overview of the Managed Motorway Systems which improves the operation, safety and utility of the freeways and would form part of the Project.

Key measures include:

- Lane Use Management Systems (the overhead gantries on freeways showing speed limits, which can be altered depending on traffic conditions), but can also direct motorists to an adjoining lane in case of a crash or maintenance work further ahead
- Co-ordinated Ramp Signals:
  - ramp metering, to 'feed' vehicles onto the freeway in an orderly fashion so as not to disrupt traffic flows
  - clear off ramps to ensure vehicles do not queue back onto the freeway through lanes by providing more green time at the traffic signals
- a range of other technology and automation, including CCTV cameras, speed and queue monitoring to provide real time information to the traffic control centre.

This technology reduces trip delays, improves capacity, provides more reliable traffic flows, improves safety and results in a more productive and reliable road network.

### Braided ramps

Braided ramps are used on freeways where the on and off ramps cross over each other and are grade separated. They are generally used on closely spaced interchanges (such as along the Eastern Freeway between Bulleen Road and Blackburn Road where for example, citybound vehicles entering the freeway potentially conflict and share the lane with vehicles exiting the freeway at the neighbouring interchange). This removes weaving or crossing of traffic movements which can cause flow breakdown and congestion under peak traffic demands. Braided ramps enhance freeway safety and operation by separating merging and weaving manoeuvres and will be used at selected ramps on the Project and Eastern Freeway.

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<sup>104</sup> Document 177, Department of Transport Submission.

### **Collector distributor lanes**

CD lanes are proposed for sections of the M80 Ring Road and Eastern Freeway. They provide dedicated express lanes for the longer journeys while separating traffic that is entering and exiting the freeway from closely spaced interchanges.

The CD lanes are physically separated by a concrete barrier and found to optimise network capacity and improve safety by:

- increasing individual lane capacity
- manage turbulence from lane changing.

The IAC was informed a painted separation line was utilised on the Monash Freeway which generally performed well but still some non-compliant motorists were observed.

### **Eastern Freeway widening**

Mr Connor outlined the required road geometry and cross section for the Eastern Freeway widening.

Fundamentally additional traffic lanes are required to provide additional traffic capacity primarily associated with the connection of two major motorways (Eastern Freeway and the Project). However, overarching this, is the need to provide a safe and efficient motorway.

DoT has a detailed understanding of the localised congestion which forms along the Eastern Freeway, primarily associated with the closely spaced interchanges, east of Bulleen Road. Along this section of freeway, complex weave and merge manoeuvres occurs from local movements between interchanges, to medium and longer journeys, in conjunction with existing traffic flow from other vehicles already travelling along the freeway. The work undertaken by DoT to understand turbulence, sustainable flows, safety and operation identified that separating traffic movements is required. This would necessitate a combination of braided lanes, CD and express lanes being provided.

### **(iii) BBW Councils**

The BBW Councils were concerned with the significant 'land take' and adverse traffic impacts associated with the Project, in particular:

- along the Eastern Freeway corridor
- around Watsonia Neighbourhood Activity Centre
- truncation of Greensborough Road in and around Nell Street.

In relation to the road design, Mr Finanzio for the BBW Councils submitted that the Proponent has produced a design that is as 'fat' as it possibly can be, favouring arbitrary design specifications that did not explain what trade-offs were involved and how decisions were made about which interests to prioritise.

He submitted, AustRoads Guide to Road Design Part 2:

The objectives of new and existing road projects should be to carefully considered to achieve the desired **balance** between the level of traffic service provided, safety, whole of life costs, flexibility for future upgrading or rehabilitation, and environmental impact (emphasis added)<sup>105</sup>

BBW Councils relied on Mr O'Brien's evidence, who developed a smaller footprint design while maintaining a similar capacity as the Project Reference Design.

Mr O'Brien identified several road safety issues with the Reference Design and highlighted the key features of his design which:

- addressed perceived safety issues with the Reference Design
- simplified and provided a more effective busway
- minimised unjustified complexity of Eastern Freeway and Metropolitan Ring Road interchanges
- simplified, but more effective and safer alternatives.

Mr O'Brien did not believe that CD lanes were required or would achieve better outcomes than would be achieved by ramp metering and good signage noting that ramp metering produces much safer freeway environments. The barriers associated with CD lanes create a potential for dangerous weaving at the point where the traffic lanes begin to segregate.

Mr O'Brien advised that when the Project is operational, many vehicles will have 'surround awareness' which will assist safe lane changing and his design is on this basis.

Mr O'Brien, as a long-term practitioner, believes the most important elements of managed motorways are ramp metering and technology use to guide motorists.

Mr O'Brien expressed concern that the microsimulation model needs to incorporate all adjacent and critical intersections, many of which are already congested such as Springfield Road at Springfield Road and Middleborough Road, Kew Junction, Chandler Highway/Heidelberg Road, Hoddle Street and Eastlink tunnels. At some locations it appeared the model produced unrealistic or incomplete results.

He believed providing Level of Service D is unrealistic in a major urban environment as practically the peak periods would shorten to utilise the freeway's spare capacity resulting in a Level of Service E occurring. Designing to Level of Service E instead of D would be the equivalent of providing four instead of five traffic lanes.

Mr O'Brien expressed disappointment and frustration throughout the process to develop his design. He had drawings provided at an incoherent scale, and a lack of detail and data to properly assess the Project. His request for information or assistance were refused until well into the Hearing. However he noted he visited GHD to discuss and review microsimulation results which suggested that his design did achieve a Level of Service D (and with a smaller footprint). Reference Design Road Safety Audit results were also not produced to him when requested.

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<sup>105</sup> Document 374a. MCC and BBW CC closing submission para. 153 (b) p51.

Council's major transport issues were summarised in Schedules 2, 3 and 4 of their joint submission.<sup>106</sup> Outstanding issues are:

**City of Banyule:**

- **Watsonia Neighbourhood Activity Centre**
  - further fine tuning of the design is required including, but not limited to:
  - widening of the land bridges to provide space for planting and urban design improvements
  - improve connectivity between Elder Street and Watsonia Village
  - additional access points to the new car park
  - Local Area Traffic Management strategy.
- **Greensborough Road / Nell Street Truncation**
  - associated local road closures at Greensborough Road will create unacceptable changes to traffic volumes and traffic. The Reference Design should be amended to retain access.

**City of Boroondara:**

- Increased traffic on local roads; the Proponent should identify and upgrade alternative routes.

**City of Whitehorse:**

- Deterioration of local and arterial road performance and lack of detail on remedial works. In particular:
  - Station Street/Woodhouse Grove
  - Surrey Road/Grosvenor Street
  - Middleborough Road/Heathfield Rise/Katrina Street
  - Springvale Road/Ashwood Drive
  - Whitehorse Road around Box Hill Major Activity Centre (MAC)
- Increase in Heavy Vehicles, particularly Middleborough Road and potentially Elgar Road.

**(iv) City of Manningham**

Manningham held similar concerns to the BBW Councils and relied on Ms Marshall's evidence<sup>107</sup> which focused principally on:

- An alternative Manningham Interchange (Ratio Alternative) with improved access and egress to the Project, in particular removing the need for westbound traffic (heading towards Heidelberg) on Manningham Road wishing to head south (towards Eastern Freeway) needing to perform a U-turn on Banksia Street and improved access to Bridge Street (refer to Figure 11).
- Identifying possible access arrangements and locations for the future redevelopment of the former BIP.

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<sup>106</sup> Document 176.

<sup>107</sup> Document 244.



- Generally supporting the truncation of Avon Street and conversion to a court bowl at Bulleen Road through a consultative process with Council and further input from residents.
- Generally supporting the Bulleen Switch and proposed access arrangements for abutting properties but had reservations with the proposed closely spaced signalised intersections (Marcellin and service road/Carey and Bulleen Park sports grounds) and Veneto Club.
- Eastern Freeway widening with CD lanes results in significant widening to accommodate four to five concrete barriers and associated shoulders (refer to Figure 12) as opposed to the existing carriageway where only the central barrier is in place. In her opinion, introducing additional barriers and associated increase in freeway cross section should be weighed against its adverse impacts on the loss of park lands.



Figure 11 Manningham interchange Ratio Alternative<sup>108</sup>

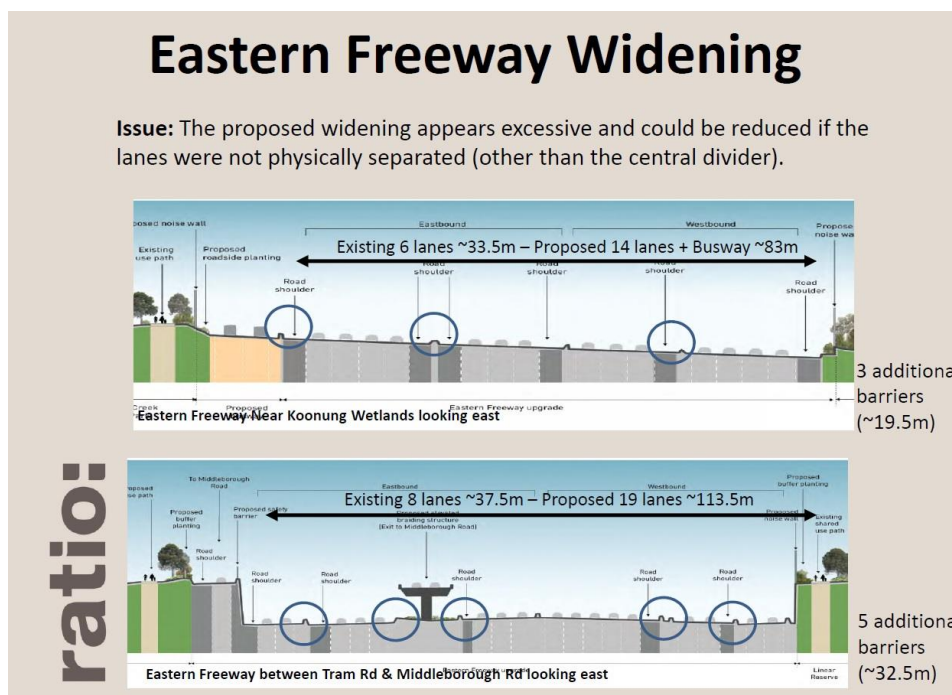


Figure 12 Eastern Freeway widening <sup>109</sup>

**(v) Other submitters**

**Bulleen Switch**

Carey sports grounds are located on the west side of Bulleen Road and relied on Mr Young’s evidence regarding their concerns, principally related to site access, car parking, and proposed Bulleen Road access arrangements.

In Mr Young’s opinion access issues would be addressed with the Bulleen Switch option.<sup>110</sup> This provides vehicle access to the Carey sports ground via a new internal road and signalised intersection at Bulleen Road; noting that further traffic modelling is required to ensure peak traffic loading associated with the sports grounds are considered (generally weekends). Replacement or compensation for car parking would require further consultation, however, he noted that there was no opportunity to provide additional parking within the site as ‘spare’ areas were already used for informal parking.

Marcellin College relied on Ms Dunstan’ evidence who also agreed that the proposed Bulleen Switch option addressed many of Marcellin’s traffic access issues. In particular providing signalised access onto Bulleen Road and a service road in front of the school provided access to the Manningham Club and the proposed Bulleen Park and Ride facility, however the loss of direct Bulleen Road frontage was a concern. She concurred that the traffic signals would need to be modelled based on peak school traffic loadings (drop off and pick up periods).

<sup>109</sup> Tabled document 244, slide 16.

<sup>110</sup> Document 102.

Manningham Club relied on Mr Gnanakone's evidence who was generally satisfied with the Bulleen Switch proposal noting that primary access to and from the Club was via Bulleen Road which would be maintained. Loss of on-site parking would need to be resolved.

### 3.5.2 Discussion

The Reference Design reflects one possible project design solution which in part, allows the environmental effects of the Project to be assessed. The tender process is anticipated to realise an optimal and superior design outcome. The difficulty is the community can only 'see' a Reference Design.

In this regard, ongoing consultation led to an alternative design being developed for the Elder Street/Watsonia Station access arrangements – this received more support than the Reference Design, though there was still considerable discussion on 'fine tuning' this design.

Similarly, at the southern end of Bulleen Road, there was considerable angst from abutting landowners with the Reference Design. The 'Bulleen Switch' option was presented, which showed some improved access to nearby schools but was ultimately refined again to include access to the Bulleen Park and Ride, Manningham Club, and Marcellin College no longer had a road running across their oval providing access to the Manningham Club.

As with the Watsonia alternative design, there was some support for the Bulleen Switch as it removes the need for the temporary access road; but this support was not universal.

The IAC reflected on Mr Morris's opening comments that to test the Proponent is not a bad thing. However, in relation to testing the Reference Design, Mr O'Brien with extensive experience was not really provided with that opportunity on behalf of the Councils. Providing Mr O'Brien with the Computer Aided Design files/model (instead of PDF plans) and relevant data would allow him to truly test, and potentially yield a superior design or design elements which can be considered by the tenderers.

It is essential that infrastructure assets are used to their fullest and best ability. In relation to freeways, managed motorways, using a variety of technology and real time monitoring is appropriate and contemporary.

The fundamental difference between the Proponent and Mr O'Brien would appear to be Mr O'Brien believes ramp metering and signage would be enough, while the Proponent has also included using CD and braided lanes (which contributes to the wider cross section). On questioning from the IAC, the DoT was unable to specify how much each element of the managed motorway contributed, rather it was a compilation of physical measures and technology working together that realises the benefits. In relation to CD lanes, the Technical Report A – Traffic and Transport:<sup>111</sup>

This assessment does not take into consideration the further road safety benefits on the collector-distributor lane arrangements as there is insufficient data available to determine a suitable crash rate. However, it is likely there would be further reductions in crashes due to the separation of movements

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<sup>111</sup> Technical Report A – Traffic and Transport 9.27 Crash Assessment p 342.

The IAC is aware that CD lanes, while a relatively new concept in Australia have been used for decades in other parts of the world. The bane of freeway operations is traffic merging and weaving generating traffic turbulence (which also is an integral component of a freeway to allow motorists to enter and leave) and managing this. Using CD lanes would contribute to a safer and more productive facility.

VicRoads (now DoT) current design guidelines and documents include some information on CD lanes and targeting Level of Service D (which has also been used on other projects). In light of the above, the IAC believes the fundamental tenets of the Reference Design are reasonable to meet the road transport evaluation objective.

There was considerable debate regarding road safety and compliance with guidelines and standards around the road design - tenderers will be required to undertake road safety audits to make their design safer. At this stage, the IAC was more concerned with the overall design intent and would have gained little benefit of examining the Reference Design road safety audit findings.

Ms Marshall's Ratio alternative for Manningham Road has merit and as Mr Townshend noted, the Proponent would further review her concept to ascertain its feasibility, in particular ensuring ramp grades could be achieved while ensuring appropriate grade separations. Considering the fluid nature of future land use and development of the BIP, the IAC notes Ms Marshall's suggestions for possible access arrangements but believes this work should be considered when master planning for this location occurs.

Some arterial roads providing Project access will experience increased traffic flows. Mr Kiriakidis highlighted that the suite of EPRs for ongoing monitoring of the surrounding road network would provide a mechanism for remedial works. These could be undertaken locally to address potential capacity or congestion issues which may be attributed to the Project. The IAC believes this mechanism is appropriate.

As discussed, the Proponent's Alternative designs presented through the EES and Hearing, on balance, are considered superior to the Reference Design. Ms Marshalls' and Mr O'Brien's work should also be provided to tenderers as it may seed ideas and contribute to superior and less land hungry solutions being realised.

### **3.5.3 Findings**

The IAC finds:

- The traffic functionality design principles used for the Reference Design are appropriate, but will need to be balanced against the environment effects as discussed elsewhere in this report
- the Project alternative designs are considered to have superior elements to the Reference Design
- Ms Marshall and Mr O'Brien's alternative designs should also be considered and provided to the tenderers.

### **3.6 Tunnel options**

Extended tunnel options are seen as a superior solution to the Project's adverse impacts and understandably so. Tunnels move traffic away from homes, reduce/remove traffic noise,

and have virtually no impacts above ground (assuming TBM construction). The majority of construction activity is occurring below ground further minimising impacts.

Extended tunnel options, with understandably significant community support, were suggested. However, a multi-disciplinary team of professionals are necessary to ensure designs are feasible and can practically be delivered. Tunnelling is also time consuming (it takes around 18 months to set up and commission and a further 12 months to decommission a tunnel boring machine)<sup>112</sup> and costly with some estimates suggesting \$1 billion per kilometre to provide a fully fitted out twin - three lane road tunnel.

There were two extended tunnel options which provided preliminary information and design concepts:

- Mr Buono SMART taxpayer design
- BabEng for Banyule.

Other submitters provided more generic, concept ideas, generally requiring longer tunnel alignments starting or finishing at the M80 Ring Road or Eastern Freeway.

The Project Reference Design tunnel components are show in Figure 13.

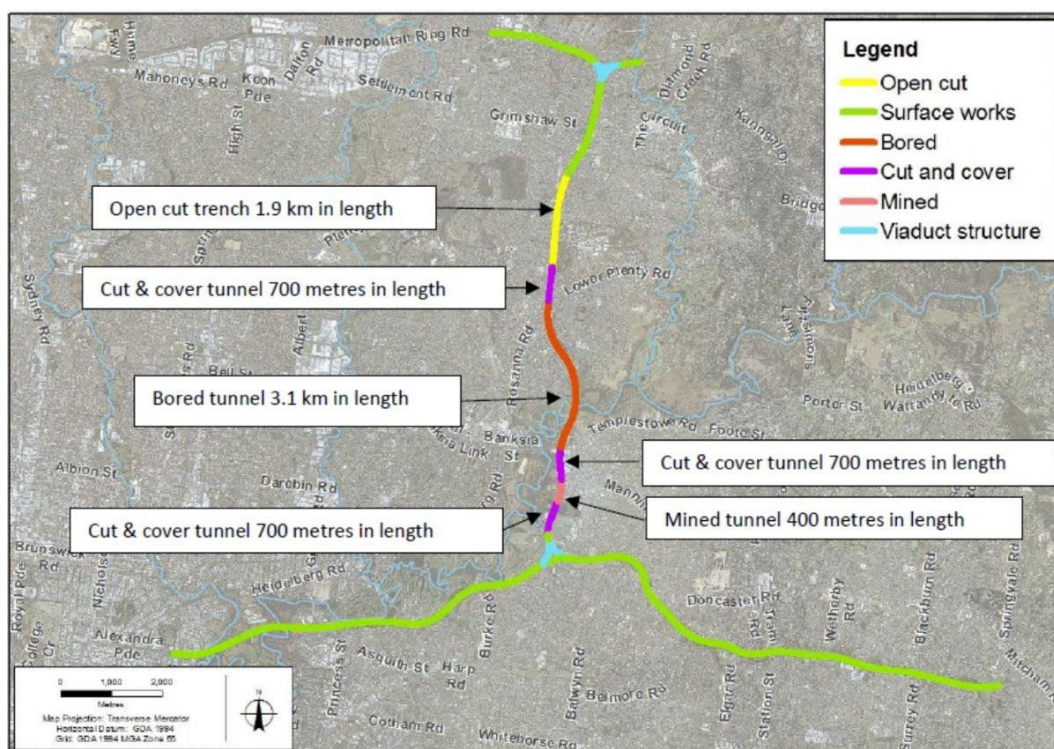


Figure 13 North East Link Project Reference Design tunnel components<sup>113</sup>

<sup>112</sup> West Gate Tunnel Project site inspection.

<sup>113</sup> Tabled document 28h, Figure 1, page 6/23.

### 3.6.1 Evidence and submissions

#### (i) The Proponent

The Proponent had considered longer tunnel options, but these were discounted due to significant impacts on:<sup>114</sup>

- project cost
- duration of construction
- land acquisition.

The Proponent noted that the BabEng solution would result in similar loss of vegetation and habitat through Simpsons Barracks and Borlase Reserve and the Lower Plenty interchange would require redesign. Little detail was provided on how the northern portal would connect back to surface level south of Grimshaw Street or the extent of property acquisition.

As part of these preliminary investigations, the Proponent had developed a similar option to the BabEng proposal (based on multi-disciplinary team inputs) as shown in Figure 14.

Its key points were:

- Necessary to construct a bypass road to maintain Greensborough Road traffic flow resulting in significant acquisition and occupation for several years of large portions of AK Lines Reserve and Watsonia Primary School.
- BabEng proposed a different configuration (Figure 15) which relocates Greensborough Road southbound lanes above and adjacent to the existing railway line. This would add considerable complexity and require further investigations to ascertain its viability (this concept was based on the SMART taxpayer design).
- It is acknowledged that there are considerably fewer surface impacts and this design avoided a range of other adverse impacts compared to trenched scenario.

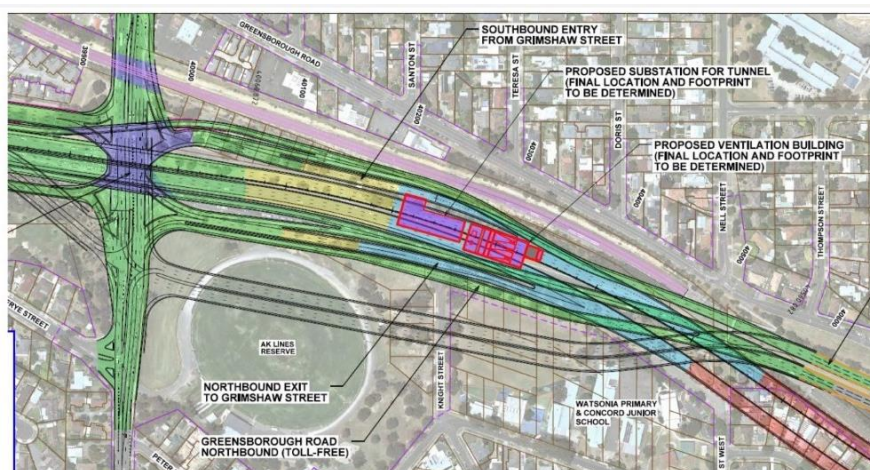


Figure 14 Detail south of Grimshaw Street<sup>115</sup>

<sup>114</sup> Document 98, Technical Note 30.

<sup>115</sup> Document 98, Technical Note 30 – northern extension of tunnelled section BabEng option B, Figure 4, page 5.



**Figure 15** Possible temporary diversion road at the northern portal<sup>116</sup>

The Proponent identified that the BabEng long tunnel proposal would cost an additional \$1.49 billion<sup>117</sup> more than the EES Reference Design and increase construction duration by approximately 18 months to two years (generally consistent with BabEng timeframes).

## **(ii) BBW Councils**

City of Banyule was concerned with the adverse impacts associated with the extent of road trenching and cut and cover tunnelling north of Lower Plenty Road. Banyule engaged Mr Babendererde (from BabEng), an international tunnelling expert, to develop an extended tunnel option to address these deficiencies.

Mr Babendererde believed that an extended tunnel option could be delivered, with the tunnel portal south of Grimshaw Street. Additional geotechnical investigations would be required but he did not foresee any geotechnical or construction issue that would prohibit extending the tunnels further north. His modelling suggested that the proposed road tunnels would not conflict with Hurstbridge rail line or other services. Key features of his design (Option B):

- extend TBM tunnels approximately 2.5 kilometres north, replacing the Reference design open trench roadway
- maintain all interchanges
- Similar cost to Reference Design (based in part on construction volumes and TBM related machinery costs not amortised into the tunnel extension).

He also reviewed Mr Buono's SMART taxpayer design, and from a tunnelling perspective, found it to be functional.

<sup>116</sup> Tabled document 28h, Figure 20, page 23/23.

<sup>117</sup> Document 388, Technical Note 54.

**(iii) BBW and Manningham Council**

Boroondara and Manningham Councils supported extending tunnelling to the Eastern Freeway with tunnel boring machines as this is likely to provide superior outcomes to the Reference Design.

This was one of the discounted but feasible longer tunnel options (EES Option B1). The Councils submitted this option should be reconsidered and weighted against the economic costs of acquiring replacement open space, replacement of facilities as well as the amenity cost imposed by the viaducts and the other externalities outlined in Mr Weston's and Dr Stubbs' evidence. If these costs were properly internalised, then the tunnel extension may be more economically attractive. Potentially a further assessment or review as part of the detailed design process should occur.

**(iv) Other submitters****Mr Fred Buono – SMART taxpayer design**

Mr Buono, an architect, approached the issue and problems from a people focused and human perspective to develop the SMART taxpayer design concept.<sup>118</sup> It was developed in consultation with the community and evolved through several iterations to best meet the local community aspirations; and be more aligned with the EES objectives. It's key features:

- Simplify and reduce the size and cost of the proposed M80 Ring Road interchange
- Extend TBM tunnels 3.2 kilometres further north to south of Grimshaw Street
- Redirect Greensborough Road over the rail alignment
- Allow a boulevard style treatment for Greensborough Road to improve amenity
- Do not construct the Lower Plenty Interchange but make allowance for it in the future.

Mr Buono's indicative cost estimate is around \$2.1 – 2.6 billion however there are cost savings not accounted for such as less land acquisition and other externalities.

There were several submissions supporting Mr Buono's SMART Taxpayer Design.

**Other submissions**

In response to community feedback, Mr Rod Barton MLC<sup>119</sup> believed a longer tunnel option was appropriate and advised that tunnelling costs vary and that his Parliamentary researchers suggest tunnelling costs are approximately 25 per cent of those suggested by the Proponent; he submitted tunnel construction costs were in the order of \$1 billion per kilometre. But it was essential to fully understand the total community cost of tunnel versus a no tunnel solution.

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<sup>118</sup> Document 197.

<sup>119</sup> Document 356.



## Other tunnel concepts

A few alternative tunnel extension ideas were presented including a tunnel option for the M80/Project interchange, Mr Reece's 'Willow Bend' tunnel<sup>120</sup> which connects into the Eastern Freeway, approximately 1 kilometre north of Doncaster Road (i.e. in the vicinity of Willow Bend, Doncaster). Others suggested minor amendments to the tunnel alignment to follow the Banyule Creek alignment.

### 3.6.2 Discussion

The IAC agrees that extending the tunnels provide significant and ongoing benefits to the local community while maintaining traffic capacity and functionality. However, the cost to provide fully functional twin three-lane tunnels appears to be in the order of \$1 billion per kilometre; a significant cost.

Bringing the tunnel back to the surface is critical and essential component and this is made more difficult due to the tight highly constrained environment which exists along this corridor.

The Proponent identified significant cost, land take, construction and access issues with the BabEng proposal. Mr Babendererde noted that his expertise was tunnelling and connecting back to the road network and other associated issues would require additional expertise. Similarly, Mr Buono had some support with civil engineering advice, but certainly both parties did not enjoy the Proponent's considerable technical expertise and resources to develop, and more importantly, evaluate tunnel options considering all relevant factors, such as the adverse impacts associated with the road trench solution against the additional cost, time and complexity of delivering longer tunnels.

The IAC acknowledges that the Proponent had developed alternative tunnel options and through an internal appraisal process, the Reference Design was considered appropriate for the EES evaluation and ultimately move forward to tendering. However, none of this material is before the IAC or the community.

It would have been beneficial for the IAC to understand this assessment. The key factors outlined by the Proponent such as, cost, extending construction an additional 18 months to two years and land acquisition are all valid, but it is difficult for the IAC to weigh these costs up against other externalities raised in submissions and Dr Stubbs' evidence.<sup>121</sup>

The IAC acknowledges Mr Buono's concept with a 'people focus' and wonders what his option truly could have delivered if he had additional technical resources to assist and further mould his concept. There were many elements and ideas that resonated with the IAC.

Mr Buono's work should also be provided to tenderers as it may seed ideas and contribute to superior design outcomes being realised.

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<sup>120</sup> Document 323b.

<sup>121</sup> See for example the IAC's position on Simpson Barracks in Chapter 6.

### 3.6.3 Findings

The IAC finds that:

- Extended tunnels options would realise significant benefits to the local community in environmental, amenity and planning terms
- While extended tunnels are clearly feasible, they would carry a significant additional cost, extended construction period and potential additional land acquisition
- The SMART taxpayer design concept should be provided to the tenderers.

## 3.7 Active transport

The Project includes around 25 kilometres of new and upgraded walking and cycling links including an eastern bike corridor, two new Yarra River crossings and completion of missing walking and cycling connections.

The majority of new walking and cycling paths are generally three metres wide sealed shared use paths linking to existing shared use paths. Where practicable, separated footpath and bicycle paths will be provided.<sup>122</sup>

Key Issues:

- greater use of separate paths for cyclists and pedestrians
- grade separated facilities should be implemented
- additional links or enhancements should be provided.

### 3.7.1 Evidence and submissions

#### (i) The Proponent

Mr Kiriakidis was satisfied that the Reference Design provides adequate links to existing cycling trails, including new shared paths or connections to the existing share paths.

He notes that the design outcomes of the Project EPR T1:

Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity and shared paths.

Mr Kiriakidis undertook an assessment of the active transport proposals to determine if these warrant consideration for inclusion in the Project's scope.<sup>123</sup> His findings are shown in Annexure C of his evidence.

Projects which warrant consideration by the IAC included:

- on-road bicycle lanes between Civic Drive, Greensborough and existing lanes on Heidelberg – Kinglake Road in Diamond Creek
- provide Shared Use Path in the shoulder trench at Drysdale Street, Yallambie
- pedestrian bridge across the Yarra River connecting Yarra Street, and Banksia Park
- short section of shared paths on Templestowe Road

<sup>122</sup> Transport and Traffic Impact Assessment 2019 p. 417.

<sup>123</sup> Document 24n. John Kiriakidis Expert Evidence 5.9.2 pp. 177- 179.

- shared Use Paths to Bulleen Park and Ride facility.

**(ii) BBW Councils**

Whitehorse is particularly concerned about the lack of improvement to active transport within the municipality; essentially the proposed works replace those existing facilities lost to the Eastern Freeway widening. To offset residual impacts of the Project Council considers that additional linkages which enhance the Koonung Creek Trail should be included such as:

- Construct a Strategic Cycling Corridor to Box Hill Major Activity Centre and Doncaster
- Improve connectivity, east side of Middleborough Road, Blackburn North
- New crossing across Koonung Creek in Eram Park to Tram Road Reserve.

Banyule has similar concerns, particularly to the La Trobe NEIC. Key connections include:

- East-west path connecting Austin Hospital/Heidelberg Station to Heide and Main Yarra Trail including Banksia Street grade separated crossing
- Lack of connectivity around Watsonia Village
- Shared path from Greensborough to CBD.

**(iii) Nillumbik Shire Council**

Nillumbik held concerns that the existing cycling infrastructure does not adequately regard the Principle Bicycle Network or Strategic Cycling Corridors north of, or abutting the Project study area, particularly given there are key attractors that would benefit from improved cycling infrastructure. Nillumbik also suggested a series of complementary projects which should be considered.

**(iv) Institute of Transportation Engineers Australian and New Zealand (ITEANZ)**

Mr Szwed, on behalf of the ITEANZ believes that the walking and cycling facilities along the freeway corridors should be to a high standard to demonstrate the importance of sustainable active travel.

A high standard facility should include separate bicycle and pedestrian paths and grade separation of the main trails, where practicable, so that users are not interrupted by traffic lights or road crossings.

The following high standard elements should be included:

- Provide continuous bicycle trail between M80 Ring Road and Eastern Freeway
- Upgrade Main Yarra and Koonung Creek trails
- Pedestrian and cycling access across the surface freeways.

Mr Szwed noted that while AustRoads guidelines suggest minimum standard and cross sections, this would not prohibit the Proponent from providing a higher level of service to active transport users, in particular, greater use of separated bicycle and pedestrian paths.

**(v) Other submitters**

A number of submissions were received from walking, cycling and representative groups with similar themes:

- Improvements to existing shared path infrastructure along Merri Creek, Main Yarra and Koonung Creek Trails
- Provide 'missing link' connections to other trails and key destinations such as Anniversary Trail
- Implement 'low stress' solutions such as grade separated paths
- Older walkers feel more comfortable and safer on dedicated footpaths
- unsealed footpaths, compared to concrete or asphalt, have a lower environmental heatsink effect.

Mr Carter, a member of the Boroondara Bicycle User Group provided a detailed submission<sup>124</sup> on a range of improvements summarised in Figure 16.

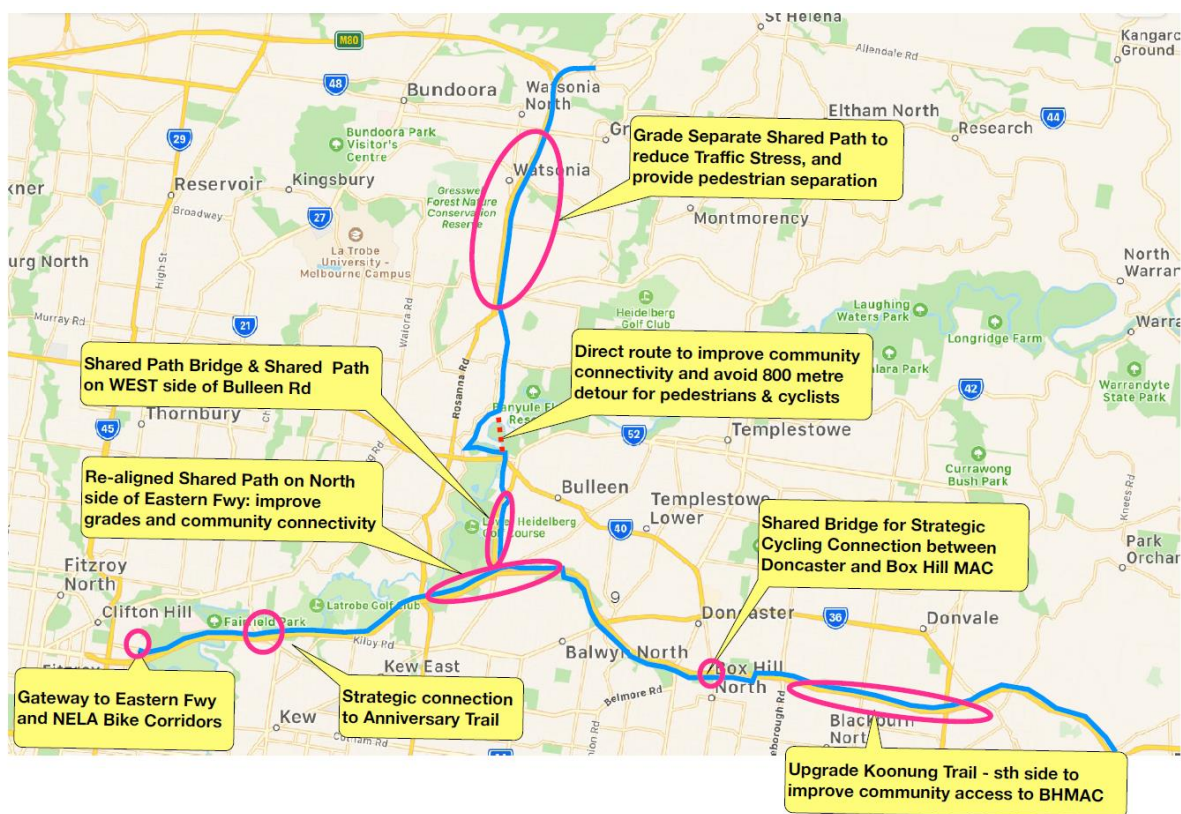


Figure 16 Key map of proposed alternative Projects for improving accessibility and safety for pedestrians and cyclists<sup>125</sup>

### 3.7.2 Discussion

Active travel is an essential component of the Project which includes some substantial improvements to trails along the corridor, in particular the Main Yarra Trail where a new bridge and more direct route modifications are proposed.

<sup>124</sup> Submission 29. and Document 274.

<sup>125</sup> Submission 29, slide 5.

There are recognised guidelines which from time to time are updated to provide guidance on the appropriate path size and type. The Proponent has flagged that in some locations, separated bicycle and footpaths will be installed, but on the whole, shared use paths will be provided, which are common around metropolitan Melbourne and are generally providing reasonable levels of service.

While fully separated bicycle and pedestrian facilities are worthwhile, this must be balanced against the additional space required. Further the use of unsealed paths, while reducing heat sink effects, are likely to require greater maintenance. Essentially these issues are best resolved during the detail design process in consultation with relevant council or government agencies.

The IAC acknowledges the benefits of grade separated facilities providing a superior level of service to cyclists and pedestrians and where practicable these should be explored. These works would be more costly to implement and appropriately, a benefit cost analysis would be required to ascertain the feasibility of such works. The proposed crossing locations, generally at signalised intersections still provide a reasonable service albeit, not to the level desired by some submitters.

The IAC can see that there is an extensive 'to do list' for additional shared path facilities, some of which are clearly beyond the scope of the Project and defers to Mr Kiriakidis' analysis of complementary projects. These should be considered by tenderers during further Project development.

### **3.7.3 Findings**

The IAC finds:

- The projects active travel linkages are reasonable
- Suggested complementary projects are worthwhile but need to be assessed on merit against Project criteria
- A combination of Shared Use Path and separated bicycle and pedestrian paths are appropriate.

## **3.8 Public transport improvements**

The Project does not shy away from its genesis that it is principally a road-based solution which needs to manage its effects on public transport.

The Project's key public transport component is a dedicated, predominately off-road, bus expressway along the north side of the Eastern Freeway with park and ride facilities at Doncaster Road (to be rebuilt) and Bulleen Road (new facility). These works are intended to improve connectivity, travel times and reliability into and out of the inner suburbs for commuters. This was generally not contested, however some submitters believed that further upgrading was appropriate.

Traffic modelling demonstrates that as traffic migrates to the Project, this provides additional capacity on many of the surrounding roads which should ultimately lead to better bus (and some tram) travel times and improved service for public transport customers.

The IAC accepts the Proponent's submission that it is outside the IAC's remit to consider other projects,<sup>126</sup> however considering the broad number of submissions suggesting public transport instead of the Reference Design, or public transport services enhancements, it is appropriate to review the submissions made to the IAC.

The significant themes in submissions were:

- greater improvements to public transport should be made to complement the Project
- public transport upgrades instead of a freeway solution
- the Eastern Freeway median should remain to allow for future rail services to Doncaster.

### **3.8.1 Evidence and submissions**

#### **(i) The Proponent**

Mr Kiriakidis reviewed the public transport issue in some detail. The Business Case identified that public transport enhancements did not realise the same benefits as the Reference Case. Providing additional and complementary public transport upgrades would need to be assessed against, in particular, the Public Works Order, Project scope and boundary, and requirements set out by the State.

Mr Kiriakidis agreed that upgrading and providing additional public transport services are appropriate and becoming increasingly important to encourage use of mass transport options, in particular considering Melbourne's ongoing growth. However, he reaffirmed DoT's position that integration of the Project into the broader transport network is the role and responsibility of DoT - it is not the Proponent's responsibility to necessarily improve current connections between communities.

In response to concerns regarding delays to road based public transport, Mr Kiriakidis was satisfied that that suite of EPRs provides a suitable framework for monitoring, review and implementing ameliorating measures as required, however noting that modelling suggested that there would generally be slight improvements or no change in travel times across the road network.

Extending, upgrading or providing new services would require careful consideration and ultimately need DoT approval.

Mr Kiriakidis noted that a future Doncaster Rail option would not be precluded by the Project;<sup>127</sup> the Doncaster Busway corridor dimensions are able to be retrofitted to accommodate rail and train stations in the future.

In relation to providing a public transport solution instead of the Project, this issue was not specifically addressed by the Proponent; rather it needed to be distilled from Mr Kiriakidis' and Mr Veitch's evidence.

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<sup>126</sup> Document 121 NELP Opening remarks para 17.

<sup>127</sup> EES Chapter 6 pp. 6 – 8.

Mr Kiriakidis submitted that as part of the business case – Strategic Option 3: Public Transport and Freight, considered public transport investments including increasing the SmartBus frequency, constructing a spur line from the Hurstbridge railway line to La Trobe NEIC and/or extending tram route 86. These were intended to improve orbital connectivity and reduce private motor vehicle traffic. However, he noted that the business case analysis found this option to be ranked third compared with the Reference Design.

Mr Kiriakidis also observed:

...that to keep up with Melbourne's growing population will require a range of interventions including major investment in transport<sup>128</sup>.

Mr Veitch had modelled the impacts of the Melbourne Metro Rail Tunnel Stage 2 and Suburban Rail Loop and found these projects would result in a negligible (less than two per cent reduction) on Project traffic volumes.

Mr Veitch identified the key reason for the minimal changes in traffic was the significant spread between origins and destinations of the communities in the north east, many trips being of an orbital nature (refer to Figure 17).

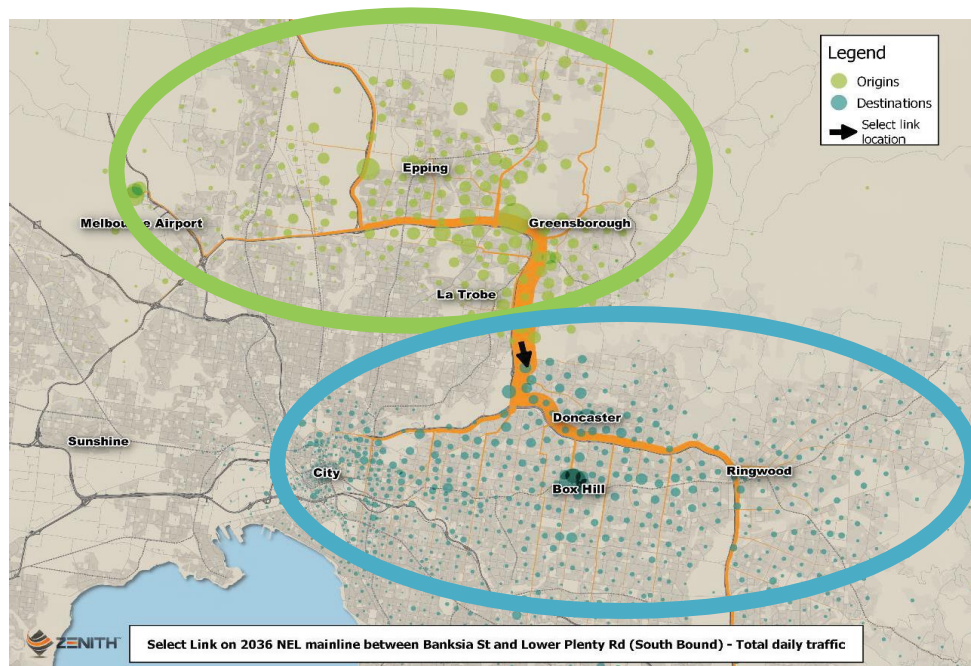


Figure 17 Origins and destinations of trips using North East Link, daily<sup>129</sup>

<sup>128</sup> Document 24n, John Kiriakidis Evidence p.38.

<sup>129</sup> Technical Report A, Figure 5.2, page 661.

**(ii) Department of Transport**

DoT advised that the Project:

...should be understood as being one component of a broader transport planning approach to meet Victoria's growing transport needs.<sup>130</sup>

And in particular, providing clarity on transport wide matters such as planning and transport system integration, the inter-relationship between the Project and the broader transport network.

Other transport infrastructure in the North East region includes Hurstbridge rail upgrade, removal of level crossings, Mernda railway line extension and a series of road upgrade projects.

Mr Connor advised that the Department had undertaken strategic bus network planning to understand the corridor issues and opportunities and inform the Reference Design. This provides flexibility for future service improvement plans and broader network integration.

Mr Connor noted that upgrades and enhancements to bus services are always worthwhile and the Department has a 'to do list' however further funding would be required, and these works need to be balanced against other competing and worthwhile projects in other regions.

Extensive investigations into further improving and complementing existing infrastructure to improve bus services along Hoddle Street and into the CBD have been undertaken but again, these works are subject to funding.

**(iii) City of Yarra**

Yarra held concerns that daily traffic on the Eastern Freeway could increase 'significantly' which may result in additional congestion and result in traffic filtering onto its street network. This would contribute to delays for street-based public transport with particular concern for buses travelling along Hoddle Street and potentially full-time bus lanes or other infrastructure was required to facilitate bus movements.

Further, public transport services should be expanded along Alexandra Parade.

**(iv) BBW Councils**

BBW Councils were concerned with the lack of rigour applied in the strategic justification of the Project and its relationship to public transport. A significant issue is the limited range of public transport services, and as such, bus services are particularly important.

In specific relation to the Project; there was a lack of detail on how the Doncaster Rail reservation would be preserved.

There is also a lack of complementary projects which should include public transport upgrades.

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<sup>130</sup> Document 177 Department of Transport submission par. 6



Whitehorse had particular concerns regarding public transport service levels considering the increase in traffic on many of the north-south roads connecting to the Eastern Freeway, including Springvale Road, Station Street and Elgar Road.

**(v) Manningham City Council**

Manningham submitted that additional bus services should be provided within the municipality and information regarding Doncaster Busway is lacking around:

- site footprints
- bus stops
- providing for future upgrade(s)
- how a future Doncaster rail will be maintained.

**(vi) La Trobe University**

Mr Tivendale on behalf of La Trobe University provided a detailed review of bus services surrounding and servicing the University. He identified poor connectivity, convoluted routes, and lack of service, amongst other things, as contributing to greater car ownership and congestion.

Put simply, in any other region of Melbourne, a better public transport network is provided<sup>131</sup>

He identified several new bus routes and improvements to existing routes that could be implemented to enhance services including bus routes across the Yarra River to Swinburne University and Box Hill.

La Trobe University would ultimately like to see Kingsbury Drive turned into a Boulevard with dedicated priority bus lanes and single traffic lane in each direction.

**(vii) Other submitters**

**Victorian Transport Action Group (VTAG)**

Mr Reece advised that VTAG is an independent transport discussion group made up of various professionals to discuss transport issues. VTAG would recommend a light rail service from Doncaster to the City but in light of the busway being proposed makes the following comments:

- the proposed design has too few stops and insufficient capacity (to be considered a Bus Rapid Transit System)
- no capacity for increased services along the Eastern Freeway and CBD
- currently 13 bus services use the Eastern Freeway but only 4 are Doncaster Area Rapid Transport (DART) services
- tram 48 (terminates at Balwyn Road and Doncaster Road) should be extended to Doncaster Hill.

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<sup>131</sup> Document 27a, Tivendale Evidence 4.16 p 10.

Suggested improvements include:

- modifications to Bulleen Park and Ride, in particular grade separation of busway and Thompsons Road and additional platforms
- separate bus lanes into Hoddle Street
- improving travel times from Victoria Park into the CBD
- additional bus stations (along Eastern Freeway corridor).

### **Public Transport Users Association**

Mr Morton submitted that the Project does not appear to have significant long-lasting benefits considering that congestion relief on nearby roads is often short lived. The Eastern Freeway median was reserved for rail transport 40 years ago as part of long-term planning and now it is being used for motor vehicles (the least space efficient method of urban transport) would be a planning failure. A greater effort should be made to continue the shift from cars to public transport.

### **Transport for Everyone**

Mr McLoughlin presented on behalf of Transport for Everyone, a not for profit organisation engaged in transport analysis and advocacy.

Transport for Everyone's key submission was that the Project failed to adequately contemplate the *Transport Integration Act 2010* objectives.<sup>132</sup>

The Project busway fails to integrate with public transport services beyond Hoddle Street or facilitate future services along Alexandra Avenue. There remains poor connectivity to other major public transport hubs or major activity centres/NEIC's.

### **General submissions**

Many submissions expressed a desire for improvements to public transport negating the need for a freeway or more generally, provide and encourage an alternative to using private vehicles. Several flagged the loss of the Eastern Freeway median would result in a lost opportunity to introduce the Doncaster rail line.

## **3.8.2 Discussion**

It is universally agreed that improvements, upgrades and additional public transport services are worthwhile and essential for a growing city.

This Project is essentially a road-based solution which is required to minimise adverse effects on existing public transport services. Traffic modelling demonstrates that once the Project is operational, many bus routes will experience improved conditions as traffic migrates away from the local and arterial road network, improving conditions along these roads.

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<sup>132</sup> The IAC addresses this issue in Chapter 1.5.3.

DoT is ultimately responsible for the public transport network and acknowledges the merit of many of the suggestions put forward, however budgetary constraints limit what can practically be achieved.

Business case modelling as well as more focused modelling by Mr Veitch identified that key public transport infrastructure projects such as Melbourne Metro Tunnel 2 and the Suburban Rail Loop project would only have a marginal impact on the Project's traffic volumes.

As part of the Reference Design, the Doncaster Busway including its capacity has been developed in conjunction with DoT. Further improvements and enhancements suggested by others may be realised through the tender process or developed at a later time by DoT.

The Doncaster Rail option remains live; the dimensions of the Doncaster Busway corridor are able to be retrofitted to accommodate rail and train stations in the future. Naturally these works would replace the busway.

### **3.8.3 Findings**

The IAC finds:

- Bus public transport users should experience improved conditions once the Project is operational.
- There is scope to enhance, extend and improve regional services however this is the responsibility of DoT and subject to ranking and funding requirements.
- A public transport led solution would not negate the need for the Project.

### **3.9 Nell Street closure at Greensborough Road**

Nell Street will be closed, and Greensborough Road truncated in the Reference Design to accommodate the Project (freeway in trench section). This will result in a local redistribution of traffic in the local area. The proposed works are shown in Figure 18.

Key issues:

- Adverse impacts on resident access
- Redistribution of traffic will adversely affect local streets
- Local streets should remain open and the Reference Design is modified.



Figure 18 Map Book extract in vicinity of Watsonia<sup>133</sup>

### 3.9.1 Evidence and submissions

#### (i) The Proponent

The Proponent advised that the Project design includes the truncation of Nell Street from Greensborough Road (service road) due to limited space to construct the Project freeway component at this location.

Mr Kiriakidis examined this issue closely and sought further information<sup>134</sup> from the Proponent who identified that a high proportion of traffic along Nell Street is bypassing Grimshaw Street (of the 1,500 vehicles per day, approximately 1,000 vehicles per day are westbound which he suggests vehicles are rat running on the local streets). This is likely given current day congestion. A portion of this demand is expected to re-route back to Grimshaw Street through improved network performance under the 'with project' outcome. His opinion is the forecast traffic redistribution would be manageable and local area traffic management works be implemented in consultation with Council. Mr Kiriakidis considered the EPR's provides adequate protection against potential adverse impacts.

#### (ii) City of Banyule

Banyule did not support the local road closures at Greensborough Road as it will create unacceptable changes to traffic volumes and traffic. It submitted the Reference Design should be amended to retain access.

<sup>133</sup> EES Project Map book, sheet 8 of 42.

<sup>134</sup> Document 24n, Mr Kiriakidis Evidence SmedTech memo Nell Street Truncation page 291.

### **(iii) Other submitters**

Several community submissions were received regarding the proposed modification and road closures at Nell Street and Greensborough Road service road.

Key issues:

- Redistribution of traffic will have adverse impacts
- Other streets (such as Doris Street) are too narrow to accommodate additional traffic
- Loss of access.

### **3.9.2 Discussion**

The IAC would like to see Nell Street remain open, and has already expressed the view that the O'Brien and SMART designs should be provided to the tenderers for their consideration (in part because Nell Street remains open in both options). If this cannot occur, can the traffic redistribution associated with the road closures be managed?

The IAC accepts that traffic surveys suggest rat running occurs on the local street network, in particular Nell Street. Once the Project is operational, there should be an overall improvement in local traffic conditions as rat running diminishes. However, the EPR's require traffic monitoring to occur and if adverse traffic conditions occur, then a local area traffic management strategy would be required in consultation with Council. The IAC believes this approach is appropriate and reasonable.

### **3.9.3 Findings**

The IAC finds:

- Potential adverse impacts associated with Nell Street closure can be managed appropriately with the proposed EPRs.
- Subject to a review of ongoing traffic monitoring, a Local Area Traffic Management Strategy may be required.

### **3.10 Rosanna Road truck ban**

There was a significant cohort of resident submissions seeking safety and amenity improvements along Rosanna Road with the majority seeking a full-time truck ban.

Key metrics from the transport modelling for Rosanna Road are shown in Table 4:<sup>135</sup>

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<sup>135</sup> Report A Traffic and transport page 406.

**Table 4** Rosanna Road truck volumes

	Total Average Weekday Truck Volume			
	2017	2036 No Project	2036 with Project	Reduction between No and with Project
All traffic	39,000 – 50,000	41,000 – 54,000	31,000 – 41,000	24%
Trucks only	2730 - 3500	3700 - 4860	1250 - 1640	64 - 67%

Other key metrics include:

- 10 to 17 minutes travel times savings along Greensborough Road/Rosanna Road/Bulleen Road corridor when the Project is operational<sup>136</sup>
- Less than two per cent of truck fleet (Over-Dimensional (OD)<sup>137</sup> and placarded trucks) would need to remain on Rosanna Road.

### 3.10.1 Evidence and submissions

#### (i) The Proponent

Greensborough Road/Rosanna Road/Bulleen Road corridor is the only approved route through the north east for OD trucks. It is not proposed to introduce truck bans as this route will still be used by some trucks not permitted to travel through the tunnels.

Traffic surveys and modelling show that 89 per cent of trucks along this corridor are ‘through’ movements – trucks that are travelling between the M80 Ring Road and Eastern Freeway.

Mr Kiriakidis’ opinion was that the Project would provide a reliable, high capacity alternative which will deliver a significant redistribution of trucks from the local arterial network (including Rosanna Road). Removing significant truck numbers from Rosanna Road will improve traffic flow, amenity and road safety outcomes.

Once the Project is operational, traffic modelling of a full-time truck ban along Rosanna Road demonstrated that trucks would divert to curfew free roads such as Manningham Road and the Project.

Mr Kiriakidis considered alternative OD routes including Plenty Road, Albert Street, Bell Street and found these routes to be more circuitous, supported access to existing activity centres, shopping strips or have other geometric constraints. Most importantly the existing route is the shortest route to other freeway standard roads.

#### (ii) Department of Transport

Mr Connor advised that DoT does not support additional truck bans along Rosanna Road.

<sup>136</sup> EES Traffic and transport 9-85.

<sup>137</sup> Vehicles that exceed five metres high or wide, 30 metres long or 100 tonnes total weight.

For trucks in excess of 16.5 tonnes, nightly truck curfews 10pm to 6am were introduced along key arterial roads in Melbourne's North East (including Rosanna Road) in 2015 attempting to balance the needs of residents and truck operators. The curfews reduced night time truck volumes on these roads.

The curfew does not apply to trucks doing local deliveries.<sup>138</sup>

No changes are proposed to the truck curfews as Rosanna Road provides an important travel route and has an important function in the overall freight network for heavy vehicles including OD and placarded (carrying dangerous material(s), i.e. petrol tankers) vehicles. The Department estimate that Rosanna Road may carry around two OD vehicles per day (note: Mr Kiriakidis estimated 3 to 4 OD and placarded vehicles).<sup>139</sup>

The geometry of Rosanna Road and Greensborough Highway corridor remain appropriate as it has:

- grades which provide better efficiency and safety
- the most direct arterial road connection.

Without this designated route, freight vehicles would be diverted onto other roads in the region which are unable to cope with OD and placarded vehicle requirements, or potentially result in trucks travelling longer distances.

In 2015 VicRoads (now DoT) considered a number of other roads including Bell Street, Plenty Road, Albert Street and found these roads to be unsuitable as an OD route.<sup>140</sup>

### **(iii) City of Banyule**

Banyule believes, if the Project is approved, that all truck routes on existing arterial roads between the M80 Ring Road and Eastern Freeway should be reviewed and the North East Truck Curfew within Banyule should be extended to 24 hours.

### **(iv) Other submitters**

Key submissions were made by Resolve Rosanna Road<sup>141</sup> which also encompasses many of the issues raised in other submissions around this topic.

Ms Reifschneider representing Resolve Rosanna Road suggested that a full-time truck curfew along Rosanna Road is required as residents do not feel safe (some are frightened)<sup>142</sup> driving or walking. This is principally due to high truck volumes in conjunction with narrow traffic lanes (at some locations truck wing mirrors extend beyond the traffic lane into the adjoining lane or striking power poles and other infrastructure) and the narrow nature strips bringing pedestrians closer to the traffic lanes.

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<sup>138</sup> *Road Rule 104(4)*.

<sup>139</sup> Document 24n, Mr Kiriakidis evidence Table 5.21 page 172.

<sup>140</sup> Document 427, Depart of Transport Supplementary submission para. 5 – 7.

<sup>141</sup> Document 333.

<sup>142</sup> Document 333, page 19.

Resolve Rosanna Road presented several photographs (See Figure 19) and short videos which clearly showed these issues and referred to the Road Safety Audit of Rosanna Road dated 7 March 2016 undertaken by Safe System Solutions on behalf of VicRoads.<sup>143</sup>



Figure 19 Oversized truck on Rosanna Road<sup>144</sup>

Ms Reifschneider noted VicRoads Rosanna Road - Road Safety Improvement program which includes 40 km/h speed limit, new pedestrian crossings and traffic signals but fails to address the fundamental issue; narrow traffic lanes and truck traffic are incompatible. Their view is that without costly property acquisition, Rosanna Road cannot be widened to provide appropriate lane widths and consequently, *“trucks should be using the Project instead, which is designed for trucks!”*<sup>145</sup>

She submitted Rosanna Road’s limitations require a full-time truck curfew to incentivise trucks to use the Project, as well as removal of the OD route status. She noted that full-time truck curfews on some local roads are now part of the West Gate Tunnel Project and Rosanna Road should be entitled to similar treatment.

For the same reasons, Resolve Rosanna Road submitted that Rosanna Road should not be used as a haul route during construction; additional trucks would result in greater number of crashes, further damage to infrastructure and the community feeling more unsafe.

<sup>143</sup> Document 271e.

<sup>144</sup> Tabled document 271a, slide 11.

<sup>145</sup> Document 333a. Presentation slides with speaking notes p. 20



Banyule Ratepayers Action Group suggested installing peak hour reversible lanes along Rosanna Road, similar to Johnston Street, Collingwood which may help alleviate congestion and improve safety.<sup>146</sup>

### 3.10.2 Discussion

The community surrounding Rosanna Road will realise significant benefits once the Project is operational in terms of reduced traffic and significantly less trucks leading to improved amenity and safety outcomes.

However, Rosanna Road remains geometrically challenged with narrow traffic lanes, roadside infrastructure such as poles being too close to the roadway being regularly struck by trucks and narrow nature strips. The VicRoads commissioned Road Safety Audit also identifies these issues – however they are impractical and costly to address unless major road widening, and land acquisition occurs to allow a contemporary road cross section to be provided. For example, 4.2-metre-wide kerb side lanes are desirable where there are high truck volumes compared with current 2.8 – 3.2 metres lane widths.<sup>147</sup>

Introducing a reversible lane, similar to Johnson Street may not be feasible due to road geometry and significant tidal traffic flows which make these systems practicable does not occur – essentially Rosanna Road is busy for most of the day in both directions.

The IAC accepts that DoT has endeavoured to find a compromise with night time truck curfews and that significant work has been undertaken which identifies Rosanna Road as the preferred OD route. However, it is anticipated to carry very few OD and placarded trucks per day. Mr Kiriakidis essentially agrees with these findings in his evidence.

However, this does not address the real and current issues flagged by residents – the most practical solution appears to be to construct the Project which results in a significant reduction of traffic (approximately 25 per cent) and trucks from Rosanna Road.

Once operational, further investigations should be undertaken (including Origin – Destination studies to determine the level of non-local truck traffic on Rosanna Road) to ascertain if other road management measures such as a full-time truck curfew or extended curfew times are required. It is appropriate, considering Banyule’s more broad concern that this includes all truck routes as part of the North East Truck Curfew. The IAC agrees these future investigations would be DoT’s responsibility and not the Project.<sup>148</sup>

The TBM launch site has significant impact on haulage routes and truck numbers. A southern launch site results in an anticipated peak truck haulage of 1,450 spoil trucks per day, while a northern launch site results in only 60 spoil trucks per day along Rosanna Road.<sup>149</sup> While the IAC accepts 60 extra trucks would be reasonable considering the scope of this Project, 1,450 trucks is an unacceptable impact. The Proponent should further explore

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<sup>146</sup> Submission 463, Banyule Ratepayers Action Group.

<sup>147</sup> Document 271 e, Safe System Solutions Road Safety Audit Table 5 page 18.

<sup>148</sup> Document 434, NELP closing submission para 139 (f) page 63.

<sup>149</sup> EES Chapter 9 Figures 9-22 and 9-23 pp. 9 - 49-50.

alternatives of utilising other haulage and access routes which may be longer but may have less community impact.

Based on the BIP, potentially having a small reprieve to allow more time for relocation; this would result in the northern TBM launch site being adopted and as a consequence, Rosanna Road may experience less construction traffic.

### **3.10.3 Findings**

The IAC finds in relation to Rosanna Road:

- It will experience improved amenity and safety once the Project is operational.
- It should remain as an OD route.
- DoT should review truck volumes to ascertain if further truck curfews should be put in place once the Project is operational.
- Its use as a haulage route should be reviewed and alternative routes adopted.
- DoT review North East Truck Curfew truck routes to extend curfew to 24 hours.

## **3.11 Construction traffic impacts**

This Project with an estimated construction period of around six to seven years generated significant concern and uncertainty in the community. While traffic impacts are reviewed here, other construction related issues are covered elsewhere:

- Visual - Chapter 7
- Noise - Chapter 8
- Air quality - Chapter 9.

Key construction traffic impacts issues are:

- Haulage routes and associated impacts on road network
- Disruption and diversions to local access
- Construction traffic utilising local roads
- Parking impacts (construction personnel and construction works).

### **3.11.1 Evidence and submissions**

#### **(i) The Proponent**

The Proponent acknowledged a project of this size will have significant impacts on local communities and the road network. They have undertaken extensive investigations and traffic modelling to:

- Minimise adverse impacts
- Ensure the road network can continue to operate and accommodate additional construction traffic.

Mr Kiriakidis noted that Traffic and Transport Impact Assessment and EES assessed the potential construction impacts based on the Reference Design which included a range of assumptions (i.e. construction methodology, and timelines). The final contractor may propose an alternative project delivery plan with consequent changes to environmental effects.

In reviewing the Reference Design, Mr Kiriakidis made the following observations:

- Forecast construction traffic is generally manageable
- Potential haulage routes, with possible truck haulage to occur outside of peak periods is appropriate. Traffic is one consideration and a multi-disciplinary holistic approach to determine preferred route(s) should be undertaken
- Estimated truck traffic (two vehicles per hour) on the local road network around key compounds is manageable
- The use of Rosanna Road for some haulage is reasonable
- Consideration of abutting sensitive receptors and the use of local streets would need to be considered as part of any construction traffic management plan
- Construction staff shift changes are likely to occur prior to the AM peak, however there may be some overlap in the wider evening peak. The extent of the problem, if any, would be dependent on specific network operations and the workforce size at each location
- Staff parking for construction personnel will generally be provided within site compounds, and loss of parking due to construction would need to be managed and off-set where practicable
- Sometimes road closures will be unavoidable but alternative access arrangements would need to be provided as part of any Construction traffic management plan.

In relation to La Trobe University concern that traffic would divert onto Kingsbury Drive during the construction period, Mr Kiriakidis identified that traditional construction traffic management measures including Variable Message Signage could be employed to assist in identifying preferred detour routes. He also noted that modelling identified that Kingsbury Drive would carry less traffic once the Project was operational.

Mr Kiriakidis considered several of the EPRs, requirements for Traffic Management Plans and Traffic Management Liaison Group provide a suitable framework to mitigate adverse construction impacts.

## **(ii) BBW Councils**

Banyule was particularly concerned about how Watsonia Shopping Centre will be affected during construction activities.<sup>150</sup> It is essential that Watsonia Shopping Centre and associated car parking be given high priority as major construction works have the potential for significant adverse impacts particularly:

- Changed and restricted access
- Construction traffic
- Loss of car parking.

Councils also covered similar issues to those raised by individual submitters as outlined in Section (v).

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<sup>150</sup> The IAC addresses this at length in the Business impacts chapter.

**(iii) Manningham City Council**

Manningham also covered similar issues to those raised by individual submitters which are outlined in Section (v).

**(iv) La Trobe University**

La Trobe University were concerned that Kingsbury Drive may need to be duplicated due to additional traffic which may divert onto it during construction.

**(v) Other submitters**

A range of submissions were received, however the general themes related to:

- Adverse impacts on congestion, road safety, and amenity associated with construction traffic
- Adverse impacts on local streets (including banning construction traffic from selected local streets)
- Limit truck haulage routes, or implement truck bans during construction on Rosanna Road and avoid routes in front of schools, and other sensitive uses
- Shift changes leading to spikes in traffic, particularly coinciding with arterial road network peak hour(s)
- Parking impacts
- Road closures
- Maintaining pedestrian and vehicular access (including schools and sports grounds).

**3.11.2 Discussion**

The IAC acknowledges that a project of this size and complexity will generate negative outcomes during the construction phase for up to seven years, such as additional construction traffic, temporary road closures, access impacts and the like.

The analysis and review undertaken by the Proponent and Mr Kiriakidis' peer review appear thorough and comprehensive; acknowledging that the final contractor may adopt different construction methodology and timings than those outlined in the Reference Case. The construction traffic management issues while challenging are not insurmountable.

Melbourne for some time has experienced and lived through the delivery of major infrastructure projects. In this regard, there is extensive experience and understanding in government agencies and contractors in how to deliver major projects while balancing community expectations and needs.

At this stage, specific details, definite timeframes, construction methodology is not available, and in many respects, are beyond the IACs remit. These matters will ultimately be resolved by the contractor in consultation with key agencies and councils. In this regard, the proposed suite of EPRs provide a suitable framework to ensure appropriate outcomes would be realised.

The IAC appreciates La Trobe’s vision for Kingsbury Drive to be duplicated and ultimately incorporate Boulevard features and priority bus lanes,<sup>151</sup> however Kingsbury Drive duplication is not warranted due to the Project. Construction works may result in some motorists detouring along this route; however, investigations have not identified this as an issue and there are a range of temporary traffic control measures available to manage traffic flows.

### **3.11.3 Findings**

The IAC finds:

- Construction traffic management issues are manageable.
- The suite of EPRs, requirements for Traffic Management Plans and Traffic Management Liaison Group provide a suitable framework to mitigate adverse construction traffic impacts.

### **3.12 Recommendations**

The IAC has recommended that alternatives put forward by the Proponent and others in the Hearing be considered during detailed Project design. The IAC has also recommended that further work be done to review the use of Rosanna Road during construction and operation, and further consideration of Active Transport projects be undertaken through Project development.

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<sup>151</sup> Document 287 La Trobe University submission slides 12 and 13



## 4 Business impacts

Business impacts are addressed in the EES in Chapter 14 and Technical Report F prepared by GHD and Matters More.

The evaluation objective for social, business, land use and infrastructure is:

To manage effects of the project on land use and the social fabric of the community with regard to wellbeing, community cohesion, business functionality and access to goods, services and facilities.

The following evidence was called in relation to business impacts:

- The Proponent – Marianne Stoettrup from Matters More
- Manningham – Brian Haratsis from Macroplan.<sup>152</sup>

The following evidence was called in related fields that discuss business impacts:

- The Proponent – Michael Barlow from Urbis in land use planning
- The Proponent – Glenn Weston from Public Place in social impacts
- Manningham – Dr Judith Stubbs from Judith Stubbs & Associates in social impacts.

A conclave was held on 26 July 2019 attended by Mr Barlow, Ms Stoettrup and Mr Haratsis.<sup>153</sup>

The Project benefits for business at a city-wide and regional scale are numerous and significant; largely related to ease of access and freight movement. More specifically the EES considers them to be, in summary:<sup>154</sup>

- more productive businesses through better access for workers, businesses, suppliers and customers
- more efficient cross city freight movement from the north to the south east including better access to Melbourne Airport and improved access for High Productivity Freight Vehicles (HPFV); as well as freeing capacity on the M1 corridor.

The Project is very large and traverses a combination of urban, commercial, open space and natural areas. Consequently, there are significant impacts and impacts on business are an important component.

The number of businesses along the alignment (within 200 metres of the Project area) are shown in Table 5 below. Some impacts are likely to be experienced during construction; while others will be permanent due to property acquisition.

<sup>152</sup> Mr Haratsis' work was jointly funded by Manningham and the Proponent.

<sup>153</sup> Document 108.

<sup>154</sup> Summarised from EES Section 2.6.

**Table 5 Business number and type by precinct<sup>155</sup>**

Precinct	Number of businesses <sup>2</sup>	Key locations	Main business types
M80 Ring Road to northern portal	81 businesses	Watsonia Village	Retail trade
		Greensborough Road Grimshaw Street businesses	Health care and social assistance Accommodation and food
Northern to southern portal	118 businesses	Bulleen Industrial Precinct	Retail trade (automotive services)
			Construction
			Arts and recreation Education and training
Eastern Freeway	61 businesses	Joseph Road	Retail trade Professional and technical services Arts and recreation

## 4.1 Key issues

Having reviewed the EES, evidence and submissions, the IAC considers the key business impact areas are:

- the Bulleen Industrial Precinct
- the Watsonia Neighbourhood Activity Centre
- other business impacts.

## 4.2 Bulleen Industrial Precinct

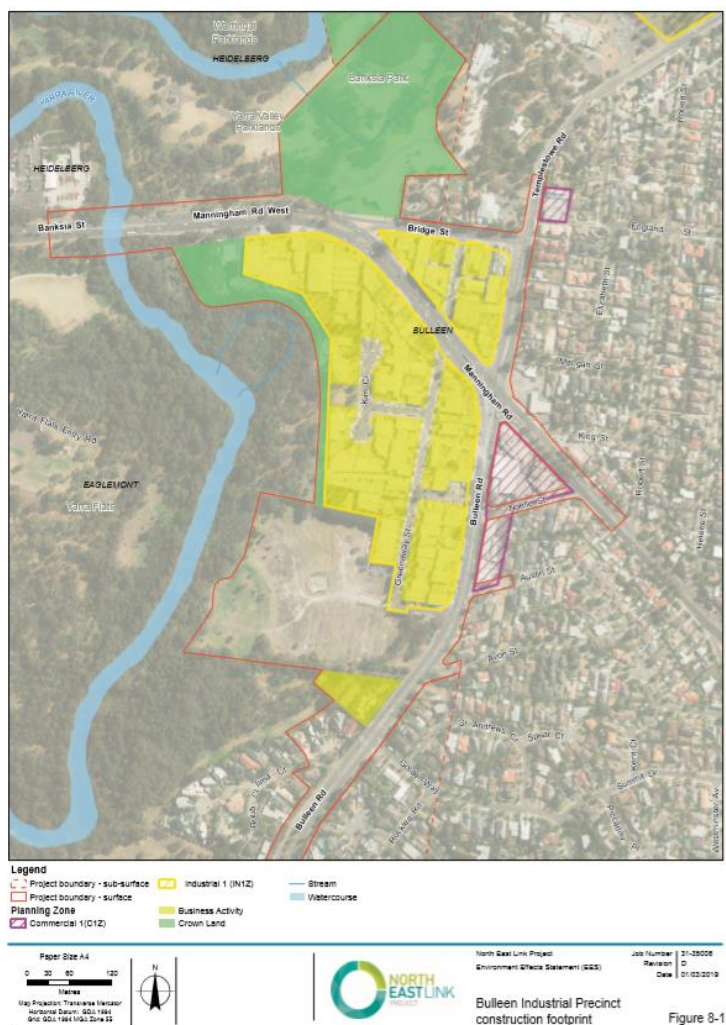
### 4.2.1 Background

The BIP is a triangular area bounded by Bulleen Road, Bridge Street and Yarra River environs, and is bisected by Manningham Road in Bulleen in the City of Manningham (Figure 20).<sup>156</sup> The majority of the BIP is in the Industrial 1 Zone (IN1Z) although most uses can be categorised as light industrial or commercial. One business, BAAG, at the far western end of the BIP is in the Public Conservation and Resource Zone (PCRZ) on Crown land.

<sup>155</sup> EES, Technical Report F, Executive Summary, Table 3, page viii.

<sup>156</sup> There are small commercial areas east of Bulleen Road which are not expected to be directly affected by the Project.





**Figure 20** Bulleen Industrial Precinct construction footprint aerial image<sup>157</sup>

The Project includes a significant freeway interchange between the North East Link and Manningham Road. The need for, and desirability of this interchange is discussed in Chapter 3 in relation to traffic.<sup>158</sup> Apart from a possible TBM launch/retrieval site north of Bridge Street, all of the land north of Manningham Road/Bridge Street is a Project “no-go zone” on ecological and landscape grounds relating to the Yarra River environs.<sup>159</sup> The consequence of this is that all of the interchange is proposed on land comprising the BIP, leading to its complete acquisition. Much of the BIP is proposed to be used as a construction area.<sup>160</sup>

The EES estimates this acquisition will remove approximately 80 businesses, with a direct employment loss of 770 people<sup>161</sup> or 31 per cent of local employment in the Bulleen

<sup>157</sup> EES Technical Report F, Figure 8-1, page 92.

<sup>158</sup> Several alternative designs were put to the IAC during the Hearing as discussed in Chapter 3. All these designs appear to result in the need to use all the BIP land for construction and/or operation.

<sup>159</sup> Discussed in Chapter 6 of this report.

<sup>160</sup> See Document 166.

<sup>161</sup> Technical Report F, page 70.

Statistical Area.<sup>162</sup> Work undertaken for Manningham suggests the direct economic loss to the area could be up to approximately \$132 million if all businesses were to close or relocate from this municipality.<sup>163</sup>

Depending on the eventual Project design, some of the BIP land may be available for commercial or industrial land use post construction since it would not be required for permanent infrastructure.

#### 4.2.2 Evidence and submissions

Manningham supported an interchange at Manningham Road but submitted that EPRs proposed with the EES would not adequately address the economic and social impacts associated with acquisition.<sup>164</sup>

It submitted that the scale of job loss is larger than recent major industry closures such as the Ford closures in Geelong and Broadmeadows.<sup>165</sup> Given this level of impact, Council submitted that the Proponent needs to go further than the acquisition pathway established under the *Land Acquisition and Compensation Act 1986* (LACA), with detailed support for the entire workforce to be provided. It also emphasised the need for efforts to be made with Council to identify and provide both short- and long-term replacement industrial land.<sup>166</sup>

A significant number of BIP businesses made individual submissions to the EES outlining their specific concerns. The Bulleen Industrial Zone Group (BIZ Group), representing 67 businesses in the BIP also made a submission and presented at the Hearing.<sup>167</sup>

The BIZ Group submitted that the EES risk assessment significantly undervalued the importance of the BIP, with the result that it does not consider the full impact of the Project on the BIP.<sup>168</sup>

It submitted impacts on jobs would occur from:<sup>169</sup>

- immediate job losses as businesses close upon acquisition
- jobs lost short to medium term through:
  - forced downsizing due to loss of revenue from forced moves, increased costs and inability to retain staff
  - business failures due to forced relocation away from customer base into areas of higher competition
  - employees unable to cope with additional travel to new business locations
  - supply chain and consumption flow-on effects as businesses that supply BIP businesses lose trade.

<sup>162</sup> Technical Report F, Table 8-3.

<sup>163</sup> REMPLAN research Table 3-5, reproduced in Mr Haratsis' evidence, Document 29a, page 29. Mr Haratsis' evidence suggested the figure is closer to \$219 million.

<sup>164</sup> Document 87, para 23.

<sup>165</sup> Document 87, para 24.

<sup>166</sup> Document 87, para 25.

<sup>167</sup> Submission 273, Hearing Document 342.

<sup>168</sup> The IAC has significant concerns with the risk assessment methodology which were considered in Chapter 1.

<sup>169</sup> Submission 273, pages 4-5.

The BIZ Group and others also submitted that the characteristics of the workforce at the BIP are also relevant and will add to the potential level of impact, including:<sup>170</sup>

- an older, mostly male workforce; more vulnerable to long term unemployment
- a large blue-collar workforce with relatively low wages and educational attainment; an unusual combination in the eastern suburbs
- a settled workforce, with many employees not used to a dynamic job-seeking environment.<sup>171</sup>

Several individual business owners attended and provided information to the IAC on their particular circumstances. Ms Takasaka from Japan Food Trading (JFT)<sup>172</sup> described how they are a family business of 40 years standing, including over 24 years in the BIP. She explained their significant business investment in facilities and how their operations are strategically tied to the BIP and its location in relation to suppliers and customers.

JFT acknowledged the benefits of the Project but outlined the particular business imposts they and their workforce would experience, even if they manage to relocate to another site such as Websters Road in Templestowe. These imposts will include additional time and fuel costs estimated at additional operating costs of at least \$52,000 per annum.

Ms Takasaka submitted:<sup>173</sup>

I believe there has been somewhat [of] a disconnect between what the businesses in the precinct need and/or are planning and what NELP is providing and/or know about.

She also submitted, along with many other business owners and individuals, that uncertainty is one of their biggest issues, asking<sup>174</sup>

Do we need to go? Where will we go? How long will we have to move? Will our staff stay on with us? Will we be able to continue to service our customers and our retail outlets at a new location efficiently? What if anything can be done to mitigate the obvious impacts of an influx of commercial purchases in the market once NOIA are issued? It is difficult to plan for a future without knowing where we stand or where we can go.

Many business owners also explained the extensive amount of effort needed to attend meetings and participate in discussions about managing the effects of the Project, taking them away from their businesses. Some, like Ms Takasaka were not overly critical of the way the Proponent liaised with businesses, recognising it has limited ability to assist with their concerns at this point.

Broadway & Frame<sup>175</sup> (B&F) operate a concrete batching plant in the BIP, employing 16 full time equivalent staff. Ms White submitted for B&F that the plant has operated in the BIP for

<sup>170</sup> Submission 273, pages 5-6.

<sup>171</sup> The online survey conducted by the BIZ Group suggested more than half of all employees have been with the same BIP employer for more than six years and about a third more than 10 years (Submission 273, Appendix A, page 20).

<sup>172</sup> Submission 318, Document 338.

<sup>173</sup> Document 338.

<sup>174</sup> This was also recognised in the EES to some extent in Technical Report F.

<sup>175</sup> Submission 689 and Document 393.

over 30 years and has supplied significant government projects in recent times including the Melbourne Metro Tunnel and West Gate Tunnel Project.

She submitted the plant is in a strategic location very central to Melbourne and the inner north east and provides an important range for the construction industry, including specialty concrete products.

Ms White also noted that other B&F plants in the region do not have the capacity to make up for the loss of the BIP plant at peak periods. If the plant were to close, it would be highly desirable to enable it to continue to operate on site in the BIP for as long as possible, and a return to the BIP post Project construction is preferred. Otherwise, it would take in the order of 12-18 months to construct and commission the new B&F plant *after* approvals have been obtained.

Many other BIP business owners shared deeply personal stories of their long attachment to the precinct and fears for their own futures and those of their employees.

BAAG<sup>176</sup> are on the far western edge of the BIP. They have leased their site on Crown Land since 1967 and have approximately 50 staff working in their garden supplies business and broader art and sustainability activities.

While a business, described as for-profit but reinvesting profits into the business and broader sustainability activities, BAAG is notable for the number of supporting submissions it received from customers and supporters. Mr Wong for BAAG submitted that BAAG has sustainability and community embedded as inseparable principles, and thus should be conceived of differently to a normal garden supply business.<sup>177</sup>

BAAG noted that it was not opposed to the Project in principle but was concerned about the impact on its operations on the site. Mr Wong noted the extent of expert support for BAAG as a particular feature of the area, with many recommending BAAG should be retained.

BAAG made submissions about the limitations of using a Reference Design approach to evaluate the EES, and the IAC comments on this elsewhere in this report. BAAG also criticised the Proponent's lack of detailed explanation as to how the proposed construction compound identified near its site was derived and what impacts it would have.

Like JFT and many other BIP submitters, BAAG submitted that the uncertainty generated by the Project has created considerable difficulty and expense; and despite the best efforts of the Proponent, their concerns have not been allayed. Mr Wong submitted:<sup>178</sup>

In addition to the diversion of resources to engage in the various consultation processes associated with the Project and the EES process itself, business planning and investment is severely compromised as a direct result from:

- The uncertainty about the actual design of the Project that will be constructed
- How long BAAG can remain on the BAAG land (if this is at all possible)

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<sup>176</sup> Submission 629, Documents 304 a,b,c.

<sup>177</sup> Document 304a, para 8.

<sup>178</sup> Document 304a, para 69.

- The conditions that will be experienced if remaining on the BAAG land is possible.

Mr Wong submitted that the BAAG land should be excluded from the Project if possible; and if that is not possible BAAG should be supported and facilitated to relocate in the immediate area.<sup>179</sup> He also noted that there are no obvious suitable relocation options, with identified sites having various legal and/or physical or cost constraints.

BAAG submitted on a range of other specific issues including the critical need to maintain parking and access.

Many submissions also noted that the BIP businesses are interdependent, not only in a commercial sense, but also in the sense of being a community. The long-term nature of businesses in the area and the level of interdependence was also noted in the EES, with some businesses being in family ownership for nearly half a century.<sup>180</sup>

Although just outside the BIP proper, Heide Museum of Modern Art (Heide MOMA) also submitted on business impacts, particularly the impact on projected visitation and thus, financial performance, if access were restricted during the construction period.<sup>181</sup>

The three experts on business impacts met and prepared an agreed conclave statement.<sup>182</sup> While there was disagreement on some measures and EPRs going forward, there was general agreement that the displacement of over 80 businesses from Bulleen was significant. There was also agreement that an EPR is needed going forward to assist the workforce, as opposed to the businesses themselves which have recourse under the LACA.

The experts also agreed that co-location of businesses in a cluster, and preferably in the Manningham municipality, would be the best outcome. Websters Road (see Figure 21) was seen as having potential for some businesses by all experts; Mr Barlow noting that it is outside the UGB and Mr Haratsis preferring a Council led, Proponent funded, planning process. There was less agreement in relation to other possible locations such as Preston (see Figure 22) which appeared to provide less land for relocation. Expert opinions also differed about the attractiveness of this option to BIP businesses given their workforce and supply catchments.

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<sup>179</sup> Document 304a, para 91.

<sup>180</sup> Technical Report F, page 48.

<sup>181</sup> Document 318.

<sup>182</sup> Document 108.



Figure 21 Location of possible opportunity for additional industrial land at Websters Road, Templestowe<sup>183</sup>

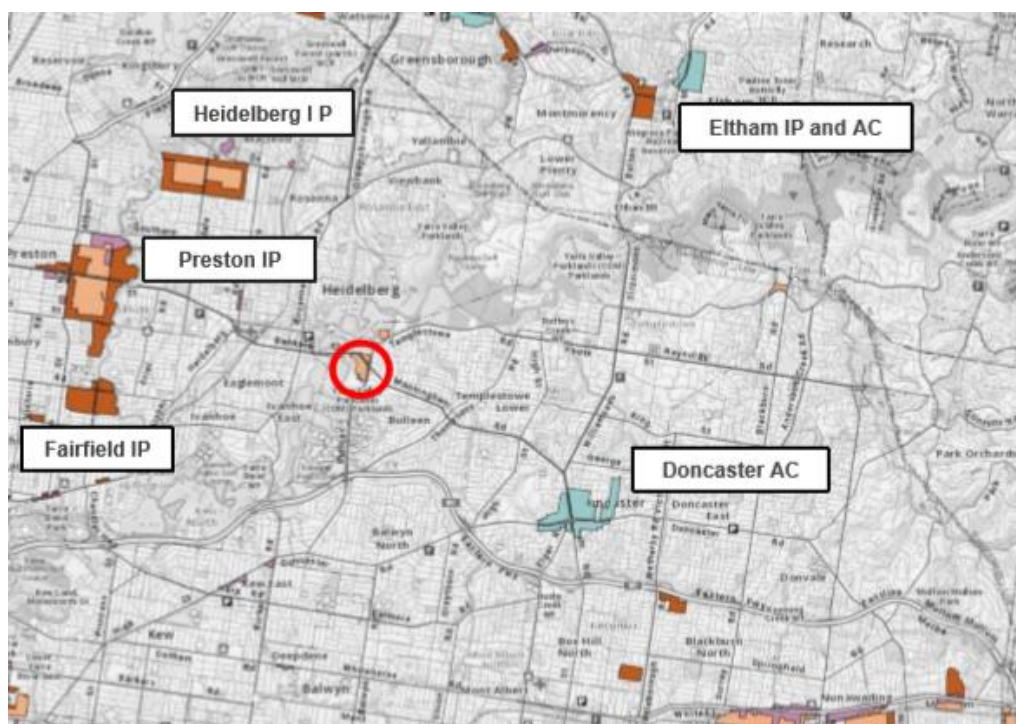


Figure 22 Map of Industrial, Commercial 2 and Activity Centre zones in sub-region around Bulleen<sup>184</sup>

<sup>183</sup> Tabled document 24va, Figure 11, page 38.

<sup>184</sup> Tabled document 24va, Figure 10, page 37; this Document also referenced the *Opportunities for Relocation: Bulleen Industrial Precinct*, March 2019 report prepared by EY.

All experts supported the re-establishment of productive land use on the BIP area post construction; the extent of which is unknown. Ms Stoettrup and Mr Barlow supported a post construction land use focus on employment (industrial), while Mr Haratsis preferred an employment use with the possibility of some residential development.

When questioned by the IAC or other parties, all experts agreed that the scale of business loss or displacement associated with the BIP is unprecedented in their experience.<sup>185</sup> However, none concluded that the scale of the loss in itself was reason not to proceed with the Project or the Manningham Road interchange rather, focus should be on mitigation measures. Mr Barlow outlined his reasoning for reaching this conclusion as:<sup>186</sup>

- The surrounding communities that rely on the BIP for a variety of service, business to business links etc. can be served by alternative service providers at other centres including the Preston Industrial Precinct, the Fairfield/Alphington Industrial Precinct and the Heidelberg West Industrial Precinct, the Doncaster Activity Centre and other local centres to the west and south.
- The loss of employment opportunities in the BIP will require some residents to travel further to access new job opportunities. It is expected that many will follow their employer as they relocate.
- While local employment opportunities are reduced there are a number of locations within 15-30 minutes drivetime offering employment in a similar range of industries. Accessibility is reduced for some residents, but not unacceptably so in the context of average commute times for jobs across the metropolis.
- There is an opportunity to partially ameliorate the loss of land and job opportunities through the creation of new industrial land at the Websters Road location that could accommodate industry that otherwise may not have ability to remain in the Manningham area.
- There is the opportunity to reinstate more than two-thirds of the existing industrial land at Bulleen following completion of the Project and accommodate service industries and the like.
- The net result could be that there is no loss of industrial land and its employment potential within a couple of years of the end of the construction of the Project.

Mr Haratsis in his evidence was critical of the EES risk assessment, submitting that the risk assessment understated the risk and impacts on businesses in the BIP.<sup>187</sup> The IAC comments on the approach to risk assessment elsewhere in this report.

Both Dr Stubbs and Mr Weston considered the social impacts resulting from closure of the BIP. Mr Weston in evidence noted that the impact on displaced businesses would be of high significance with impacts including stress, inconvenience, loss of purpose and the need for employees to travel to find employment or the risk of possible unemployment. He noted that employees may not be provided with financial compensation whereas business owners would be.<sup>188</sup>

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<sup>185</sup> NELP submitted that the West Gate Freeway through Port Melbourne and South Melbourne may have had similar impacts, but no evidence was produced to support this.

<sup>186</sup> Document 24va, para 31.

<sup>187</sup> Document 29a, Section 4.

<sup>188</sup> Document 24g, Table 8-2.

Dr Stubbs also noted the impacts on the BIP and was critical of the risk assessment. In her evidence, for example, she identified that the EPRs do not actually do anything to mitigate residual risk and that EPR B1 has serious shortcomings:<sup>189</sup>

- It assumes that it is possible to identify appropriate opportunities to relocate facilities
- The relocation is not internalised to the project, but rather relies on external parties (owners and councils) to mitigate the risk
- Appropriate outcomes are not guaranteed in any way, but only commits the North East Link Project to work with councils to identify opportunities.

#### **4.2.3 Discussion and conclusion**

The Project impacts on the BIP are very heavy, resulting in the complete loss of the most significant industrial area in the City of Manningham and causing significant stress to business owners, employers and customers in the precinct. This stress is evident in the many submissions to the IAC and even more so in submissions at the Hearing where individuals shared deeply personal stories of the difficulties the Project is causing them.

The IAC notes that business owners and landowners will be subject to the terms of the LACA, if they have an interest in land which is acquired. In these circumstances the normal terms for acquisition will provide direct financial compensation. Often this would be enough if an isolated business or two were being acquired. That is not the case here where a whole industrial area is being removed.

The broader effects in terms of business and employee displacement and the possibility of businesses re-establishing are more uncertain, potentially leading to widespread social and business impacts not only on the businesses, but the community more broadly.

The IAC accepts that at the highest level, the economic and business benefits of the Project are essentially not disputed. Furthermore, when assessed at that level, the impacts on the BIP in financial terms are unlikely to ever outweigh the overall net benefit of the Project.

However, to take this approach unfairly downplays the potentially very significant local and sub-regional business and economic impacts and consequent social impacts which should be avoided or mitigated by the Project.

It is also clear from submissions that most of the businesses would like to keep operating and ensuring that they can re-establish in an appropriate location quickly, preferably close to the BIP. While this would be the best possible mitigation strategy, the impediments are significant. The evidence is that there is limited supply of industrial land available in Manningham and the north east more broadly, with some more limited opportunities west in areas like Preston.

The process of transition is also unclear, whether in terms of timing, securing additional sites, the level and timing of support beyond the requirements of the LACA and other factors.

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<sup>189</sup> Document 29c, page 29.



While acknowledging the impacts on all businesses in the BIP, the IAC also notes the community support for BAAG. It is unusual for such broad-based community support to be expressed in respect of a commercial business. This is testament to the strong community focus of BAAG. While it is not community-owned, a cooperative or not for profit business, the IAC accepts that it has established a degree of community 'ownership' different to other businesses based on its long-established operation and business model. The IAC is reluctant to differentiate BAAG too strongly from other BIP operators; this would be unfair as the impact on all would be very significant. However, given its location on the extreme western edge of the BIP, the potential to retain it is stronger than for other operations and this should be considered in detailed project design.

The IAC is critical of the Reference Design approach elsewhere in this report. Its effect is felt severely in the approach to the BIP. The work done to date has been done without a final design, or even a resolved preferred design to put to businesses and stakeholders. This has resulted in a situation where after some 18 months of consultation, the Proponent is unable to give any degree of certainty to business owners and employees in the BIP as to if, where and when they may be able to relocate. This is a very difficult situation for those businesses. A high level of impact such as this requires a high level of mitigation. This has not been forthcoming in any real sense to date.

At this point in time, the effects of the Project on the BIP have not been managed to any extent as required by the evaluation objective. Furthermore, it is not clear whether the effects can be managed to an acceptable degree. There are a number of possible mitigation measures, but none are resolved to the point where they could be said to have any real element of certainty.

**(i) EPRs**

A range of EPRs were exhibited with the EES relating to business impacts (the 'B' series). These have been significantly bolstered through the Hearing and the final set proposed by the Proponent, largely on the advice of Mr Barlow, are more comprehensive.<sup>190</sup>

However, they cannot be said to be 'managing effects'. They are simply EPRs to undertake a range of plans and strategies which may provide support to the BIP and other affected businesses across the Project.

The IAC also has some concerns about 'the State' being responsible for implementing these EPRs. Having the State rather than a particular agency being nominated provides the State flexibility but also dilutes accountability. The IAC considers a particular agency must be nominated through approval; logically this should be DoT, as this is the agency under which the Proponent sits.

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<sup>190</sup> Document 411.

**(ii) Alternative locations**

A range of alternative locations were put forward in the Hearing. The pathway to give BIP preferential commercial access to those alternative locations is not clear to the IAC but would need to be considered.

**Websters Road**

There were a number of sites in the Websters Road, Templestowe area that were put forward in the Hearing as potentially viable to replace some of the industrial land lost in the BIP. The main site is the Council owned green waste site with an area of approximately 4.4 hectares shown in Figure 21 above. The site is currently outside the Urban Growth Boundary (UGB) and zoned Public Use Zone 6 (Local Government).

The experts all agreed this site was worthy of further investigation. The IAC requested the Proponent, Manningham and Counsel Assisting prepare advice on the planning scheme and legal mechanisms that may be required to facilitate the possible use and development of this land, given its location outside the UGB.<sup>191</sup>

The advice suggests the site could be used for a relocation site in the short term, but it would come with significant limitations and a rezoning to an industrial or commercial zone should occur as soon as practically possible. This would require amendment to the UGB which would need to be ratified by Parliament.

The UGB is fixed for good reasons, and changes to it have often attracted strong community interest and resistance. In this case however, the IAC considers the extenuating circumstances make it a proposal that should be seriously considered. These circumstances include the need, the current use and condition of the land, the setting on the edge of the UGB and the surrounding land use. Given these circumstances the IAC considers there is low risk of setting a precedent.

**Other alternatives**

Other alternative industrial locations were identified, including by Mr Barlow as shown in Figure 22 above. These other industrial areas may offer opportunities for some of the BIP businesses. The IAC notes that none of these sites have the capacity to re-establish the BIP 'cluster' which is seen as a strength of the precinct.

One business in the BIP who attended the Hearing submitted that they have invested several million dollars in a property in Thornbury as a backup, and this is imposing a significant financial burden on the company; still with no certainty as to what will happen, and when, to their BIP site.<sup>192</sup>

Again, the IAC is not clear on the pathway by which the BIP businesses might be assisted or encouraged to explore these other areas.

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<sup>191</sup> Document 243.

<sup>192</sup> Submission 385.

### **(iii) Post construction land use**

The business experts all agreed that re-establishing employment land use in the Manningham Road interchange area post construction is an important objective; the IAC agrees. Mr Barlow suggested that up to 6.77 hectares of land could be available for future development.<sup>193</sup>

The exact location, access to, and form of the post construction land use is unlikely to be known until early 2021 at the earliest, and then not become available as a development site for perhaps four to seven years after that.

The IAC notes the different positions of the experts as to whether this land should be industrial, other employment or have a residential component. Given the strategic location of the land, all have merit at face value. The IAC is not currently able to make detailed recommendations about specifics of future land use; this should be subject to a comprehensive land use planning exercise.

To provide planning and stakeholder certainty, the IAC recommends that this form part of an Urban Design Framework Plan (UDFP) to be prepared for the Manningham Interchange and adjacent land as part of the Project. It is important for this to accompany the Project design phase for several reasons, including:

- to prioritise the retention of productive land for the operational phase
- to provide suitable direction and lead time to enable authorities and stakeholders to realise timely outcomes upon Project completion.

Such a plan would require an integrated assessment of Project needs, the realistic capacity to minimise the footprint of permanent Project infrastructure and maximisation of land available for re-use as starting principles. It should also specifically focus on preserving suitable access and functionality to the residual land to enable flexible use.

Whatever the specific use of the BIP land, the IAC considers that it is highly desirable to bring this land back to productive employment, recognising its centrality to the mix of uses and economy of the City Manningham as indicated in its planning scheme. The IAC considers Manningham should have a leading role in the planning and development of this area during and post construction.

Other important components for an UDFP addressed in other chapters of this report are the need to respect and enhance the interface with the Yarra River corridor and to consider strategic linkages such as the consolidation of a cultural precinct.

#### **4.2.4 Findings**

The IAC finds:

- The effects of the Project on the BIP are severe and it is unprecedented that such a large, apparently thriving commercial and employment area should be considered

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<sup>193</sup> Document 173.

for complete loss. It is only in the context of a project of this scale and significance that it could even be contemplated.

- At this point in time, there is no evidence before the IAC that the effects on business in the BIP have been managed, or that there is a coherent plan with measurable prospects for success.
- The IAC supports the design of the Manningham Interchange to maximise the return of residual land to productive employment land, to be planned for at a high level through an UDFP as a requirement of the Incorporated Document. The basic financial costs to business and landowners of removing the BIP should be able to be addressed through the provisions of the LACA.
- The broader effects on the local economy and workforce must be mitigated given the extent of the impact and the characteristics of the workforce. This will require a degree of management and assistance akin to a major industry closure such as car manufacturing.
- While the Project is causing the impact, given the scale and broader societal impact, the IAC considers that the DoT, rather than the project delivery consortia, should be responsible for developing and implementing the assistance package.
- The assistance package should be included in the EPRs, but must be pursued separately, and immediately following Project approval, to mitigate the economic and social effects that are already apparent. Business assistance should include:
  - Individual business plans prepared with each business that understands at a fine-grained level their current operation, desire to relocate or cease operations, business needs for new sites, preliminary site identification, and practical and reasonable assistance beyond LACA entitlements to implement these plans.
  - Individual employee assistance plans prepared with and for each employee in consultation with the business owner that understands at a fine-grained level their future employment plans, need for training and development, factors that would influence their desire to remain employed with a BIP business, and practical and reasonable assistance to implement their assistance plan.

## 4.3 Watsonia Neighbourhood Activity Centre

### 4.3.1 Background

The Watsonia Neighbourhood Activity Centre (the Centre) is comprised largely of retail uses in the Watsonia Village<sup>194</sup> located just to the west of Greensborough Highway south of Grimshaw Street in the City of Banyule (see Figure 23). The Centre is serviced by Greensborough Highway, Watsonia Road and the Watsonia Train Station on the Hurstbridge Line.

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<sup>194</sup> Technical Report F at page 42 includes, based on Banyule City Council data, that approximately 865 people are employed in Watsonia, mostly at Watsonia Village.

The Hurstbridge Line passes immediately to the east of the Centre, in a deep almost sheer sided cutting which, along with the Greensborough Highway, act as a significant physical barrier from the Centre to suburban areas to the east. There is a large, well-used, at-grade car park between the train station and Greensborough Highway.

High voltage powerlines owned and operated by Ausnet Services run north west to south east through the town centre on lattice towers and over Greensborough Road through a linear reserve.



**Figure 23** Aerial image of Watsonia with Project 195

The Project in the Reference Design proposes that the North East Link at this location would be in an open trench carrying six lanes of traffic with Greensborough Highway being at-grade either side of the trench.

An alternate design was prepared by the Proponent<sup>196</sup> which included a new entrance (at Elder Street) to a multi-deck carpark in the existing train station car park area and a redesigned arrangement at the Watsonia Road/Greensborough Highway intersection.

It was also suggested, but not proposed in the Reference Design, that the existing lattice towers on the high voltage power lines could be replaced with monopoles, reducing their physical footprint and visual impact.

<sup>195</sup> EES, Map book, Horizontal Alignment Part 1, sheet 9 of 42.

<sup>196</sup> Document 100.

There is limited direct impact on land within the Centre, but there are likely to be significant construction impacts depending on the Project design.

#### **4.3.2 Evidence and submissions**

Ms Stoettrup was called by the Proponent as the only expert witness to give business evidence in relation to the Centre. Her evidence was that construction activity could increase traffic in Watsonia Road and further dissuade customers from east of the Greensborough Highway from shopping in Watsonia. She noted that traders in the Watsonia area are concerned as to whether the Project will accentuate the east – west divide.<sup>197</sup>

Banyule suggested that EPR B4 does not mitigate the impact, instead emphasising Project delivery over protection of businesses. It submitted that without further constraints, the Project:<sup>198</sup>

....can disrupt access amenity or function of any business to the extent necessary for the purposes of the project.

Banyule submitted revised wording for the EPR that conditions construction of the Project to the extent that it would not reduce the viability of businesses or adversely affect parking and access to the Centre.

Many businesses in Watsonia made submissions to the IAC. The Watsonia Traders Association (WTA) represented by its President Mr Jeremy Richards (a Centre business owner) made submissions about the impact on the Centre. The WTA represents 75 small businesses in the Centre, and while not opposed in principle to the Project, are concerned about its impact on businesses through interrupted trade.<sup>199</sup>

It submitted:

This disruption will cause downturn which we'll be unable to recover from unless we receive substantial assistance PRIOR TO AND DURING the disruption.

The amount and duration of disruption is unprecedented. We know Bulleen is going to be directly affected, but the end result for each business area may be the same, and we need to take action to prevent this now. There is no quick fix, we need a well thought out, well resourced long term strategy starting now.

The WTA expressed frustration that it has had limited assistance to date from the Proponent and considers they are seen as not being as affected as Bulleen, so have less traction with getting the required assistance; and that Bulleen businesses will be able to access compensation from acquisition. Not so at the Centre.

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<sup>197</sup> Document 24t, section 5.2.

<sup>198</sup> Document 374a, para 572 onwards.

<sup>199</sup> Submission 490 and Document 332a.

The WTA made several specific requests for changes to EPRs as well as marketing assistance and expressed support for a tunnelled design, specifically Mr Buono’s SMART design, to minimise impacts on the Centre.<sup>200</sup>

Mr Richards noted that as a small convenience centre, a predicted drop in trade of perhaps a third during construction on the Proponent’s own figures<sup>201</sup> would be “catastrophic” for many of the businesses in the Centre. He outlined the impact of construction on businesses and shoppers in Rosanna from the 12-month construction of the Level Crossing Removal Project; submitting that the centre has not recovered from the impact, and that this is a much larger project.<sup>202</sup>

Mr Richards was critical of the Proponent for ignoring their suggestions for a longer tunnel option, submitting:<sup>203</sup>

North East Link has repeatedly treated our long tunnel requests as though we are in competition with North East Link. We are not. We just see a longer tunnel as a slam dunk win for everyone, with less disruption during construction, less open space required and less environmentally damaging.

Another business owner in the Centre, Mr Hesham Mobarek also submitted and attended the Hearing. He made clear that he supported North East Link and accepted the chosen corridor but submitted this is a once in a generational opportunity to improve Watsonia and deliver the Project successfully.<sup>204</sup>

Like the WTA, Mr Mobarek expressed concern that alternative options put forward have been ignored or side stepped in the interests of budget and time; and the needs and desires of the Watsonia community ignored.

He noted that an analysis of his pharmacy clientele suggests that 30 per cent come from east of Greensborough Highway, and for some businesses the number is more like 50 per cent. He expressed deep concern that five to seven years of construction disruption could lead to significant business impacts for the Centre.<sup>205</sup>

Mr Mobarek was also critical of the consultation undertaken and submitted that:<sup>206</sup>

The tunnel extension seems to be a no-brainer.

He also submitted suggested changes to the EPRs to try and improve business outcomes for the Centre if construction proceeds.

### 4.3.3 Discussion and conclusion

The IAC considers that it is important to note that the Centre has a number of significant existing land use planning and infrastructure issues. The geographical barriers of the

<sup>200</sup> Document 332a. A number of urban design issues were raised which are addressed in Chapter 7.

<sup>201</sup> Document 332b.

<sup>202</sup> Document 332e.

<sup>203</sup> Document 332e.

<sup>204</sup> Submission 586 and Document 392.

<sup>205</sup> Document 392.

<sup>206</sup> Document 392.

Hurstbridge Rail Line and Greensborough Highway already have a significant effect on the operation of the Centre.

Fundamentally though, of most concern to the IAC is the potential for business impacts during a long construction period. The IAC considers these have been significantly downplayed in the EES and there is a real risk of business failure at the individual and even Centre level. The IAC has heard submissions about the impact on business from relatively small projects such as the Rosanna Road Level Crossing Removal Project. While direct evidence was not presented about these other projects, the research undertaken on behalf of the Proponent suggests that a significant avoidance factor by customers is likely; in this case for an extended period. This is especially the case since one of the Centre's main strengths is its convenience.

If the Reference Design, or something similar with an open trench approach is approved, then the construction impacts on the Centre will be commensurately more significant, and likely to threaten the sustainability of businesses, and possibly the Centre.

The IAC agrees with Banyule that at the simplest level, the EPRs are very general and effectively impose almost no obligation on the Proponent to prevent serious business harm or to mitigate its effects.

There are certainly solutions to these issues, but the question is how much should the Project be responsible for solving these long-term issues? The existing conditions are challenging but workable. The Project would significantly exacerbate these challenges and needs to seek to avoid them at first instance or minimise them if avoidance is not possible.

To some extent, the level of Project responsibility is contingent on other recommendations made in this report. Namely, if the recommendation for an extended tunnel is accepted, exiting further north in the vicinity of Grimshaw Street, then the impacts on business in the Centre should be significantly reduced in the IAC's view. This would be highly desirable having regard to the scoping requirement pertaining to business which includes community cohesion. If this cannot be achieved, at minimum, a covered tunnel option should be considered as the ultimate outcome, to restore land at grade to enable improved centre connections and enhanced community use.

The IAC considers that the scope of potential improvements to the Centre is large, whichever option for the Project is achieved, and further strategic work has begun for this Centre in light of the potential for the Project.<sup>207</sup> The IAC considers there is a strong argument to undertake a range of these improvements if not by the Project, then concurrently with the Project. These include some of the urban design, parking and infrastructure options suggested by Council, submitters and Mr O'Brien.

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<sup>207</sup> See for example the Ethos Urban Report Document 332c.



#### **4.3.4 Findings**

The IAC finds:

- The Reference Design is likely to result in severe and lengthy construction impacts to traffic and access on the Watsonia Neighbourhood Activity Centre which would directly impact business operations in the centre.
- As discussed elsewhere in this report, the IAC considers the best way to mitigate these impacts is via a longer tunnel option.
- The EPRs should be amended generally in accordance with Banyule City Council recommendations to provide an incentive for the Project delivery consortia to minimise impacts on businesses in Watsonia and to facilitate measures to strengthen businesses from now until past operation.

### **4.4 Other business impacts**

#### **4.4.1 Background**

A number of other businesses along the route will likely be affected by the eventual Project design; whether through permanent acquisition, temporary occupation or construction impacts.

These include businesses along Greensborough Highway, businesses associated with sporting facilities such as the Bulleen Swim Centre and Boroondara Tennis Centre and those associated with sporting clubs such as golf clubs.

Private schools and businesses along the route are considered in Technical Report F which considered that the risk to their financial viability was low.<sup>208</sup> Some are likely to be more affected such as Marcellin College since the impact is on its consolidated home campus rather than its sporting fields alone as discussed in Chapter 5.

Businesses in a wider area are also likely to be affected during construction due to disrupted transport patterns and access.

The Business Case for the Project suggests that businesses that can survive Project construction have the potential to benefit from transport improvements to be delivered by the Project. Likewise, some businesses in the area stand to benefit from construction through supplying goods and services for construction but no evidence or commitment was provided by the Proponent to this effect.

#### **4.4.2 Discussion and conclusion**

While the impacts on some businesses are likely to be significant, and particularly those to be acquired, the Project's negative impacts are likely to be mostly felt during the construction period. In many instances, this period will be lengthy.

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<sup>208</sup> Technical Report F, page 68.

The actual impact level is not known at fine detail and will not be realised until construction starts. These impacts, while locally severe, are not expected to be at the same broader level of impact on those in the BIP and Watsonia and the IAC considers that they should be able to be minimised through the EPRs.

#### **4.4.3 Findings**

The IAC finds:

- Impacts on businesses other than those in the BIP and the Watsonia Neighbourhood Activity Centre should be capable of management through a combination of land acquisition legislation and EPRs, as applicable.
- The recommendations in this report for strengthened business EPRs will apply to businesses along the full extent of the Project alignment unless otherwise noted for specific precincts.

#### **4.5 Recommendations**

The IAC has provided suggested revisions to the Business EPRs to provide for more support and certainty to mitigate business impacts; particularly on the BIP. In relation to the Watsonia Neighbourhood Activity Centre, the IAC has recommended further consideration be given to an extended tunnel option.

## 5 Social impacts

The Project's social impacts are addressed in Chapter 17 of the EES and in Technical Report I which includes a Social Impact Assessment. Before the Hearing, the Proponent published a document titled *Overview of Social Impacts of North East Link, May 2019* prepared by Public Place Pty Ltd.<sup>209</sup> Aspects of Land Use in Chapter 13 and Technical Report E also have a bearing on social impact.

The relevant evaluation objective addresses social and business impacts in the following terms:

To manage effects of the project on land use and the social fabric of the community with regard to wellbeing, community cohesion, business functionality and access to goods, services and facilities.

The Proponent called Mr Glenn Weston, Social Planner from Public Place to give expert evidence about the Project's social impacts of the Project.<sup>210</sup> He was initially briefed by the Proponent to review the Social Impact Assessment as part of the published EES but was ultimately diverted to preparing a summary of the main social effects of the Proposal.

The Proponent also relied on the expert evidence of Mr Barlow, Town Planner from Urbis in respect of open space, amenity and land use planning impacts.<sup>211</sup>

The published EES includes a *Sport and Recreation Preliminary Options Assessment*, 15 March 2019 for the Project area in Appendix F of Technical Report I.

The BBW Councils called Mr Richard Simon, Open Space and Recreation Planner, Simon Leisure to give expert evidence about the effects of the Project on sporting facilities and active open space.<sup>212</sup>

Manningham called Dr Judith Stubbs, Social Planner from Judith Stubbs & Associates to give expert evidence in respect of social impacts.<sup>213</sup> It also called Mr Robert Galbraith, Arborist of Galbraith & Associates to give expert evidence in respect of the River Red Gum at the Caltex Petrol Station, Bulleen.<sup>214</sup>

### 5.1 Introduction and key issues

The provision of the Project including upgrades to the Eastern Freeway is expected to generate both positive and negative impacts for the Victorian community and beyond.

Positive impacts are likely to stem from increased connectivity and anticipated travel time savings. To the extent these factors are projected to increase job and housing opportunities

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<sup>209</sup> Document 188.

<sup>210</sup> Document 24h-j.

<sup>211</sup> Document 24va with attachments.

<sup>212</sup> Document 28j.

<sup>213</sup> Document 29c.

<sup>214</sup> Document 29d.

as well as improved access to goods and services, they represent substantial positive benefits as documented in the Proponent's Business Case.<sup>215</sup>

Residents in some areas are expected to benefit from reduced heavy vehicle use of arterial roads such as Rosanna Road, which are currently problematic in terms of local amenity and functionality. Those living and working along the corridor can also be expected to benefit from enhanced active transport routes and improved bus services along the Eastern Freeway. These issues are addressed in Chapter 3.8 (Traffic and transport). Likewise, some residential properties are expected to experience reductions in noise emissions compared with existing or 'no Project' scenarios, as outlined in Chapter 8 (Noise and Vibration).<sup>216</sup>

There is also a substantial overlap between the Project impacts that may not initially be regarded as social impacts, such as the planned closure of the BIP, is expected to generate substantial social impacts. Mr Weston considered that once the EPRs were enhanced, the greatest social impacts of the Project would flow from compulsory acquisition of commercial properties and the displacement of business and employment. These effects are principally addressed in Chapter 5 (Business).

Chapter 14 (Health and Wellbeing) considers the effects of the Project on human health and wellbeing, which also have capacity to be affected or triggered by social impacts.

### **5.1.1 The IACs role**

A key role of the IAC is to evaluate the EES and public submissions, many of which drew the IAC's attention to potential negative social impacts. Many aspects of the Project will affect established communities living near the road alignment. Mr Weston acknowledged that there are likely to be significant negative social effects of the Project and that people living, recreating and working closest to it stand to be most directly affected. He also suggested that mitigation measures should focus on reducing these impacts.

The IAC needs to identify whether the EES has properly accounted for and evaluated all relevant social effects. If so, the fundamental question is whether it has demonstrated that they can and will be managed acceptably at all stages of the Project, including through the Incorporated Document and EMF (with EPRs as a key component). The Proponent added that the IAC should consider whether community effects (as mitigated) will produce a beneficial outcome when balanced against the Project benefits.<sup>217</sup>

### **5.1.2 Differential benefits and disbenefits**

Dr Stubbs explained that there will be a differential distribution of benefits along the Project alignment, with higher benefits likely to accrue to Banyule City Council, Whittlesea City Council and Nillumbik Shire Local Government Areas. Conversely, she considered that the adverse social and economic impacts would fall largely on Manningham and Banyule City

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<sup>215</sup> Available at <https://northeastlink.vic.gov.au.publications/businesscase>.

<sup>216</sup> The benefits outlined in these two paragraphs are consistent with the Proponent's opening submission for Group 5 witnesses, Document 187.

<sup>217</sup> Opening submission for Group 5 experts, Document 187 at paragraph 13.

Council areas. In her opinion, it was important to internalise all externalities *within* the Project.

A component of the submission on behalf of the BBW and Manningham Councils was that it considered the IAC needed to be satisfied that local benefits would exceed local costs.<sup>218</sup>

In closing, the Proponent submitted that:

It is a feature of any major road infrastructure project that there will be broad-scale benefits and localised disbenefits. Localised disbenefits are unavoidable, particularly within an established urban setting that does not have the benefit of a road reservation. The test of overall net community benefit cannot be expressed in terms of whether local benefits will exceed local costs.<sup>219</sup>

The Project' social impacts will be distributed across a broad geographic region. The IAC accepts Mr Weston's evidence that the extent of social impact will principally be a product of the magnitude of change, combined with the sensitivity and adaptive capacity of those affected to respond.

Except for the BIP, the IAC is not persuaded that there are any particular sub-regions or socio-economic enclaves that raise a level of sensitivity that would not be addressed through EPRs targeted at all people who may be affected by the Project.

The IAC acknowledges that the Project will have differential impacts along its alignment, both positive and negative. Social impacts are no different from others considered in this report. The fact that Manningham and Banyule Council areas are predicted to experience the most negative impacts as identified by Dr Stubbs is not insurmountable for this EES when assessing a State-significant Project of this scale. It does, however, require more careful consideration as how to avoid these impacts and mitigate or minimise residual effects.

Other key issues pertaining to social impacts related to:

- the consultation process and uncertainty for stakeholders
- effects on parkland and open space
- impacts on sport and recreation facilities
- impacts on school operations
- acquisition of land to facilitate the Project
- a broad range of impacts on amenity and quality of life, including anticipated disruption to local residents and businesses during the construction phase.

## **5.2 The consultation process and uncertainty for stakeholders**

### **5.2.1 Submissions and evidence**

The Proponent explained that genuine consultation had been undertaken for the Project as outlined in the EES. It submitted that no other major infrastructure Project in Victoria had

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<sup>218</sup> Closing submission paragraph 103(a), Document 374.

<sup>219</sup> Paragraph 91 of closing submissions, Document 434.

consulted so early in the process and so extensively. Despite this, it accepted that consultation is an activity that no authority can perfect.

Submissions from stakeholders outlined the challenges of interpreting and responding to the EES which encompassed extensive materials including detailed technical information. Some referred to the EES as a ‘huge bureaucratic document’.

Watsonia Traders Association (WTA) explained that there is such a wide gulf between small business and those working on a major government project that ‘consultation doesn’t work’ unless stakeholders are provided with an experienced advocate. In response, the IAC was informed by the Proponent that it had provided financial and other support to certain stakeholders, including councils to enable them to respond to the EES.

Many participants also explained that social impacts are heightened for a proposal of this nature and scale because they began when the Project was announced and are expected to continue throughout its construction and operation (albeit in differing forms and to different extents).

Some residents spoke of the stigma that accompanied the government’s announcement of support for the Project and how they have been “*living in limbo*” ever since. Devaluation of land was also a deep concern for many, especially those whose properties would not be acquired. One submitter, a trained project manager, advised that basic questions had not been answered even by the end of the Hearing including: “*Can I get my child to school safely? Where can my children play? Where can I walk my dogs? Where can my children play sport?*”<sup>220</sup>

Mr Morris QC recognised the concept of planning limbo in closing submissions on behalf of the Proponent, suggesting that it was important for the IAC and the State to seek to reduce uncertainty experienced by those likely to be affected.

A portion of submitters found staff working at the North East Link Project hubs and presentations extremely accessible and obliging, praising their efforts. Similar comments were made by a number of schools such as Trinity Grammar School (Trinity) and certain community organisations such as sporting groups.

However, numerous residential submitters at the Hearing criticised the consultation process, citing a perceived lack of transparency and collaboration. For example, Mr Buono spoke with frustration about the community’s alternative design for parts of the Project as being treated as if it were a “*rival project*”.

Many residents expressed frustration and dismay at being told by the Proponent staff to ‘just continue living their lives as normal’. Another summed up the ‘human cost’ of the Project, explaining “*we are not just a dot on a computer map.*”<sup>221</sup>

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<sup>220</sup> Submitter 336.

<sup>221</sup> Submitter 282.

Particular concern was expressed about proposed works at Borlase Reserve, since residents who contacted the Proponent's staff were initially told that their properties would not be affected by the Project. Later, it transpired this would be one of the areas with potentially the greatest construction impacts and also highly significant post-development change.

Another concern shared by many submitters was that the extent of widening of the Eastern Freeway was not clearly identified in documents such as the Business Case and this only became apparent to affected residents once the Reference Design was exhibited.

### 5.2.2 Discussion

The IAC appreciates that community consultation for a Project of this magnitude and physical extent is a huge undertaking. It has been approached methodically by the Proponent with the input of substantial resources.

One aspect that is particularly positive is the ongoing dialogue between the Proponent, the Wurundjeri and Woi-wurrung people and other Traditional Owner groups as documented in the EES and referred to by various expert witnesses. This relationship was pivotal in preparing the Urban Design Statement and in setting other Project objectives and compiling documents such as the Cultural Heritage Management Plan (CHMP).<sup>222</sup> The IAC strongly encourages this partnership to continue at all stages of the Project.

That said, the IAC heard from members of the community who were clearly disappointed with the consultation processes. It appears to the IAC that much of the community's concern about the consultation process derives from either:

- residents, businesses and stakeholders initially being told to 'think big' and to put forward their preferences for development in their area, but soon after being 'presented' with the Proponent's preferred plans that did not seem to consider their suggestions meaningfully
- the inability of the Proponent's staff to be certain about likely potential impacts for any geographic area since the Project relies on a Reference Design that remains subject to change.

For future consultation and engagement processes undertaken for State projects, the IAC considers it is important to communicate openly about the nature of the input being sought. It adopts Dr Stubbs' recommendation that the Proponent needs to identify the genuine scope of stakeholders' abilities to influence the Project and to communicate this throughout the process.

The use of a Reference Design caused stress and uncertainty to many local residents and businesses.<sup>223</sup> Some spoke of having to "*prepare for the worst*" because they did not know what the actual Project would consist of and what consequential impacts it would have for them. The most that could be understood with certainty, was the extent of the Project

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<sup>222</sup> As confirmed by Mr Begg in his evidence.

<sup>223</sup> The IAC addresses the Reference Design approach in Chapter 1.5.

boundary (as currently defined). These issues are considerably more complex in an established area.

Although a series of ‘artists impressions’ were prepared for the Project,<sup>224</sup> they were indicative at best. The fact remains that the final road alignment and geometry, infrastructure elements and design remain unconfirmed even at the conclusion of the Hearing. The IAC regards this as problematic.

In the IAC’s opinion, this of itself is reason to require proponents for projects of this size, scale and nature to only go to public consultation including an EES process once a substantially resolved, well documented project alignment and associated works proposal has been prepared. This would significantly enhance public confidence in the fairness of the process. It is also warranted by the numerous other drawbacks from the use of a Reference Design in other areas such as visual, landscape impact and urban design.<sup>225</sup>

The timing of certain government decisions or announcements also greatly disappointed submitters. For example, part way through the Hearing, the Proponent tabled a press release announcing that the tender for early works for the Project had been let.<sup>226</sup> Some submitters communicated a sense of fatalism about the EES process and its outcomes as a result.

The IAC is conscious of pressures and timelines to deliver projects such as this, but still urges all arms of government to work together in future in a way that treats local communities more fairly and respectfully through this challenging process.

### **5.2.3 Findings**

The IAC finds:

- The use of a Reference Design for this Project has resulted in significant challenges for stakeholders and an overall lack of certainty.

## **5.3 Introduction to effects on public open space**

The Project corridor includes a ‘green belt’ largely centred around the Yarra River, with substantial parklands and other open spaces providing high levels of useability and amenity at a regional and local level. These spaces also host substantial established vegetation which is a key natural asset.

The EES defines open space as “*land that provides outdoor recreation, leisure and or environmental benefits or visual amenity*”.<sup>227</sup> Effects on public open space are one of the

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<sup>224</sup> Document 22.

<sup>225</sup> See discussion in Chapter 1.

<sup>226</sup> Refer to media release, Document 303.

<sup>227</sup> EES page 12, Glossary and Abbreviations.



most widespread and logistically complex potential impacts of the Project. Approximately 35 hectares of open space are projected to be impacted.<sup>228</sup>

The question is whether the EES sufficiently documents all associated values likely to be affected and whether it proposes suitable measures to minimise impacts on these.

Mr Barlow emphasised that recent changes to State planning policy are material to the IAC's consideration of this issue. Clause 19.02-6S seeks:

To establish, manage and improve a diverse and integrated network of public open space that meets the needs of the community.

The Proponent acknowledged that Project works would have widespread impacts on parkland and open space. However, it submitted that priority had been given to areas having the highest conservation values – identified as Project “no go zones”, such as the Banyule Flats and the Warringal Parklands. This influenced its preference for tunnelling under certain areas in the Reference Design.

Notwithstanding, the Project boundary still extends substantially into many areas of open space and parklands across the entire alignment as summarised in Table 6 below. Effects will either be temporary (potentially long term) or permanent. The EES identifies that on the basis of the Reference Design, the Project would result in a permanent loss of 182,300 square metres of open space.<sup>229</sup>

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<sup>228</sup> This figure was sought to be refined by the Proponent at the Hearing to remove all land within the Road Zone and to only account for land in a Public Park and Recreation Zone or similar.

<sup>229</sup> Chapter 17, page 17-47. This may need to be re-assessed on the basis of the IAC's comments about the need to include certain land in the Road Zone.

Name	Construction %	Operation %	Municipality
Borlase Reserve	100	58	Banyule
Watsonia Road Reserve	100	20	Banyule
Watsonia Station Carpark Reserve	100	76	Banyule
Koonung Creek Reserve (Balwyn North)	83	19	Boroondara
Unnamed reserve behind the Boroondara Tennis Centre, bordered the Bulleen Swim Centre	100	35	Boroondara
Koonung Reserve	64	14	Manningham
Stanton Street Reserve	100	(4)	Manningham
Unnamed reserve eastern side of Bulleen Road between Avon Street and Golden Way	48	(0)	Manningham
Unnamed reserve eastern side of Bulleen Road, between Golden Way and Trinity Grammar School Sports Complex	58	(1)	Manningham
Unnamed reserve following the western side of Bulleen Road, from Ilma Court following the residential area	100	(0)	Manningham
Unnamed reserve western side of Bulleen Road, between Tao's restaurant and Ilma Court	100	(0)	Manningham
Koonung Creek Linear Park 2 (Blackburn North)	48	9	Manningham/Whitehorse
Koonung Creek Linear Park (Doncaster/Donvale/Box Hill North)	60	(8)	Manningham/Whitehorse
Eastern Freeway Linear Reserve	65	(1)	Whitehorse
Koonung Creek Reserve adjacent to Doncaster Park and Ride, south of Doncaster Road	100	49	Whitehorse
Elgar Park	43	9	Whitehorse
Gray Street Reserve	51	(0)	Yarra
Maugie Street Reserve	100	(0)	Yarra

**Table 6** Land acquisition and temporary occupation of public open spaces<sup>230</sup>

<sup>230</sup> EES Technical Report I, condensed from table 9-4, page 167. Only includes areas with construction impact above 43 per cent and permanent impacts above 9 percent.

## 5.4 Effects on parkland

### 5.4.1 Submissions and evidence

The EES identifies that a combination of factors will result in changes to parkland along and near the Project alignment. These include reductions in area, providing infrastructure, tree removal and pressure from changes to water bodies or potential changes to groundwater conditions. There will also be access constraints during construction, with extensive reserves and other open space earmarked in the Reference Design for construction compounds.

Melbourne Water submitted that:

The waterway corridors, in particular the Yarra River (and associated parklands, and floodplains) and Koonung Creek (and the associated linear parklands and shared trail) have significant social, cultural and recreational value to their local communities.<sup>231</sup>

Community groups such as Friends of Banyule, Warringal Conservation Society, Yarra Riverkeeper Association, Blackburn & District Tree Preservation Society and the Birrarung Council made detailed submissions about the important role of parkland in this region. They explained that local parklands are a vital contributor to the liveability of this area and that they are highly used by members of the public.

Many individual submissions were received expressing concern about the extent of Project impacts on valued areas of parkland and open space which are central to environmental values, community interaction, health and wellbeing. Some raised the concept of intergenerational equity, suggesting that it was contrary to orderly planning to allow existing parkland, regarded as a precious resource, to be subsumed by road and related infrastructure.

They considered that the Project would have an unprecedented and unacceptable impact on natural and other values that would affect the public's use and enjoyment of these spaces. Their submissions encompassed visual, ecological, broader environmental, social and wellbeing effects, many of which are addressed in other parts of this report.<sup>232</sup> Submitters pointed to State planning policy at Clause 12.03-1R which seeks to maintain and enhance the natural and landscape character of the Yarra River Corridor.

Many submitters expressly regarded the direction of the Project as inconsistent with contemporary planning aspirations to enhance environmental values of parkland and open space, rather than to diminish them when providing major project infrastructure.<sup>233</sup> Various environmental groups and individuals also pointed to the lack of responsiveness of the Project to principles espoused by the *Yarra River Protection (Wilip-gin Birrarung murrong) Act 2017* (YRP Act). These include the need to recognise the Yarra River and its environs as one

<sup>231</sup> Page 14, Submission No. 800.

<sup>232</sup> Including the visual impacts of tree removal (both native and amenity plantings) as well as potential impacts on vegetation and waterbodies from groundwater drawdown.

<sup>233</sup> This was referred to by Birrarung Council in its oral submission as the harmful practice of "rivers giving way to freeways" with corresponding photographs at Document 184.

living and integrated natural entity as well as maintaining its access for and benefits to the community.

Melbourne Water explained that it was currently preparing the Yarra Strategic Plan under this legislation. In its original submission, Melbourne Water outlined the impacts of the Project on the Yarra River and surrounding parkland. In terms of mitigation, it suggested that the Proponent provide alternative locations for parkland and community facilities which are to be lost, explaining that:

Within the Bulleen area several large sites [are] designated as Public Acquisition Overlays. These should be activated to provide replacement parkland, wetlands and some community facilities.<sup>234</sup>

The Proponent responded that, in its view, the EES and proposed regulatory regime were sufficient to ensure that the objectives of the YRP Act would be met, even though the Project was exempt from this legislation by virtue of the MTPF Act.

The EES confirms the estimated loss of 15,814 planted amenity trees (in addition to native vegetation to be lost) and potential impact on a further 10,133 planted amenity trees, measured as those above three metres in height excluding understorey and groundcover.<sup>235</sup> This was regarded by some experts for the Proponent as conservative because it encompasses all trees within the Project boundary.

The National Trust of Australia (Vic.) (the National Trust) and others were concerned about the impacts of the widespread removal of healthy trees they regarded as resulting in a considerable loss of amenity, visual and heritage value from land including parkland that should not be underestimated. The National Trust referred to “*substantial green infrastructure*” being removed across the entire Project footprint with up to 26,000 trees degraded or removed, including up to 17,000 medium to long term viability trees.<sup>236</sup>

Retaining local access to parkland for all functions throughout all phases of the Project was considered by many as non-negotiable.<sup>237</sup> This aligns with an objective of the Project to maintain the function of all areas of open space. Mr Wyatt and Mr Weston were of the view that this could be achieved at both a local and sub-regional level, even within physically reduced areas. Mr Barlow took a similar view, subject to suggesting that the loss could be compensated for by increasing the provision of public open space in the Yarra Valley region as well as by providing other open space upgrades. This was considered to have the potential to meet a broader purpose to provide long term community benefit, as explored further in Chapter 5.5 below.

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<sup>234</sup> Page 6 of Submission No. 800.

<sup>235</sup> Table 4 page 56 EES summary, confirmed in closing submissions for the Proponent at pages 77 and 78, said to include a comparatively high proportion of trees in a Road Zone.

<sup>236</sup> Estimated by its expert Significant Tree Committee at a conservative amenity monetary value of between \$32. And \$80m based on an estimated removal of 16,000 trees.

<sup>237</sup> Such as for dog walking.

Melbourne Water advised that it was interested in exploring potential off-set Project options, consistent with its list of priorities from its Healthy Waterways Strategy.<sup>238</sup> This would extend to new land and enhancement of existing public land. It would specifically include the intended creation of an extended riparian zone of 150 to 250 metres from the Yarra River banks to offset environmental impacts for the general area.

As outlined in Chapter 7.3 (Visual impact), a relatively high proportion of submitters also raised concerns with the extent to which parkland, such as linear parkland along Koonung Creek would be affected either permanently or for an extended period. Mr Barlow confirmed in evidence that a minimum 7.64 hectares of open space would be permanently lost in this region (plus greater amounts if land within a Road Zone was included).<sup>239</sup>

Time was another factor emphasised by many submitters given the magnitude of the Project. Some explained that their access to local parkland could be disrupted for the full duration of their children's primary or secondary schooling. They explained that even replacement planting would take decades to achieve comparable amenity and ecological values.

#### **5.4.2 Discussion**

The IAC has identified the following relevant strategies in the Planning Policy Framework of planning scheme at Clause 19.02-6S including:

Improve the quality and distribution of open space and ensure long-term protection.

Protect large regional parks and significant conservation areas...

Ensure that where there is a reduction of open space due to a change in land use or occupation, additional or replacement parkland of equal or greater size and quality is provided...

Ensure that urban open space provides for nature conservation, recreation and play, formal and informal sport, social interaction, opportunities to connect with nature and peace and solitude.

Develop open space to maintain wildlife corridors and greenhouse sinks.

The IAC supports the designation of certain parklands as “no go zones” by the Proponent early in the process, especially for land in and around the Yarra River corridor with high conservation values. While the BBW and Manningham Councils expressed the view the decision to tunnel under these areas was “*a no brainer*”, the IAC considers it nevertheless represents an appropriate and important avoidance and mitigation measure.

Irrespective, the Project will have profound impacts on the use and enjoyment of parkland and passive open space. This will impact the community in the short and long term. While this will probably peak during the construction period given the land requirement, many aspects will persist into the operational stage and on an ongoing basis.

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<sup>238</sup> A summary of these was provided at page 15 of Submission No. 800 and in Document 438a and 438b.

<sup>239</sup> Oral Presentation at Hearing, Document 173.

The IAC considers that this risk should have been separately identified in the EES and responded to, as distinct from being agglomerated with sporting and recreation uses. Likewise, impacts of the Project on shared community aspirations to protect and enhance parkland also constitute social effects that have not been weighed sufficiently.

This also appears to be the first major project to be assessed since the commencement of the YRP Act that would directly affect the Yarra River and its broader setting. By operation of the MTPF Act, the Project and its constituent components may be exempt from the technical operation of the YRP Act.

Irrespective, the IAC considers that its contents provide important direction for the management of land in this sensitive region and that a project of this scale should make a commitment to advance its values, which expressly includes social values. At minimum, the EPRs should reference the need to have regard to the principles of the YRP Act and the objectives of the Yarra River Strategic Plan (when released) in respect to providing and managing parkland and open space, ecology and re-vegetation.

The IAC is not persuaded that this issue has been given enough priority, for example, it observes how the Project boundary and Reference Design include swathes of potentially significant vegetation and habitat adjacent to the Yarra River. This includes land with significant mature native vegetation adjacent to BAAG extending under the Manningham Road Interchange. In addition, land forming part of the Yarra River environment such as east of the BIP does not appear to be identified for integration and rehabilitation, even though the Project boundary abuts it.

Although the Proponent has committed to EPRs that would require the Project footprint to be minimised, it has also not confirmed that areas of significant parkland (either in its own right or as part of a connected parkland system) used and valued by the public will be sought to be avoided. The IAC considers that this aspiration should directly influence the ultimate Project boundary as discussed in Chapter 7.3.

The IAC also agrees with submitters that it is vital to consider the effects of a long construction schedule, as well as the lengthy projected life of the Project. A key concern should be to ensure that staging of construction works, and compounds is carefully managed by the proponent and its contractors to ensure reasonable ongoing access to all forms of open space. For example, some parkland along the Koonung Creek linear reserve near Mountain View Road is designated for construction compounds, while the portion further east is currently designated for improvement works such as drainage and walking or cycling paths. It will be important to stage these works to provide access to key parts of the reserve for users,<sup>240</sup> even if somewhat greater travel distances are involved for users during construction periods.

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<sup>240</sup> Including a potential evacuation site for the Belle Vue Primary School, as exists currently.

### 5.4.3 Findings

The IAC finds:

- The designation of certain parklands as “no go zones” represents one appropriate and important avoidance and mitigation measure taken by the Project.
- The risk of impacts on parkland and passive open space should have been separately identified in the EES and responded to, as distinct from being agglomerated with sporting and recreation uses.
- Impacts of the Project on shared community aspirations to protect and enhance parkland constitute social effects that have not been weighted sufficiently.
- The Project will have profound impacts on the use and enjoyment of parkland and passive open space which will impact the community in both the short and long term. These effects have not been suitably managed by measures proposed in the EES or the EPRs.
- It is vital to consider the effects of a long construction schedule, as well as the lengthy projected life of the Project when considering effects on parkland and open space.
- All parkland and passive open space permanently required for the North East Link Project must be replaced as part of the Project works in order to suitably mitigate community and social impacts. At minimum, an equivalent quantity should be provided in key locations with a commitment to its enhancement in collaboration with land managers.

## 5.5 Effects on sport and recreational facilities

### 5.5.1 Evidence and submissions

The Project will displace many sports and recreational facilities either temporarily or permanently. The Proponent provided status updates through the Hearing on relocation.<sup>241</sup>

The EES acknowledges that impacts on open space and recreational facilities will result in social impacts for users. Risk SO08 identifies:

Full or partial land acquisition of sporting, open space and recreational facilities reduces the function and viability of the facility and in turn reduces opportunities for an active lifestyle and impacts on social networks that people create through participation in sporting and recreational activities.

This risk is identified as ‘high’ given its impacts on the wider region, severity and long duration. The probability is identified as ‘possible’. With mitigation as proposed through the EPRs, the EES then identifies the residual risk as ‘low’. This rating was contested by many submitters and Council experts and community groups as discussed below.

The Proponent submitted that it has undertaken and continues to be engaged in extensive efforts to develop strategies to mitigate social impacts associated with the Project. This

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<sup>241</sup> The last being Document 432.

includes detailed work with sporting clubs, councils and local schools to identify and develop options for suitable temporary relocation facilities and long-term reinstatement of available facilities. Technical Note 57 was provided by the Proponent at the Hearing (updating Technical Note 37) as to the status of discussions with sporting clubs.<sup>242</sup>

Useful guiding principles are outlined in the *Preliminary Options Assessment*, including a commitment to update facilities to existing standards.

The IAC was advised that relocation options will commonly necessitate improvement or construction of new facilities on other land in the region to accommodate relocated uses. For example, the IAC was advised that several upgrades to existing facilities have been committed to offset Project effects, such as providing a new pavilion and sports grounds at Greensborough Secondary College and Ford Park.<sup>243</sup>

Mr Simon also explained that it is important to make allowance for growth in sports and recreation activities during the construction period when considering relocation options.

The Proponent proposes to rely on the social and community suite of EPRs, together with business and land use EPRs to establish a framework for the management and mitigation of effects on community facilities and open space.<sup>244</sup> It also relied to some extent on potential land bridges as replacement or additional open space, especially across Greensborough Road in Watsonia.<sup>245</sup>

Mr Weston recommended alterations to draft EPRs SC1 (Reduce community disruption and adverse amenity impacts) and SC4 (Minimise impacts of displacement of formal recreation facilities) including:

- making specific reference to public open space
- deleting the words 'as far as is practicable' as a limitation on mitigation measures and making them more performance focused
- covering facilities outside the Project area that may be affected
- requiring endorsement of a relocation plan for formal recreation facilities to ensure outcomes.

Dr Stubbs shared her concern that the wording of EPR SC4 as originally drafted was too highly qualified.

Mr Barlow was more definitive. In his view, even though its metropolitan significance weighs heavily in favour of the Project, it was important for the Project to commit to 'no net loss of open space' by way of mitigation, as well as to provide additional land for open space to offset its effects.

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<sup>242</sup> Document 432.

<sup>243</sup> With a contract signed for approximately \$8 million of upgrades for Ford Park as advised by representatives for the Proponent.

<sup>244</sup> Per opening remarks, Group 5: Business and social impacts, Document 187.

<sup>245</sup> Mr Czarny for the Councils cited examples where land bridges made a positive urban contribution in other contexts.



He considered that the Project should recognise the long-term reservation of land in the region for future open space as illustrated in Figure 24 and activate its provision for the community.<sup>246</sup> If all opportunities were taken up, approximately 27 hectares of new open space would be created. In conjunction, he recommended changes to the EPRs to formalise relocation efforts by the Proponent.

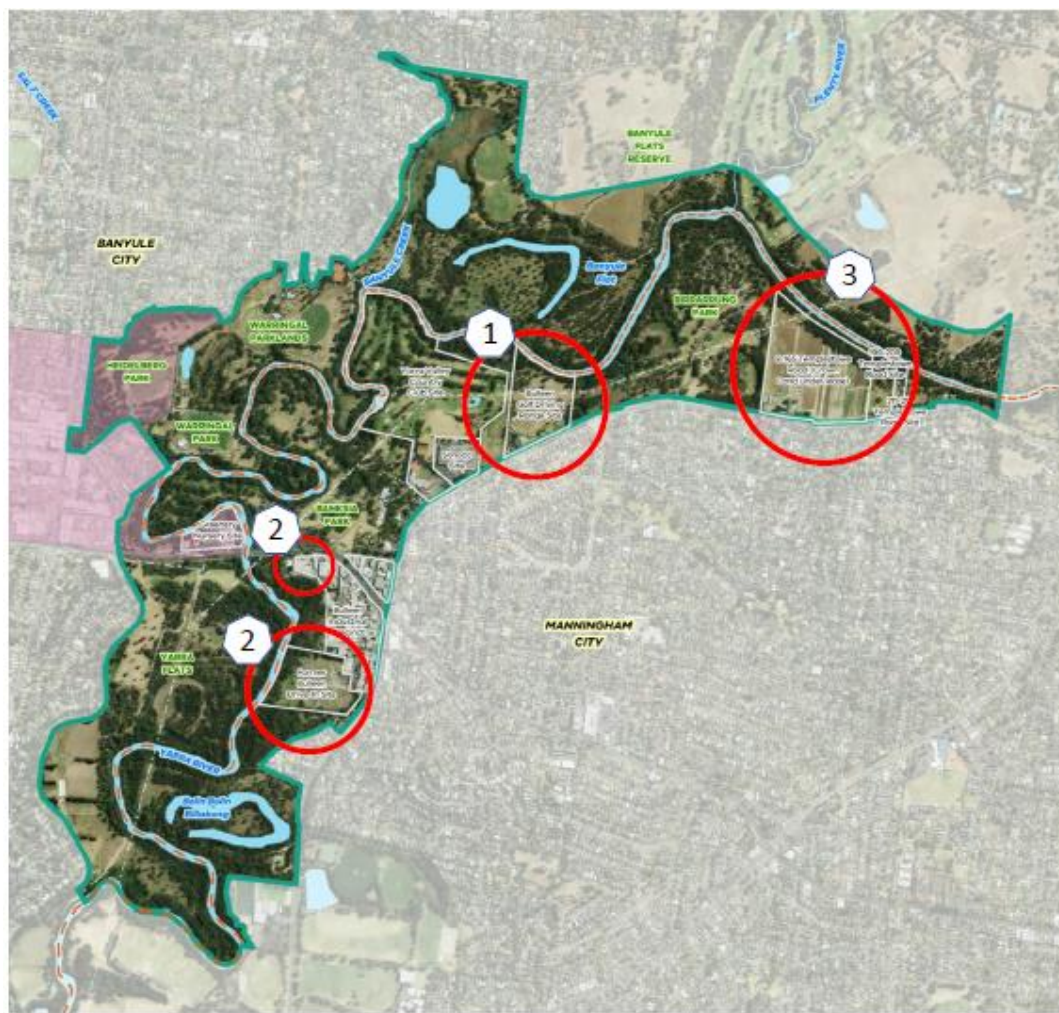


Figure 24 Public Acquisition Overlays in the region<sup>247</sup>

In terms of the area to be replaced, Mr Barlow seemed to accept the Proponent's purported distinction between land zoned and set aside for open space (to be replaced and added to) and land within the Road Zone (not properly regarded as 'open space' to be replaced).<sup>248</sup>

<sup>246</sup> In most instances, these sites had been earmarked for public open space for over 40 years (since 1975). One example was the proposal to shift Templestowe United Football Club to the Driving Range and adjacent Parks Victoria site at Templestowe Road.

<sup>247</sup> Tabled document 173, slide 22.

<sup>248</sup> Of an overall area of approximately 35 hectares of open space would likely be affected, he suggested that around 22 hectares appeared to be in the Road Zone.

In response to questioning by the IAC about priorities for these sites, Mr Barlow identified the Golf Driving Range, the Bulleen Drive-In site (to close the gap in the river environs and conservation area) and the Henderson Seed Farm site (albeit with a potential lead time).

**(i) Bulleen Park and surrounds**

Open space in the Bulleen Park area is expected to be reduced by at least 2.68 hectares during operation (with greater amounts during construction). At this stage, the Project is likely to absorb the front oval at Bulleen Park and three holes of the Freeway Golf Course. It would also require the Boroondara Tennis Centre and nearby Bulleen Swim Centre.

No proposal was put before the IAC for the relocation of the swim centre and it is unclear whether a suitable site can be located, or whether processes under the *Land Acquisition and Compensation Act 1986* are intended as sole 'mitigation'.

Part of Bulleen Park is in Boroondara, with another part in Manningham. These municipalities each made separate submissions on the issue of open space facilities in this location, since they diverged in opinion.

Boroondara submitted that it was vital to maintain the Freeway Golf Course as an 18-hole, minimum par 69 competitive course with a minimum length of 5,000 metres. The Harp and Camberwell Golf Clubs are located at this golf course. Each made submissions urging the IAC to recommend its retention as an 18-hole competitive course given its strengths as a heavily used public golf course<sup>249</sup> and provider of health and social benefits. Mr Simon considered that the demand and history of usage suggested this was warranted.

Boroondara also supported reallocation of recreation uses within Bulleen Park to facilitate the redevelopment of the Boroondara Tennis Centre within this suite of recreation uses.

Manningham took a different view. If impacts on Bulleen Park could not be avoided, it considered it was reasonable for the Freeway Golf Course to be reduced to a 9-hole course, with opportunities for diversified golf activities such as a driving range. It pointed to at least five other publicly accessible golf courses offering 18 holes within a 10 kilometre distance.

This option was preferred by the Proponent, albeit with a series of reports and letters produced at the Hearing apparently with late notice or for the first time.<sup>250</sup>

Figure 25 contains an extract from the Sport and Recreation Preliminary Options Assessment pertaining to Bulleen Park.

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<sup>249</sup> With approximately 55,000 rounds played in the last year.

<sup>250</sup> Including 378a and 378b.



Figure 25 Potential reconfiguration options for sports and recreation in the Bulleen Park area<sup>251</sup>

Mr Weston preferred Option 3 of the Preliminary Options Assessment since he considered it was the only option that would provide suitable replacement facilities for all clubs. However, it was unclear as to how the archery and aeromodellers clubs would continue to be separately accommodated.

The Proponent preferred Option 4 with an updated layout as provided in Technical Note 57. This would include a 12-hole golf course (par 46<sup>252</sup>), additional golf opportunities and a 23-court tennis centre.

### Tennis centre relocation options

The Proponent proposed options throughout the Hearing for the re-establishment of the Boroondara Tennis Centre. These included the Musca Street Reserve or land in front of the current Manningham Club on Bulleen Road.<sup>253</sup>

Boroondara Council had reservations about both alternative options given flood levels, access and parking issues and environmental impacts. In addition, Musca Street reserve is surrounded by existing dwellings and it did not appear that notice of this proposal had been given to nearby owners and occupiers.

<sup>251</sup> Tabled document 190, slide 4.

<sup>252</sup> Or par 69 if a second loop of 6 holes is played.

<sup>253</sup> As outlined in Documents 207a, b and c and 247.

Mr Simon considered that the relocation should at least provide a like-for-like facility but that it would be desirable for it to make future provision for growth and current expectations for a regional facility of this type, including space for spectator seating and accessible access (i.e. Disability Discrimination Act compliant).

## **(ii) Other sports and recreation facilities**

Mr Simon summarised the then current extent of agreement between sporting and other local clubs and the Proponent and provided recommendations for ongoing resolution of relocation options. He divided this analysis into the Northern Area (Banyule Council), Bulleen Park Area (Manningham and Boroondara Councils) and Southern Area (Whitehorse Council).<sup>254</sup>

In terms of timing, Mr Simon and Dr Stubbs emphasised that the Proponent needed to ensure that all facilities were re-established or relocated *before* Project works in relevant areas to ensure that these important community activities could continue.

Key areas of dispute or uncertainty at the Hearing included:

- the role of and opportunities for the Yarra Junior Football League
- concerns by clubs that the Proponent suggested relocation options were geographically unsuitable
- whether active sports could be established on the Bulleen Driving Range site on Templestowe Road
- a lack of currently identified suitable alternatives for the aeromodellers club and archery club at Bulleen Park
- operational challenges for the Hockey Club at Elgar Park.

### **Yarra Junior Football League**

The League is responsible for approximately 11,000 players comprising 508 teams. It has extensive facilities at Bulleen Park at the front oval (including its permanent administration functions) with rights to use parts of other rear ovals, attracting around 20,000 people to Bulleen Park each year. It explained that it was prepared to relocate to an alternative site to free up other uses of Bulleen Park and to avoid more extensive development of the rear ovals and facilities offered to it that were more heavily affected by flooding.

The League highlighted that the Project represents a *“once in a generation opportunity to realise longstanding transport objectives”* but that it is also essential that Project outcomes *“demonstrate a once in a generation opportunity for net community benefit in other area”*.

The Proponent proposed to relocate the League to Ford Park and to upgrade facilities to what it explained was a full-size AFL playing field.<sup>255</sup> Alternatively, the Proponent offered to

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<sup>254</sup> His slides, Document 282, provide useful summary proposed relocation maps and identify which relocation discussions are pending.

<sup>255</sup> Outlined in Technical Note 56.

temporarily relocate the League to Ford Park and to facilitate its relocation to Bulleen Park (relocated Ovals 1 and 2 at the rear) in approximately 2025.

The League contested this description of the proposed specifications at Ford Park and submitted that it could not sustain even its current schedule at that property. It also submitted that even a temporary relocation to Ford Park would significantly compromise its operations and result in greater travel times for many competing teams and players.

The League expressed a strong preference to be relocated to the Henderson Seed Farm site at 165 Templestowe Road, Bulleen which is owned by the Crown and managed by Parks Victoria which recently signed a private commercial lease for 15 years.<sup>256</sup> This would align with potential options identified at the Hearing to relocate soccer clubs from Bulleen Park to newly constructed soccer pitches on the nearby Golf Driving site at Templestowe Road.<sup>257</sup>

Late in the Hearing, Parks Victoria advised the IAC that it did not currently support the League's proposal for the Henderson Seed Farm site since, in its view, the site had been identified for passive open space. It also considered it premature to facilitate a sporting use of this land until the Draft Yarra River Bulleen Precinct Land Use Framework Plan had been finalised to document a suitable strategic way forward.<sup>258</sup>

### **Geographical barriers to relocation options proposed by the Proponent**

The Proponent identified proposed relocation options to accommodate certain sporting clubs that would be displaced. In some instances, these sporting clubs did not support or actively opposed the relocation proposal advanced.

This included the Macleod Junior Football Club and Macleod Cricket Club who considered that the new location proposed at Greensborough Secondary College<sup>259</sup> would be too removed from their current catchment and would be too inconvenient for families or players to get to. They submitted there was a genuine risk that these clubs would be fractured from their established communities or would become unviable. This was particularly the case for clubs with numerous young players who walk or cycle to their grounds for both training and to play.

In response, the Proponent advised that alternative or replacement facilities such as these had been selected for various reasons, including geographic proximity, capacity to host suitable infrastructure and, in some instances, an ability for shared facilities to be provided.

These clubs expressed a strong preference to be relocated to upgraded facilities at Macleod College. The Proponent explained that this proposal was unfunded and therefore not part of its Project strategy.<sup>260</sup>

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<sup>256</sup> The Proponent sought to make further enquiries about this lease, but noted that the provisions of the LACA could enable a leasehold to be purchased if necessary.

<sup>257</sup> Shown in the concept plans attached to the Yarra Valley Country Club submission, Document 349b.

<sup>258</sup> Document 400.

<sup>259</sup> Developed in collaboration with Banyule City Council.

<sup>260</sup> Details of its funding allocation to relocate displaced sporting clubs was not disclosed to the IAC.

### **Yarra Valley Country Club site**

This site is privately owned by the Yarra Valley Country Club and has a total area of approximately 6.5 hectares. The land is included in the Special Use Zone with numerous overlays reflecting its riparian and native vegetation conservation values and direct adjacency to the Yarra River.<sup>261</sup>

A current planning scheme Amendment proposes to rezone the land to permit substantial residential development fronting Templestowe Road with the balance of the land being zoned for Public Park and Recreation.<sup>262</sup> That planning scheme amendment is on hold pending the outcomes of this process. Alternatively, the owner of the land requested that the land be acquired for public open space as offsets for the Project, noting that part of the land is included in the Public Acquisition Overlay (PAO) for this purpose. It also suggested that part of its land could be used for an integrated drainage solution to facilitate the development of soccer pitches on the adjacent Golf Driving Range site.

### **Aeromodellers and archery clubs**

Most options for Bulleen Park identified in the EES and the Hearing were unsuccessful in locating alternatives for both clubs. Initially it was thought that the Golf Driving Range site could be suitable for the archery club, but it transpired that its orientation towards the road and other users would not meet safety requirements.

The Doncaster Aeromodellers Club submitted that there was no realistic option for it to use alternative facilities in sub-regional locations.<sup>263</sup> The club submitted that its facility was more heavily used than the archery field and had more stringent requirements provided by the Civil Aviation Safety Authority that made it challenging to relocate. It also noted the current layout of the field enables multipurpose use, such as for dog walking and general exercise.

### **Hockey Club at Elgar Park**

Most uses within Elgar Park were likely to require temporary relocation due to proposed construction compounds. At this stage, the Hockey Club is proposed to remain operational throughout the works.

Mr Simon was concerned that this would not be sustainable given likely changes to the ambient environment. He recommended that the proposed construction compound be in Eram Park instead. The Proponent suggested that its preliminary investigations indicated that this was not feasible due to technical considerations and queried why impacts on the Hockey Club could not be suitably managed through EPRs.

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<sup>261</sup> Document 394a. A portion of the land is identified within the proposed DDO and SCO for the Project.

<sup>262</sup> C125man.

<sup>263</sup> Submission 464 and Document 383.

## 5.5.2 Discussion

At this point in time, not all user groups can be reasonably accommodated in the area. Others are likely to have their operations significantly curtailed.

The IAC believes that a notable deficiency is that the published EES did not include a formal objective and associated commitment by the Proponent to replace all open space on a like-for-like basis including land used by sport and recreation clubs. This is regarded by the IAC as essential to mitigating residual impacts to an acceptable level.

Overall, the IAC does not agree with the risk rating advanced in the EES for impacts on open space and recreation. While this risk is identified as 'possible', the IAC regards these risks (SO08) as certain. This would increase the agglomerated rating above 'high' which would be consistent with the magnitude and distribution of the impacts on these places, as well as the likely impacts on users.

Even if the EPRs were refined to provide more detailed guidance, the IAC is not persuaded that the residual impacts on open space and recreation could reasonably be characterised as 'low' or even 'medium'.

### (i) Establishing fundamental principles

Relevant strategies to State planning policy at Clause 19.02-6S include, to:

Ensure that where there is a reduction of open space due to a change in land use or occupation, additional or replacement parkland of equal or greater size and quality is provided.

Accommodate community sports facilities in a way that is not detrimental to other park activities.

Ensure open space provision is fair and equitable with the aim of providing access that meets the needs of all members of the community, regardless of age, gender, ability or a person's location.

Plan open space areas for multiple uses, such as community gardens, sports and recreation, active transport routes, wildlife corridors and flood storage basins. [IAC emphasis.]

The IAC considers these should represent guiding principles for this Project, to be used as a touchstone when challenges or conflicts arise in meeting the needs of all user groups.

### **No net loss and delivering like-for-like replacement open space**

When Mr Barlow called on the Project to commit to 'no net loss of open space', with a preference to increase it, this appears to be the first time this notion was put forward. During the Hearing, the Proponent supported the substance of a new EPR proposed by Mr Barlow relating to the replacement of open space.

Open space is a precious resource, especially in established areas. Providing open space is an essential contributor to the social fabric and wellbeing of communities along the alignment, which are anticipated to undergo extensive and direct impacts from the Project.

Evidence to the IAC documents the high level of demand for existing open space in municipalities that would be affected by the Project. Notable increases in demand are projected in association with population growth and lifestyle improvements and local

councils have invested significantly in policy and facility development to meet community needs.<sup>264</sup> It would be entirely inconsistent with local and State planning policy objectives for the Project to reduce open space opportunities without replacing or enhancing them.

Fundamentally, the IAC considers it incumbent on the Project to deliver at least like-for-like replacement open space with suitable functionality for all users.

Beyond this, it would be highly desirable for the Project to facilitate an *improvement* in quality or quantity of public open space as one way of improving outcomes for local communities to offset Project impacts. This will be especially important since their access to and use of local and regional public open space is likely to be curtailed for a number of years during the construction period. It is also entirely consistent with policies at State and local level. The IAC is not in a position, however, to suggest what the proportion of additional open space should be.

Following multiple options assessments, detailed submissions and ongoing investigation, it is clear to the IAC that Bulleen Park cannot accommodate all reasonable existing user demands (let alone future demands) within the reduced area that will be available following the Project.<sup>265</sup> For this reason, the IAC considers that options considered in documents such as the *Bulleen Park Area Sport and Recreation Options Assessment*<sup>266</sup> and in the Proponent's submission have been approached with an overly narrow lens or without adequate commitment and future steps to facilitate the availability of alternative sites.<sup>267</sup> In addition, it does not appear that future parking demands for all users have been fully accounted for, which is a vital component of servicing these facilities.

In the IAC's view, it is not reasonable for the Project to result in the loss or serious curtailment of some uses of open space with no reasonable prospect of suitable replacement or relocation (especially noting that all current uses wish to continue in at least their existing formats).

Since it is clear that not all facilities can be accommodated like-for-like at Bulleen Park and surrounds (even after Project completion) the Proponent should be obliged to explore and provide alternative options for such facilities in the local area. Insufficient efforts have been made in this regard to date.

The focus so far has been on how remaining land could be maximised, as well as how other school facilities and existing recreation spaces could be enhanced to provide greater useability. Maximisation of existing facilities and exploration of new alternatives will both need to be taken up to achieve an acceptable way forward for the Project.

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<sup>264</sup> Including policies at Appendix A of Technical Report I.

<sup>265</sup> Even if some users such as soccer are relocated.

<sup>266</sup> Appendix 2 to the *Preliminary Options Assessment*.

<sup>267</sup> Even though it suggests options for new open space in the area could be considered.



### **Opportunities for new open space**

The allocation of large tracts of land within the PAO (Schedule 2) for the purpose of open space provides a direct and timely opportunity. This is the product of long-term foresight and orderly planning.<sup>268</sup> Such land is well located close to areas that would suffer a loss of open space as a result of the Project. In addition, it provides an important opportunity to confer missing links of the Middle Yarra River corridor into public ownership and use.

Another feasible opportunity is the adjacent Yarra Valley Country Club site through which the Yarra River flows with associated riparian vegetation, noting that the owner has made a submission to the IAC seeking for that land to be acquired for open space.<sup>269</sup>

In these circumstances, the IAC cannot overstate the need to regard such sites as prime land for facilitating replacement or enhanced open space to mitigate the effects of the Project to an acceptable level. Subject to careful planning, it would provide a positive legacy at a regional level and would directly meet policy aspirations in Clause 19.02-6S of planning schemes to:

Ensure land identified as critical to the completion of open space links is transferred for open space purposes.

Some submitters including the BBW Councils and Manningham took the view that the Proponent would not be 'adding' to public open space in the region within the PAO since the land had already been set aside for this purpose.

The IAC does not agree with this notion. Reservations of land could conceivably continue in perpetuity, allowing a wide range of private land use. By acquiring the land for the purpose for which it was reserved, its provision for use by the public for open space would be ensured and the land activated for such use. Whether the Project in fact results in a 'net gain' of open space will depend on what proportion of these sites are acquired *beyond* a ratio of 1:1 replacement for lost existing open space.

### **Amount of land to be offset**

The IAC acknowledges the Proponent's submission about the purported distinction between land set aside for open space and land within a Road Zone. However, mapping on behalf of the councils appears to indicate that the extent of land thought by the Proponent to be within the Road Zone may be overstated, with much of this land having been transferred to local councils.<sup>270</sup>

Irrespective, the IAC recommends that this distinction not be applied rigidly for two key reasons. First, even landscaping and open space areas within Road Zones contribute in important ways to the outlook and amenity currently experienced by communities along the

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<sup>268</sup> Noting also that there have been multiple Advisory Committees and the like considering certain of these sites, such as the Bulleen Drive In site 'Gibson report 2003'.

<sup>269</sup> Document 349a. It may also be possible to finalise the planning scheme amendment for rezoning of the front portion for residential development with the balance of the land to represent a public open space contribution, as confirmed by Ms Johns on behalf of the owner when questioned by the IAC at the Hearing.

<sup>270</sup> Document 374e.

Project corridor (many of which offer direct access). Second, as identified by Mr Czarny and Mr Axford, modern road planning rightly seeks to provide landscaped outcomes to benefit road users and to integrate roadways with their settings. For example, it would be inappropriate to regard the full width of all land in a Road Zone in this location as available for asphalt surfacing.

The IAC considers that the definition of open space for the purpose of the EES is suitably inclusive. It recommends that a functional assessment be undertaken to include land in a Road Zone that is currently accessible to the public as open space (even if informal) or that is landscaped and contributes to the character of adjacent areas more broadly than just for road users.

Likewise, the IAC is not satisfied with the evidence of some witnesses that the proposed land bridges would provide generally equivalent open space compared to conventional open space areas of the same size. Given the limitations of their potential siting in Watsonia above the trenched Project and the need for screening for safety and noise control, they can only be expected to be attractive to a relatively narrow portion of users. While they could be expected to provide some landscape benefit, the IAC accepts Mr Barlow's evidence that they should be viewed as part of the access network rather than as replacement open space.

On the other hand, if road infrastructure in Watsonia was tunnelled or fully capped, this would provide far greater scope for continuous linear open space adjacent to Greensborough Road which would constitute a desirable urban design outcome and may represent open space in the true sense.

### **Timing for replacement of open space**

As identified in evidence and submissions, timing is another critical factor for the relocation or redevelopment of open space, especially when replacing formalised open space and recreation facilities. Many clubs have worked hard to achieve their current levels of success, and the prospect of being evicted from their current grounds without a timely and suitable alternative represents a serious risk that is largely out of their control.

Therefore, the IAC accepts the recommendations of experts such as Dr Stubbs and Mr Simon that the Proponent should be required to use its best endeavours to provide relocated facilities for formalised sport and recreational uses *before* existing facilities are removed from use. At a minimum, all open space (including passive open space) should be offset by the commencement of operation of the Project.

Regular reports should be provided by the Proponent to local councils, affected sports and recreation clubs and the Community Liaison Group to document efforts made with detailed timelines.

### **(ii) How to deliver more open space as part of the Project**

The guiding principles above demonstrate a need to fast-track the provision of replacement open space on land covered by the PAO.

This raises a range of important practical considerations. The first is how these sites would be secured. In the ordinary course, the nominated acquiring authority would lead this

process. However, this has the potential to result in potential differences in opinion or delays that might lead to positive outcomes of the Project being frustrated.

Instead, the IAC recommends it is appropriate to identify these sites *within* the Project boundary<sup>271</sup> and to include works for the enhancement of open space and provision of active recreation facilities within Project works under the Incorporated Document to provide a relevant nexus. However, unlike other land within the Project boundary, the use and development of these sites without a planning permit would need to be expressly limited to open space purposes.<sup>272</sup> This is intended to provide a direct way for the Proponent to provide these sites and replacement facilities under the project delivery provisions of the MTPF Act.

This process would also recognise that the use of these facilities extends across municipal boundaries. Solutions for this Project are likely to need to transcend conventional municipal responsibilities, with capacity for the Proponent to facilitate appropriate ‘compensation’, land swaps or enhancement of other local facilities to provide fair outcomes (especially in the Bulleen Park area).

Aside from having significant environmental values, the PAO sites are all substantial and provided that guidance is adopted from DDO (Schedule 2) or similar in other planning schemes, the IAC considers that conventional development for sports facilities is unlikely to raise acute potential for visual impact or land use conflicts with abutting land. Comparable protection could be offered through the Incorporated Document by including minimum setbacks, heights or possibly noise protection works for development of this land without a planning permit.

### **Relationship with strategic and land use planning**

The IAC recognises that for some authorities such as Parks Victoria, the provision and development of this land may be regarded as premature in advance of the Yarra Strategic Plan<sup>273</sup> and the Yarra River Bulleen Land Use Framework Plan<sup>274</sup> being finalised.

However, the Project has precipitated a more urgent need for action to protect community interests for the reasons outlined above. The Draft Yarra River Bulleen Land Use Framework

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<sup>271</sup> Noting that this was suggested by representatives for the Yarra Junior Football League and supported by Mr Barlow.

<sup>272</sup> In response to questions by the IAC, Mr Barlow suggested it may not be appropriate for offset open space to be included in the SCO, since this was not its primary purpose. The IAC takes a more holistic view of the Project and its controls.

<sup>273</sup> A ten-year overarching policy and planning framework addressing the Yarra River and land within 1 km each side in an integrated way. Land used for open space is designated as part of the ‘Greater Yarra Urban Parklands’. The Yarra Strategic Plan is a document being prepared by Melbourne Water in line with requirements of the YRP Act which include public consultation, specialist input, Panel Hearing and Ministerial approval. Its foundation is the 50 Year Community Vision for the river, endorsed in 2018 as tendered at the Hearing.

<sup>274</sup> Document 23a, a strategic document prepared in accordance with Action 21 of the Yarra River Action Plan. The Land use Framework Plan is intended to provide direction for future land use changes, recognising the opportunity of the area to become an “internationally-significant cultural precinct, centred on the relationship between the arts, nature and Traditional Owner heritage”. It was due to be considered by the Yarra River – Bulleen Precinct Advisory Committee but was adjourned until the outcome of this EES process.

Plan recognises that there is potential for land use renewal as part of the Project.<sup>275</sup>

A strategic decision was made long ago that these sites are suitable for open space. The notion of providing a mix of active open space (such as at the front of sites on Templestowe Road) and passive open space/conservation (at the rear of properties adjacent to the Yarra River environs) on the sites within the PAO and a complementary mix of uses is central to the draft Land Use Framework Plan. It would respond to the key objective of providing reconnected parklands.

Significantly, the IAC considers that there is a high level of consistency between this proposal and objectives of the YRP Act at section 5, with this category of land specifically recognised in subsection 5(b). It would also align with protection principles in section 8 and especially with social, recreational and cultural principles in sections 10-12.

From the IAC's perspective, this would leave the following key decisions to be made:

- which sites within the PAO should be secured as a priority given community demands, issues of location, size and natural features as well as commercial issues such as cost. The impacts on any existing uses may also be a relevant factor, with some users indicating a willingness to vacate in the short term
- how these sites should be managed or developed, especially those affected by flooding and other environmental sensitivities
- which areas should be nominated for use as active open space versus passive open space or conservation areas, noting that some uses could be identified as temporary having regard to community needs over the life of the Project and beyond.<sup>276</sup>

The IAC considers these decisions need to be resolved in the short to medium term as an outcome of this State-significant Project, with final oversight and approval by the Minister for Planning. The Incorporated Document can provide for input by land managers and relevant authorities including councils, the Birrarung Council and Traditional Owners as to these matters.

This proposal would respond suitably to the principle in section 8(5) of the YRP Act seeking all levels of government and all agencies to take shared responsibilities for delivering and managing positive outcomes for the Yarra River and surrounding land.<sup>277</sup> It would also provide capacity to create a 150-200 metre riparian zone from the Yarra River as requested by Melbourne Water and expansion of parklands to increase habitat links.

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<sup>275</sup> Page 34.

<sup>276</sup> These are all the type of matters generally referred to in section 11(2) of the YRP Act.

<sup>277</sup> It is also founded on principles derived from section 13 of the YRP Act relating to management of these natural assets. For example, it may also be possible to permit short term use of part of this land for sport and recreation purposes to facilitate interim relocations, with the land to revert to more passive open space on Project opening.

### **(iii) Sites or uses remaining in dispute**

#### **Hockey Club at Elgar Park**

The facilities at the existing Hockey Club at Elgar Park are of a high standard and meet user needs.<sup>278</sup> There was no evidence that there was another suitable alternative close by. The IAC considers that its ongoing use of these facilities can reasonably be managed through operational controls in EPRs pertaining to dust, noise control and the like even if a nearby construction compound is proposed.

#### **Yarra Junior Football League**

The Yarra Junior Football League is an umbrella body for up to 32 clubs. It provides an important administrative, coordination and training role. Its facilities would be directly impacted by permanent Project works and largely rendered unusable. It appears to the IAC that it is not feasible for its needs to be met fully if relocated to Ford Park as currently proposed by the Proponent.

Instead, the IAC considers this to be a prime candidate for a new facility on land identified in the PAO, especially considering estimated projection of growth in the League in the coming years. This would also free up other opportunities for the retention or enhancement of other sporting facilities in the reconfigured Bulleen Park which could not be relocated easily.

#### **Prospect of club revenue decline**

A remaining concern for many clubs is that by relocating or having more limited access to existing facilities (or by impacts on local business operations), they may suffer a decline in revenue such as by reduced local sponsorship or a more limited opportunity to sell food and drink. Some requested a financial contribution from the Proponent for at least the period of displacement to enable their ongoing operations.<sup>279</sup>

The Proponent did not respond to this request formally. The IAC appreciates that financial viability may be an issue for some clubs proposed to be relocated. It encourages the Proponent to consider ways in which it could assist these clubs to ensure their viability, potentially by taking a wider view of the EPRs and the types of support that could be offered.

### **5.5.3 Findings**

The IAC finds:

- Both temporary and residual effects on sport and recreational facilities are greatly understated by the EES. There is no certainty inbuilt into requirements for the Project that the needs of users will be met during or after the Project. This is a vital component required to mitigate effects to an acceptable level.

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<sup>278</sup> The IAC was advised that the club had taken out a loan to pay for ongoing resurfacing and maintenance of this facility with the assistance of Council.

<sup>279</sup> For example, the Watsonia Sporting Club that currently operates from AK Lines Reserve is likely to be relocated for an extended period. It submitted that it may incur a funding shortfall of up to \$250,000 per season.

- For recreational and sporting facilities, like-for-like facilities should be provided in suitable locations, facilitated by a detailed relocation plan in the EPRs. Consultation with councils, Traditional Owners and land managers about priorities and opportunities for such land will be vital to the success of this initiative.
- Beyond this, it would be highly desirable for the Project to facilitate an *improvement* in quality or quantity of public open space as one way of improving outcomes for local communities to offset Project impacts.

## 5.6 Impacts on school facilities and associated clubs

### 5.6.1 Evidence and submissions

Many well-developed and used private school sporting facilities stand to be directly affected by the Project, especially in the Bulleen Road area.<sup>280</sup>

The Project boundary encompasses part of the Carey front oval, sports courts, parking areas and access. It also extends to the front parts of Trinity Grammar School (Trinity), including a projected need to drain its front lake and remove associated vegetation.

Trinity presented a succinct submission to the IAC, explaining the heads of agreement reached between it and the Proponent. It seeks a Memorandum of Understanding to give effect to this to achieve acceptable outcomes.

Carey was concerned about impacts on its campus, learning programs and community impacts. It requested the Project boundary be shifted outside its sport complex boundary and for new parking areas to be provided within Bulleen Park for its exclusive use. Further discussions were held between the Proponent and the school outside the Hearing process to consider other opportunities to maintain suitable access and useability of more highly used areas including its front oval.

Marcellin is the school with the highest portion of land within the Project boundary - an estimated 110-metre-deep area of land across the front of its property adjacent to Bulleen Road marked for a construction compound. It raised a concern about inequity, especially since it was the only private school in this area that provides all learning facilities at the one campus, not only its sporting grounds. It was greatly concerned about the impacts of the works on its ovals as well as for access to the school.

Marcellin submitted that the impact of a construction compound in this location, occupying a significant portion of its playing fields for a period of seven years or longer is a significant impact. As Ms Forsyth for Marcellin submitted:

...the EES does not provide any information regarding the use of the construction compound, or the period of its use. Nor does it provide any justification of the need for the construction compound on Marcellin's land, or any explanation as to why the significant impost on Marcellin cannot be avoided.

<sup>280</sup> The amount of privately held land that would be affected during construction is estimated between 9 per cent (Carey), 20 per cent (Marcellin) and 26 per cent (Trinity), with 1-4 per cent of this land being required permanently if the Reference Design is used as a guide. This is depicted in map form in Document 49a.

Instead, there was no assessment of the impacts of the construction compound, in the EES, or by the NELP experts in the course of giving their evidence. All of NELP's relevant witnesses advised that they had not modelled or assessed the potential adverse impacts of the construction compound.<sup>281</sup>

Old Collegian sports clubs made submissions, concerned that their current arrangements and connections with these schools would be disrupted. Many were concerned that the EPRs as originally drafted would not protect the ongoing operation of these clubs, let alone meet their need for capacity to expand in some instances.

Marcellin also made detailed submissions about the potential impacts of establishing a large site compound at the front of its property on students, parents and the reputation of the school, anticipating substantial disturbance over an extended time period.

Discussions between the Proponent and Marcellin progressed somewhat during the Hearing as reflected in Technical Note 57,<sup>282</sup> but remained unresolved. Efforts focused on reducing the extent of the need for the use of the front ovals for Project works. Questions remained as to the proper extent of the Project boundary to facilitate major sewer works further into the school grounds.

During the Hearing, the Proponent offered a revision to the social and community EPRs to include SC1 NEW and SC2 NEW relating to school and active recreation facilities. It also proposed to enhance SC2, for the Communications and Community Engagement Plan to include schools and educational institutions and to require a dedicated liaison officer to be appointed.

### **5.6.2 Discussion**

The IAC regards schools along the Project corridor as key stakeholders and sensitive receptors. This extends to both facilities with an indoor teaching component and those providing sports fields. Both need to be suitably protected and managed during construction and operation. In Chapter 8 (Noise and Vibration), the IAC expresses a comparable view.

The IAC is generally satisfied that a mutually acceptable outcome has been reached with Trinity, which includes progressing its Master Plan once Project works are complete.

Likewise, subject to proper resolution of access and parking issues, it considers that the impacts on Carey will be within reason, enabling school operations to substantially continue throughout construction and operation.

The IAC recognises that the sewer upgrade is essential but will be limited to a more confined period. With careful management, its impacts are likely to be acceptable.<sup>283</sup>

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<sup>281</sup> Document 223, page 31.

<sup>282</sup> Document 432.

<sup>283</sup> The IAC is less definitive about the application of the Special Controls Overlay to extend to encompass the sewer line on the Marcellin land. While there may be relevant planning scheme exemptions to facilitate this work, this cannot be confirmed at this stage of the Project since not all supporting civil works have been documented.

### **Further work pertaining to Marcellin College**

Beyond this, further work is required to achieve an acceptable outcome for Marcellin and its Old Collegian teams. The IAC considers that recent discussions that seek to minimise the extent of land needed from its front ovals are generally heading in the right direction. In principle, the IAC also supports Marcellin's position that it is appropriate for the Proponent to have regard to its adopted Master Plan within reason, with some scope for flexibility where this would not compromise ultimate outcomes.

The IAC does not support the use of the front portion of the Marcellin land as a construction compound at all costs. In line with Dr Stubbs' evidence, it considers that this has the potential to be overly invasive for school activities and would set a poor precedent for a major project of this scale to intrude into integrated school facilities for such a length of time.

The IAC recommends that the proponent investigate other options for construction compounds (even if at greater cost) and only use the construction compound in this location as identified in the Map Book as a last resort. If this cannot be achieved, activities within this compound should be confined to comparatively less invasive and less time extensive works.

The IAC discusses the approval processes for construction compounds in Chapter 5.7.1 below.

### **5.6.3 Findings**

The IAC finds:

- The impacts on sporting facilities within schools in the Project area have the potential to be significant. It is important for the Proponent to continue to work with stakeholders to achieve workable outcomes for all stages of the Project.
- In particular, the location and size of a construction compound within Marcellin College has the potential to unreasonably disrupt school activities.

## **5.7 Impacts on quality of life**

### **5.7.1 Construction impacts**

#### **(i) Submissions and evidence**

The EES identifies the construction impacts as detracting from amenity and reducing the liveability and attractiveness of areas in Risk SO03. This is projected to cause inconvenience,

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Provided that there is a commitment to 'wind-back' the extent of the overlay once temporary work has been completed; this would be sufficient.



lifestyle change and disruption to daily life and activities. This risk is regarded as ‘high’ but reduced to ‘medium’ once mitigated by EPRs.

Significant unease was raised by submitters as to how virtually all reserves and open space in proximity to the alignment (other than those identified as ‘no go zones’) had been nominated for construction compounds in the Reference Design. This is reflected in Table 9-4 of Technical Report I.

Many submitters also raised detailed concerns about the prospects of living close to construction compounds. This was particularly problematic given the Project’s long construction period. Some submitters considered that it was not appropriate for construction compounds to be established near homes or vulnerable community facilities such as aged care centres. Dr Stubbs also regarded this as undesirable.

Residents near Borlase Reserve such as Ms George highlighted the extreme closeness of dwellings and the substantial around-the-clock works that would occur if the reserve was used as a TBM launch site.

Residents pointed to what they regarded as intolerable conditions created when part of the reserve was used for a storage and materials compound to support recent level crossing removal works in Rosanna (over approximately six months). They spoke of sleepless nights, excessive dust inhibiting them from opening windows or doing washing or the like. They dreaded the thought of more extensive construction work occurring nearby for a far longer period with extremely high numbers of truck movements, estimated at up to 960 trucks per day during peak construction periods.

Likewise, Mr Weston accepted that the greatest construction impacts were likely to be experienced at the northern TBM launch site, especially given the potential separation distance of 30-50 metres from dwellings, multiple construction techniques proposed and the likely timeframe. He regarded this as the second most significant social impact of the Project.<sup>284</sup> In his opinion, significant construction effects would also be experienced at the southern TBM launch site, M80 interchange, Eastern Freeway Interchange and properties near bridges identified for demolition.

The Proponent was asked by the IAC to provide greater detail about the Project’s construction needs, in particular, how the siting and size of construction compounds depicted in the Map Book were identified and how they would likely be used. It responded with Technical Note 44 but explained that their ultimate location and use would depend on tenderer requirements and the contractor.<sup>285</sup>

## **(ii) Discussion**

It is inevitable that construction activities for a major infrastructure project in an established area will cause disturbance to those living, working and recreating over a wide area.

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<sup>284</sup> Provided recommended changes were made to the EPRs.

<sup>285</sup> Document 166.

However, the location and use of construction compounds in connection with the Project has significant potential for social and amenity impacts, as well as impacts on health and wellbeing more broadly. This is especially the case for a linear project of this scale, combined with the estimated six to seven-year construction timeframe.

The Proponent is obliged to manage these effects sustainably for local communities. The IAC is not persuaded that this would be achieved through measures proposed in the exhibited EES, including the draft EPRs.

It has fundamental concerns about the potential identification of construction compounds close to dwellings, open space including schools and the effects of the long-term use of parkland and entire areas of other reserves for construction. Likewise, the IAC is not satisfied that realistic alternative options in the local area have been identified, or their costs weighed against likely detriment to those who may be affected.

The question is how best to achieve these outcomes at this stage of the process when using a Reference Design and detailed construction requirements are not known.

### **Requirement for approval of construction compound sites in Incorporated Document**

Because of the significance of this issue the IAC considers that the starting point should be for the Minister for Planning to approve the location and category of use of each construction compound via a requirement in the Incorporated Document.

This is justified because of the sensitive environmental overlays applying to many of these areas that requires particular care in their use and management that should not be the sole decision of Project contractors. An assessment of all other realistic options and associated costs should be demonstrated in documentation submitted for approval.

It is vital for tenderers, with the assistance of the Proponent, to engage in innovative or commercial ways to provide construction compounds for this Project. From the IAC's viewpoint, priority should be given to compounds that have the potential for less amenity impacts within reason, even if potentially higher costs (such as commercial leasing) or travel distances are involved.

Practically, this may only be suitable for staff parking (with shuttle buses to the work site) and administrative functions. For practical reasons, materials and storage areas need to be near the work site to minimise double handling and reduce construction traffic on the surrounding road network. The IAC considers large tracts of land including those identified within the PAO such as parts of the Greenery Garden Centre on Banksia Street and the front portion of the Yarra Valley Country Club may be suitable, recognising that their existing uses are forecast to cease in the short term.

Beyond requiring approval of the location and an outline of the use of each construction compound, this should be supplemented by a detailed EPR governing the ongoing use of construction compounds.

### **Potential TBM launch site at Borlase Reserve**

One potential construction compound deserves further comment.

The IAC had the benefit of an extensive accompanied inspection of the TBM launch site and associated construction compounds, storage and processing sites for the West Gate Tunnel Project.<sup>286</sup> That site has numerous locational benefits including its proximity to the port, ability to take up industrial land and clear separation from residential properties.

The IAC has particular concerns about the ability to manage impacts acceptably if a TBM launch site was provided at Borlase Reserve. Borlase Reserve has contrasting features that make it infinitely more sensitive – its physically constrained area, its proximity to residences and other sensitive community uses and the need for the site to take up valued parkland. This would be compounded by the prospect of cut and cover works adjacent to the reserve which would be highly invasive.

Consequently, the IAC is uncomfortable using Borlase Reserve as a TBM launch site or for any construction compound used for heavy machinery over an extensive period. Other concerns in relation to using Borlase Reserve for a TBM launch site are considered elsewhere in this report, including in Chapter 8 (Noise and Vibration) and reach similar conclusions.

While Banksia Park<sup>287</sup> has inherent environmental and cultural sensitivities in some areas, the IAC considers that that site just north of Bridge Street provides a more realistic site capable of careful management to achieve acceptable outcomes and this should be explored further.

## 5.7.2 Ongoing impacts on amenity from the Project

Community facilities and sensitive land uses including aged care facilities were identified in composite areas of the EES. In summary, the Proponent considered that effects on these facilities would be managed by suitably directed EPRs.

### (i) Submissions and evidence

The EES identifies a number of risks in this regard, including changes to amenity from the location of road infrastructure, affecting lifestyle and increasing vulnerability. It generally rates these as ‘low’ risk, principally because it regards the severity as low.<sup>288</sup>

A wide range of amenity impacts were identified by residents and businesses which diverged from this assessment. One of the comments from a submitter was how they felt “*stuck next to a project that we did not ask for, do not want and cannot escape*”.<sup>289</sup>

Noise impacts of the Project can also be expected to give rise to social impacts since they impact on liveability and quality of life.

Many residents on the south side of the Eastern Freeway were also concerned that their properties would be negatively affected by overshadowing from viaducts and tall noise wall

<sup>286</sup> Photographs were not permitted.

<sup>287</sup> The area identified for a TBM launch site north of Bridge Street.

<sup>288</sup> SO15 for example.

<sup>289</sup> Submitter 639.

structures up to nine metres high.<sup>290</sup> They emphasised that it was important for these to be well designed to:

- be functional to protect against unreasonable noise
- provide a visually acceptable outlook
- let light penetrate into gardens and homes.

A number of residents were also concerned about the loss of privacy that would result from elevated structures if provided as part of the Project. They conceded that there would also be a need to strike a balance in designing these structures to ensure that they were not visually overbearing.

### **The Proponent's expert's recommendations**

Mr Barlow focused on potential impacts from overshadowing and overlooking in his written and oral evidence.

He considered there was potential for unreasonable overshadowing of residential properties including secluded private open space from Project structures such as noise walls, especially where dwellings were located on the southern side of the alignment. He was conscious that the nature of overshadowing from roadway structures is likely to be more extensive and consistent than from conventional structures that are governed by the provisions of ResCode. He suggested that EPR LV4 be re-worded to ensure new overshadowing is no worse than current shadowing impacts from existing noise walls or for the ResCode standard to be used where structures are being introduced (also potentially limiting winter shadowing).

Mr Barlow also suggested a detailed standard to prevent unreasonable overlooking through EPR L4 (with a minimum view threshold of 15 metres; based on a typical local road width), recognising the potential extent of elevated structures such as shared user paths close to private open space and residential windows.<sup>291</sup>

Some submissions raised concerns about the prospect of increased freeway lighting in connection with expanded roadways. They considered this would affect their ability to sleep. Some local groups also highlighted the potential impacts of increased lighting on night time fauna.

Mr Wyatt touched on the potential for lighting impacts associated with the Project and suggested this could be adequately addressed by a suitable EPR referencing the relevant Australian standard.

### **(ii) Discussion**

The IAC is sympathetic to the multitude of likely impacts on amenity to local communities, especially those living closest to the Project boundary. The question is whether this can be

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<sup>290</sup> Depicted in mapping in Document 43 and evaluated by Mr Barlow in pages 44-45 of his expert report.

<sup>291</sup> Page 45 of his expert report.

minimised to a reasonable extent, primarily through the EPRs which are expected to provide suitable direction as part of the approval regime.

It is inevitable that some Project structures will cause overshadowing or generate the potential for overlooking. Likewise, the provision of new and expanded freeways will require the careful management of additional or modified lighting.

The EPRs are expected to do the 'heavy lifting' in this regard. The IAC considers that the suite of amended EPRs as recommended by it would provide reasonable guidance for the Proponent and contractors to protect local amenity to the extent possible for a project of this scale.

### **5.7.3 Findings**

The IAC finds:

- The effects of construction on amenity and community wellbeing will constitute one of the most severe impacts of the Project given its scale, duration and setting. They are considered significant effects of the Project.
- It has fundamental concerns about construction compounds being close to dwellings, open space including schools and the effects of the long-term use of parkland and entire areas of other reserves for construction.
- It is not satisfied that realistic alternative options for construction compounds elsewhere in the local area have been considered sufficiently.
- There is capacity for the EPRs to address issues of overlooking, overshadowing and the effects of lighting in connection with Project design and operation.

## **5.8 Impacts on identity**

Submissions offered an outpouring of support for two local features– the remnant River Red Gum at the Caltex Service Station on Bridge Road and Bulleen Art and Garden which are shown in Figures 26 and 27. A substantial number of submitters sought a recommendation that these features be retained as an integral part of the Project.



**Figure 26 River Red Gum on Bridge<sup>292</sup>  
Street, Bulleen**



**Figure 27 Bulleen Art and Garden<sup>293</sup>**

The IAC has considered these values, whether it is reasonable and feasible to maintain these features if the Project proceeds and what priority should be given to their retention.

### 5.8.1 River Red Gum

#### (i) Evidence and submissions

A mature remnant river red gum is located at the edge of the Caltex service station as shown above.

The tree has been assessed by Mr Galbraith, Arborist, Robert Galbraith & Associates as being in good health and structural integrity. Its precise age is unknown, but Mr Galbraith used best available data to estimate that it was approximately 400 years old or more.<sup>294</sup> The tree was regarded by Mr Galbraith as too large and old to be considered for viable transplanting.

He recommended a tree protection zone of:

- 15 metre radius from centre of trunk
- a 20-metre radial root distance from the trunk centre free of site disturbance at first instance.
- a 5-metre depth clearance would most likely be adequate.

Some long-term residents spoke of their successful efforts to avoid its destruction on multiple occasions. Others referred to its significant 'sister tree', a scar tree called Yingabeal in the Heide MOMA parklands. However, Mr Howell-Meurs gave evidence that, unlike Yingabeal, the River Red Gum at the Caltex site had been inspected by Traditional Owners and not identified as a culturally modified tree. Likewise, evidence by ecology experts did

<sup>292</sup> Tabled document 224f, slide 6.

<sup>293</sup> Photo IAC Member.

<sup>294</sup> Document 29d. This generally aligned with Appendix B to Technical Note 24 prepared on behalf of the Proponent.

not identify any high habitat or ecological values, influenced by its scattered tree characterisation and highly modified setting although they recommended its retention.

Nevertheless, many submitters referred to the contribution this tree makes to the local identity; being a proud survivor and a reminder of the pre-European contact landscape. One explained how the proposal to remove it “*touched a nerve*”.<sup>295</sup>

The National Trust listed the tree on its Register of Significant Trees in the 1980s as a tree of regional significance and it was voted by the public as Victorian Tree of the Year in 2019. It opposed its removal and advocated for all efforts to be made to develop a design and construction methodology for the interchange that would enable its retention.<sup>296</sup>

The Proponent proposed an EPR and a place specific guideline in the UDS that would require “efforts to be demonstrated” to maintain this tree. However, it issued Technical Note 24 to explain a wide range of alternative road designs considered in an attempt to enable retention of the tree which were unsuccessful.<sup>297</sup> The Proponent indicated through this document that the Manningham interchange ramp gradients would impact the tree’s root zone to the extent it would not remain viable.

If the tree could not be retained, Mr Galbraith, Ms Gray, Mr Howell-Meurs and the National Trust suggested alternative options (regarded by Mr Galbraith as a “*much lesser consolation*”) such as planting a memorial tree grown from cuttings and possibly dedicating its timber to community use and commemoration.

## **(ii) Discussion**

There are many features that combine to provide a sense of community. A few key features provide a true sense of local identity.

The IAC finds that the River Red Gum is one of these. The Project would potentially put this natural feature at risk.

As indicated throughout this report, there are many competing objectives to be achieved for this Project, with road functionality being but one (albeit significant) element. As demonstrated in Technical Note 24, it would be very challenging to give adequate priority to its retention through wording in the UDS or EPRs as currently proposed.

In line with submissions made on behalf of the Councils, the IAC is not persuaded that all practical efforts have been made to retain the River Red Gum or that the traffic engineering imperatives would outweigh its protection.<sup>298</sup>

In the final design for this important interchange, the IAC considers it is vital for the Proponent to make every effort possible to retain this tree given its immense social

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<sup>295</sup> Submitter 375.

<sup>296</sup> Submission 340.

<sup>297</sup> Document 58.

<sup>298</sup> Elsewhere the IAC discusses further work needed on Business Impacts and interchange design for the Manningham Road/Bulleen Road area.

significance. It was implicit in many submissions from community members that if their lives and environments were going to be so affected by the Project, at least the tree they regard as a local icon and landmark should be protected.

Submitters were also generally realistic, that the tree is already located within a harsh urban environment. They seemed to accept that the Project may result in its retention at the centre of a key interchange rather than within a parkland environment. In the IAC's opinion, the fact that this was acknowledged makes its retention more realistic as an adjunct to the Project.

## **5.8.2 Bulleen Art and Garden**

### **(i) Evidence and submissions**

This local business is addressed in detail in Chapter 4 (Business). Submitters spoke of BAAG unique approach to environmental sustainability and its commitment to supporting local artists. Valued aspects included staff dedication, innovative product range and diverse teaching program. It was considered a 'business with heart'. For many, this was supplemented by the treed setting close to the Yarra River.

Mr Barlow confirmed that BAAG is listed as a place of cultural significance in the Draft Yarra River Bulleen Precinct Land Use Framework Plan. Even the vast number of submissions speaking of their passion for this business and seeking its retention is a testament to its social significance.

Sustainable Gardening Australia is another integrated component of BAAG, hosted at its premises and holding aligned values. It offered strong support for the retention of the business and the opportunities it provides. Alternatively, it put forward a proposal for the Proponent to facilitate a Sustainability Centre in the region to establish a positive legacy.

### **(ii) Discussion**

BAAG is a local institution that brings people together for a positive common cause, giving it high social value. The facility benefits from a lease of land in the Public Conservation and Resource Zone and that this clearly ties the use to "*sustainable living and natural world education and experiences, provision of plants, products, bulk materials and services for gardeners, art gallery and community resource*".<sup>299</sup> This is another feature that makes the business unique by comparison to conventional business operations.

Given its social value, the IAC considers it is important for the Proponent to offer every opportunity for this local business to continue operating.

Options to avoid or minimise impacts should be explored fully in the first instance. The Reference Design suggests that key infrastructure works can avoid the site altogether. The Proponent could also investigate the potential for its relocation to part of the Greenery

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<sup>299</sup> Document 304a.



Garden Centre site opposite (or an alternative suitable location) even on a temporary basis during construction, so it can retain key parts of its operations and its local role.

### **5.8.3 Findings**

The IAC finds:

- The River Red Gum and BAAG are both notable assets of high social significance that stand to be removed as a result of the Project.
- Further efforts are required to retain these assets.

## **5.9 Land acquisition**

### **5.9.1 Submissions and evidence**

The Proponent emphasised that its approach to the Project had been to minimise the need for residential and business acquisition wherever possible in recognition of the significant effects that this would have on residents and business holders.

The EES anticipates potential acquisition of up to 36 residential properties and displacement of 96 businesses<sup>300</sup>. Mr Weston explained that a desire to minimise compulsory acquisition results in positive and negative consequences.

The impacts of commercial acquisition have been addressed in Chapter 4 (Business). However, there are clear social impacts that flow from such acquisition. The owner of Mini Maestros, a business operating from the BIP, explained that the location of a person's workplace is a critical determinant of how they order their lives, such that there are broader social effects of even commercial acquisition. This was also emphasised in many submissions which referred to the strengths of the existing 'community' of businesses in that Precinct.

The EES rated the social impacts of residential acquisition as 'high' to 'medium' (risks SO01 and SO02 respectively), with the mitigated risks as 'medium' to 'low'. It appears that this took account of efforts to be required of the Proponent to assist in relocation, as well as compensation available.

Submissions from residents likely to be affected were heartfelt. Some expressed great concern about the need and ability to move, especially for older residents and those with children who attend school in the area. Others spoke of the anguish that would be caused when some homes in a street with close community connections would be acquired, but not others. One submitter was concerned about the proposed acquisition of half of a townhouse complex, leaving the remainder without proper access, shared facilities or amenity.<sup>301</sup> Another spoke of the Project boundary running mid-way through their swimming pool.<sup>302</sup>

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<sup>300</sup> Six between the M80 Ring Road and the proposed northern portal, four at the Eastern Freeway interchange and the remainder in the Bulleen Industrial Precinct.

<sup>301</sup> Submitter 21.

<sup>302</sup> the Proponent suggested at the Hearing that this was likely to be corrected to exclude the property.

An ongoing concern was the stress and anxiety associated with not knowing whether a particular property would ultimately be acquired. This was exacerbated for families with special needs or vulnerability as well as those who would need to make arrangements for alternative schooling for children.

Other submitters pointed to potentially unsustainable amenity impacts on properties that are not proposed to be acquired but are close to long term construction compounds or would be faced with radically altered physical environments post-construction. Many of them urged the IAC to recommend that a voluntary purchase scheme be offered to those likely to be most affected. They pointed to such schemes being offered for other recent State infrastructure projects such as Level Crossing Removals.

The Proponent neither supported nor opposed this proposal.

### **5.9.2 Discussion**

Compulsory acquisition of residential properties can be expected to take a high toll on those directly affected, with flow on effects to social networks nearby. The IAC considers that the severity of this impact is likely to be higher than 'medium' as identified in the EES, although over time, this will decrease if the Proponent offers sensitive, timely and genuine support for those affected to relocate.

The compulsory acquisition of commercial properties and current state of uncertainty is another by-product of the use of a Reference Design, where properties required for Project infrastructure cannot be identified with enough certainty, or the acquisition occur, at the public consultation and assessment stage.

Residential properties known to be required should be acquired as soon as possible if the owners are agreeable to reduce associated stress and uncertainty.

A further degree of certainty may be delivered by the early preparation of an Urban Design Framework Plan or similar for key interchanges and activity centres, as recommended by the IAC in Chapter 7.3 (Visual impact, urban design and landscape), as well as by the application of key urban design priorities from the outset to minimise the Project's land take.

#### **Voluntary purchase scheme**

There are good reasons why the Proponent has sought to minimise *compulsory* acquisition of residential properties, recognising its extensive impacts.

However, there are also substantial impacts likely to be experienced by numerous residential properties along the Project alignment, some of which could be considered unreasonable or unsustainable. This leads the IAC to recommend that a voluntary purchase scheme be developed as part of the Project.

There are multiple ways such a purchase scheme could be crafted, but parties at the Hearing did not suggest criteria for qualifying. These might refer to distance from the Project boundary or identified works, resident susceptibility to impacts, duration and nature of nearby construction works, whether noise standards are likely to be exceeded or the like. Such an offer could conceivably be limited in time.

Regardless of how it is to be framed, the State should make it a priority to offer a voluntary purchase scheme as soon as possible, since the effects of the proposal are already affecting landowners and occupiers negatively. This would represent an important mechanism to minimise detrimental social impacts on local communities.

### **5.9.3 Findings**

The IAC finds:

- The Proponent has sought to minimise the extent of residential property acquisition for the Project. Notwithstanding, other properties along the Project alignment are likely to experience unacceptable levels of amenity (even once mitigated) sufficient to warrant consideration of a voluntary acquisition scheme.

### **5.10 Consolidated findings**

The IAC finds:

- The social effects of the proposal are multi-faceted. Many other aspects of the Project also generate notable social impacts such as commercial property acquisition. Such impacts have generally been under-estimated by the EES, especially in so far as impacts on public open space and construction impacts are concerned.
- While the EPRs can be expected to go some way to mitigating social impacts including amenity impacts, the exhibited EES does not provide enough, up front commitments to manage all social impacts of the Project in an enduring and fair way.
- It is incumbent on the Project to deliver at least like-for-like replacement open space with suitable functionality for all users.

### **5.11 Recommendations**

The IAC has made a number of recommendations for improvements to EPRs, and a voluntary acquisition scheme to improve the social outcomes of the Project.



## 6 Biodiversity

The following chapters of the EES and technical reports are relevant to ecology:

- EES Chapter 25 – Ecology
- Technical Report Q – Ecology including Appendices:
  - Native Vegetation Removal Report (Appendix J)
  - Salvage and Translocation Plan for the Matted Flax-lily and the Arching Flax-lily (Appendix K)
  - Ecological Offsetting Strategy (Appendix L)

Since exhibition of the EES, all these documents were updated and tabled at the Hearing. The Proponent commissioned surveys of Studley Park Gums within and outside the Project boundary, and a Studley Park Gum Management Framework has been prepared.<sup>303</sup> A revised Groundwater Dependent Ecosystems (GDE) Assessment was tabled.<sup>304</sup>

The following chapters of the EES and technical reports are relevant to Arboriculture and tree canopy:

- EES Chapter 15 – Arboriculture
- Technical Report G – Arboriculture.

EES evaluation objectives provide a framework to guide an integrated assessment of environmental effects in accordance with the Ministerial Guidelines, and for evaluating the overall implications of the Project.

The main EES evaluation objective relevant to ecology and tree canopy is at section 4.6 of the Scoping Requirements:

To avoid or minimise adverse effects on vegetation (including remnant, planted and regenerated) listed rare and threatened species and ecological communities, habitat for listed threatened species, listed migratory species and other protected flora and fauna, and address offset requirements for residual environmental effects, consistent with relevant State policies.

Other relevant evaluation objectives are:

- Landscape, visual and recreational values (4.5 of the Scoping requirements):
 

To minimise adverse effects on landscape values, visual amenity, recreational and open space values and to maximise the enhancement of these values where opportunities exist.
- Catchment Values (4.10 of the Scoping requirements):
 

To avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments.

The parties called the following expert evidence relevant to ecology, habitat and arboriculture (including tree canopy):

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<sup>303</sup> Accompanying Technical Note 36.

<sup>304</sup> Technical Note 35.

- Brett Lane, Patrick Maiden and Cameron Miller on behalf of the Proponent on ecology
- Meg Caffin on behalf of the Proponent on tree canopy
- Dr Graeme Lorimer on behalf of the BBW Councils on ecology
- Steve Mueck on behalf of Manningham on ecology
- Professor Sarah Bekessy on behalf of the Yarra Riverkeeper Association on biodiversity and urban ecology
- Rob Galbraith on behalf of Manningham on arboriculture.

A conclave report was prepared following the expert conclave meeting.<sup>305</sup> Experts nominated whether they were a part of the discussion under each of the headings, as the ecological experts covered certain specialist areas.

The following EPRs are relevant to ecology, arboriculture and tree canopy:

- The arboriculture suite of EPRs
  - AR1 - Develop and implement a Tree Removal Plan
  - AR2 - Implement a Tree Protection Plan(s) to protect trees to be retained
  - AR3 - Implement a Tree Canopy Replacement Plan
- The Fauna and Flora suite of EPRs
- The Groundwater suite of EPRs
- LP1 – Minimise land use impacts
- LV1 – Design to be in accordance with the Urban Design Strategy
- LV2 - Minimise landscape impacts during construction
- LV3 - Minimise construction lighting impacts
- LV4 - Minimise operation lighting impacts
- The Surface Water suite of EPRs.

## 6.1 Key issues

The Proponent addressed the following issues in relation to ecology and tree canopy as raised by submitters or expert witnesses:

- whether there is enough information before the IAC to assess the ecological impacts of the Reference Design
- whether sufficient measures have been taken to avoid and minimise ecological impacts
- whether proposed mitigation measures, in particular in respect of the Studley Park Gum and the Matted Flax-lily, are acceptable
- whether the proposed offsets are acceptable and achievable
- whether the EPRs require more prescriptive requirements, particularly in relation to groundwater dependent ecosystems and tree canopy.<sup>306</sup>

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<sup>305</sup> Document 128, dated 31 July 2019.

<sup>306</sup> Document 153, paragraph 12.

Many of the ecology, habitat and tree canopy impacts are associated with the Project's construction phase.

Councils raised concerns about the impacts to the ecological values of the waterway corridors through which the Project passes, the Bolin Bolin Billabong, GDE, the Koonung Creek corridor and Simpson Barracks. The loss of amenity trees and tree canopy is also a key issue raised by Councils, along with the way the proposed trees lost was calculated.

Other submissions (approximately 90), including Nillumbik, Warringal Conservation Society, Friends of Banyule and the Yarra Riverkeeper Association raised issues regarding removal of native vegetation (particularly approximately 10 hectares of Plains Grassy Woodland Ecological Vegetation Class (EVC) which includes a number of Studley Park Gums at Simpson Army Barracks), habitat fragmentation, impacts on GDEs, impacts on threatened flora and fauna, availability of offsets and removal of the River Red Gum (Caltex Tree).

Many submitters emphasised that road engineering needs to consider ecological matters in its design more explicitly and sensitively. They submitted that there had been insufficient consideration of alternatives for parts of the Project that would have less environmental impacts.

## 6.2 Evidence and submissions

### (i) Ecology and native vegetation removal

The EES predicts up to 52.109 hectares of native vegetation from 14 different EVCs, 92 large trees, 55 scattered trees and 115 small scattered trees are expected to be directly impacted by the Project. There will also be 32 large trees outside the Project boundary that may be affected by groundwater drawdown associated with the northern portal construction and operation. Up to ten hectares (9.978 hectares) of significant native vegetation is within the Simpson Army Barracks (Commonwealth land), including Plains Grassy Woodland which Mr Lane found constitutes the largest area of native vegetation in the Project; the second highest condition score (58/100); and the highest habitat hectare value (5.787 hectares).<sup>307</sup> In response to questioning, Mr Lane (for the Proponent) stated that the removal of this vegetation would be a "significant impact" of the Project. Mr Mueck, for Manningham, agreed.

The assessment of ecological impacts undertaken in the EES assumes the removal of all native vegetation and the removal of or potential impact to all amenity trees within the Project boundary. The assessment included large trees just outside the Project boundary where at least 10 per cent of the tree protection zone was within the Project boundary.<sup>[SEP]</sup>

The EES states that the direct and indirect loss of vegetation and habitat are expected to result in the largest impacts of the Project.<sup>308</sup>

<sup>307</sup> Document 24b, page 9.

<sup>308</sup> Technical Appendix Q, page viii.

The Proponent's primary position on ecology and habitat is that the Project alignment traverses an existing highly modified urban landscape. It stated that the quality of native vegetation within the Project boundary is generally moderate to poor, with ecological values largely reflecting the long history of urban land use in the surrounding landscape.<sup>309</sup>

The EES and Proponent's submissions provide that the Project has avoided many ecological impacts, including the removal of native vegetation, by tunnelling under the Yarra River floodplain and identifying designated areas as 'no go zones' including the Yarra River, Banyule Flats, Warringal Parklands and the Bolin Bolin Billabong.

The Department of Environment, Land, Water and Planning (DELWP) explained that likely impacts on habitats and most species were identified and addressed in the EES, and it submitted that some species require further assessment. More specifically, it considered that the EES did not provide enough detail in describing the extent of impacts to Matted Flax-lily, Studley Park Gum, Arching Flax-lily and River Swamp Wallaby Grass.<sup>310</sup>

The ecological experts agreed that the EES comprehensively identified and accurately described existing native vegetation and threatened species and communities of the Project area, and that the impacts of the Project had been thoroughly and comprehensively assessed and identified. DELWP was satisfied with the methodology used to assess and calculate EVCs and regarded it as consistent with the *Vegetation Quality Assessment Manual* (DSE, 2004) and the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017).

However, Mr Miller acknowledged in cross examination by Mr Watters (for Manningham) that there had been no assessment of further native vegetation removal outside of the Project boundary of the Simpson Barracks land to include replacement or amended fire or security breaks that may be required.

The joint BBW and Manningham Councils submitted that the Project has not provided adequate assessment to determine the environmental effects, particularly in relation to GDEs, and that the current Reference Design will have significant environmental effects on waterways, native vegetation removal, threatened species (particularly the Matted Flax-lily) and canopy or amenity tree plantings.

The Councils jointly submitted it was wholly unsatisfactory that any proposal of the scale of the Project would adopt as its starting point the removal of all vegetation within the Project boundary, with the stated intention that it would only retain vegetation to the extent that it would not interfere with the delivery of the Project.<sup>311</sup>

The Yarra Riverkeeper Association submitted that there are unacceptable risks to threatened species and to the urban forest, being especially concerned with the removal of 43 hectares of endangered native vegetation.<sup>312</sup>

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<sup>309</sup> Document 153, paragraph 17.

<sup>310</sup> Document 93, paragraphs 1.1 – 1.9.

<sup>311</sup> Document 374a paragraph 251, page 79.

<sup>312</sup> Document 32, page 5.



Nillumbik submitted concerns about the amount of vegetation loss, impacts to the Plenty River catchment and risks to flora and fauna species within the Project boundary and that migrate through it such as the Swift Parrot.

**(ii) Studley Park Gum**

The Studley Park Gum (*Eucalyptus x studleyensis*) is a rare, natural and fertile hybrid of the River Red Gum and Swamp Gum. The Simpson Barracks supports the largest and most extensive population in Victoria. Mr Lane, in evidence for the Proponent noted that up to 43 Studley Park Gums will be removed and up to three indirectly impacted via potential groundwater drawdown. The experts agreed that this may amount to more trees, depending on the groundwater drawdown that actually occurs. The ecologists agreed in the conclave that some additional Studley Park Gums adjacent to the Project boundary may be considered lost based on impacts to their tree protection zones.

The Studley Park Gum is not listed as threatened under the *Flora and Fauna Guarantee Act 1988* (FFG Act) nor is it listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act (Cth)). However, it is listed as endangered on DELWPs Advisory list of rare or threatened plants in Victoria (2014) and was included in the assessment of native vegetation in the EES.

The Proponent put forward a Studley Park Gum Management Framework that provides a broad outline of the actions the Project proposes as a compensation and mitigation measure. It proposes to establish a minimum of 98 Studley Park Gums to an appropriate recipient site, identifying 11 potential sites. This goal is based on a replacement ratio of two translocated Studley Park Gums established for each individual impacted by the Project.<sup>313</sup>

Mr Graeme Peake, for BBW Councils, asked Mr Lane in cross examination whether he thought the Studley Park Gum Management Framework would achieve its stated objectives. Mr Lane replied that it is impossible to determine since it is uncertain what the outcome will be. Mr Lane also acknowledged in response to questions from Mr Peake that the assessment of the Studley Park Gums in the EES was incomplete.

DELWP advised the IAC that:

The project will potentially eliminate most if not all of the last surviving habitat where active recruitment is still observed.<sup>314</sup>

Mr Goddard a submitter who is also an ecologist, stated:

In truth, we have very little understanding of how the small population of Studley Park Gum is maintained in the wild, let alone at Simpson Barracks. To suggest that a self-sustaining population of Studley Park Gum could be created elsewhere is somewhat fanciful and unrealistic.<sup>315</sup>

<sup>313</sup> Document 139, page 5.

<sup>314</sup> Document 93, paragraph 1.6.

<sup>315</sup> Document 142, page 1. Mr Goddard was Submitter 518.

The Warringal Conservation Society submitted that the Studley Park Gum Management Framework fails to adequately mitigate the loss of Studley Park Gum because it does not commit to delivering a secure and self-sustaining population capable of surviving in the long term.

Mr Miller agreed with Mr Watters (for Manningham) that there is a risk that the Project is approved and that the Translocation Plan for Studley Park Gums may fail to be delivered.

### **(iii) Matted Flax-lily**

The Matted Flax-lily (*Dianella amoena*) is listed as threatened under the FFG Act and endangered under the EPBC Act (Cth). The Project proposes to remove approximately one third of the known Victorian population of the Matted Flax-lily from Simpson Barracks (Commonwealth land). The biodiversity expert conclave described Simpson Barracks as providing critical habitat for the species.

The Project proposes to salvage and translocate approximately 95 individual Matted Flax-lily plants mostly from the Simpson Barracks. Mr Miller, for the Proponent, considered that the salvage and translocation of this species would be an appropriate mitigation action that would prevent significant residual impacts, having been successfully delivered for a number of major infrastructure projects over the last decade.<sup>316</sup>

It is yet to be determined if offsets would be required for this species under the EPBC Act. Although this is a matter for the Commonwealth under the EPBC Act process, Mr Miller and Mr Mueck (for Manningham) each indicated that an offset could require around 30 hectares.<sup>317</sup>

Mr Mueck considered that the potential impacts to the Matted Flax-lily were understated. His evidence was that the proposed use of translocation to mitigate all significant impacts to this species was inconsistent with the Environmental Offsets Policy in the EPBC Act. If such offsets were required for the Matted Flax-lily, he considered “*this will pose a significant difficulty for the project*”.<sup>318</sup> His evidence also suggested that there is no documented evidence of successful translocation of Matted Flax-lily that has produced a self-sustaining population. The ecologists agreed in the conclave that there is no evidence of successful reproduction in translocated populations of Matted Flax-lily. Mr Lane conceded in response to cross examination by Mr Peake that translocation as a mitigation is generally a last resort.

DELWP did not support most of the proposed translocation sites in the original draft plan put forward by the Proponent due to their lack of suitability (size and soil types) and DELWP would also need to review the most current translocation plan. DELWP also cautioned that costs and ongoing management involved in translocation should not be underestimated and

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<sup>316</sup> Document 24c, pages 15-16.

<sup>317</sup> Document 374a, paragraph 262, page 82.

<sup>318</sup> Document 29e, page 8.

likelihood of translocation success should not be overstated given the current low success rate of other Matted Flax-lily translocations in Melbourne.<sup>319</sup>

In reference to the Matted Flax-lily Translocation Plan, Mr Goddard stated:

The recipient sites are too small (much smaller than the impact site at Simpson Barracks) and would be subject to insurmountable management issues...

Mr Cameron Miller, in his expert evidence, suggests that there have been a number of successful examples of Matted Flax-lily translocations:

- He provides South Morang and Mernda Rail Extensions as an example. I am yet to see any evidence, in the form of monitoring results or reports, that this translocation has been a success.
- He provides Melbourne Wholesale Market as another example. This has been anything but a success and will probably fail to meet survivorship targets, despite enormous resources going into this translocation.

The reality is that there is currently no example of a Matted Flax-lily translocation of this scale resulting in the establishment of a self-sustaining population of the species. I have no confidence that the proposed translocation plan for the North East Link will succeed.

Ultimately, more than 10 hectares of habitat, critical to the long-term survival of this endangered species, will be removed by the project, with or without a successful translocation plan.<sup>320</sup>

The Warrigal Conservation Society submitted that the translocation of the Matted Flax-lily is a relatively new approach and it is questionable whether it could recreate viable populations in the long term.

The joint Councils' submission was that Simpson Barracks should be designated as a "no-go zone" due the importance of the site in providing Matted Flax-lily habitat, as well as for other environmental reasons. They submitted that the retention and design of the Lower Plenty Road interchange was given precedence over the environmental significance of Simpson Barracks on the basis of project functionality and requisite road design standards.<sup>321</sup>

In cross examination by Mr Peake, Mr Lane agreed that the Simpson Barracks is a significant site for Studley Park Gum and the Matted Flax-lily and their removal should be avoided where it can be. He also agreed that the EES objective of 'avoid and minimise' had not been completely met.

### **6.2.2 39 Bridge Street, Bulleen - River Red Gum**

The River Red Gum on the corner of Bridge Street and Manningham Road is proposed to be removed as part of the Reference Design. The tree is protected by a Heritage Overlay

<sup>319</sup> Document 93, paragraph 1.2.

<sup>320</sup> Document 142, pages 1-2.

<sup>321</sup> Notwithstanding the joint Councils' primary position, their submission also suggested the use of Marigold Reserve as an additional potential location translocation site for the Matted Flax-lily. Mr Lane agreed that this site could be further investigated.

(HO24) under the Manningham Planning Scheme and is considered of social value to the community.

Around 80 submissions requested the 'Caltex' River Red Gum be retained, including from Manningham, the National Trust, Wurundjeri Corporation and Birrarung Council.

Mr Galbraith, for Manningham, explained that the tree is a large old example of the pre-European dominant tree species of the area and that such trees would have been far more widespread in the local vicinity prior to European settlement.

Mr Lane's evidence was that the *"tree is not of great ecological consequence as, although as an old grown eucalypt it has potential to support fauna, it is now isolated from most sources of indigenous fauna along the Yarra River corridor"*.<sup>322</sup>

Mr Galbraith found the tree is in good health and in the order of 400 plus years old. He considered:

Overall I would suggest this tree, if subjected to minor maintenance and protected from site disturbance, has a long safe useful life expectancy of well over a hundred years.<sup>323</sup>

The Proponent provided Technical Note 24 that explained:

In considering the standards of AS 4970-2009, the age of the Tree and its potential sensitivity to modification of its growing conditions, the following criteria are recommended to provide a reasonable level of confidence that the Tree could be retained as a viable specimen in the landscape:

- (a) Works should not encroach within the 15 metre radius TPZ from the centre of the trunk;
- (b) If encroachment is unavoidable it should not exceed more than 10% of the TPZ, or be closer than 10 metres on one side of the tree;
- (c) Where tunnelling or subsurface activities are required, a minimum depth of 10 metres must be maintained for the Tree to have a reasonable chance of survival during and after construction of the project.<sup>324</sup>

By contrast, Mr Galbraith suggested that a Tree Protection Zone of twenty metres be provided to retain the tree at first instance.<sup>325</sup> He concluded that the tree is too large and old to be considered for transplantation.

The Proponent submitted that it would look favourably at tenders from contractors bidding for the main works package in 2020 that could include a design and construction solution for the Manningham interchange that retains the tree while maintaining function, program and cost imperatives.<sup>326</sup>

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<sup>322</sup> Document 24b, page 3.

<sup>323</sup> Document 29d, page 4.

<sup>324</sup> Document 58, page 2.

<sup>325</sup> Document 29d, page 19.

<sup>326</sup> Document 58, page 5.

### 6.2.3 Native vegetation removal outside the Project boundary

BBW Councils advised the IAC that the EES fails to address native vegetation removal required for the re-establishment of the Boroondara Tennis Centre on an alternative site, such as in Bulleen Park. Dr Lorimer also queried the extent of native vegetation removal proposed for ancillary works.

The ecologists agreed in the conclave<sup>327</sup> that the removal of native vegetation consequential upon changes to nearby uses (for example golf course reconfiguration) would require detailed assessment and approvals including addressing avoid, minimise and offset requirements of the DELWP Guidelines.

The Proponent responded that if native vegetation removal was triggered by other related projects, it would be identified as part of detailed design and addressed at that point.

### 6.2.4 Groundwater dependent ecosystems

Areas adjacent to the Project boundary have the potential to be impacted by groundwater changes resulting from the Reference Design. In particular, in the vicinity of the proposed northern portal which includes the Simpson Barracks and the upper reaches of the Banyule Creek, the vicinity of the southern portal including the Yarra River flats, and the tunnel section between the portals including Banyule Flats.

GDEs were assessed in the EES which indicated that some large trees outside of the Project boundary (River Red Gums and Studley Park Gums) are likely to be accessing groundwater and will have a moderate to high likelihood of being negatively impacted by groundwater drawdown during construction.<sup>328</sup> Mr Lane considered that the native vegetation at the Simpson Barracks is an area most vulnerable to groundwater drawdown. He relied upon the importance of EPRs GW2 and FF6 in developing appropriate groundwater monitoring and management plans to respond to any changes in groundwater.<sup>329</sup>

However, since exhibition of the EES, an additional 12 months' worth of groundwater monitoring data became available.<sup>330</sup> The Proponent submitted that this data confirmed the validity of the model used for the purposes of assessing groundwater impacts in the EES. The additional data enabled the preparation of a revised Groundwater Dependent Ecosystems Assessment, which considered potential impacts on large trees and GDEs outside the Project boundary, as well as revisions to data contained within the EES.<sup>331</sup>

The Bolin Bolin Billabong and other billabongs nearby to the Project will be impacted most by changes to groundwater. The modelled drawdown prepared in respect of the Reference Design (the EES states a drawdown of between 0.1 and 0.5 metres) suggests that impacts from the Project may extend into (or at least close to) the easternmost portion of the Bolin

<sup>327</sup> Document 128, page 1.

<sup>328</sup> Technical Appendix Q, page vii.

<sup>329</sup> Document 24b page 11.

<sup>330</sup> Technical Note 26.

<sup>331</sup> Document 103.

Bolin Billabong (but would be unlikely to extend further west into other parts of the billabong).

DELWP Biodiversity noted that the EES expected there to be a groundwater drawdown of 0.1 - 0.5 metres at Bolin Bolin Billabong and that the area was expected to be affected by a 0.5 reduction in water levels. DELWP submitted this reduction would reduce aquatic habitat and should be included in the Native Vegetation Removal Report.

Mr Middlemis, called by the Proponent, explained that the anticipated drawdown of between 0.1 – 0.5 metres should be considered relatively “small” and within seasonal range levels.<sup>332</sup> The Proponent submitted that:

- a drawdown of this extent would not compromise the hydrological or hydrogeological systems of the Billabong or result in the permanent pool drying out<sup>333</sup>
- the EES relies upon a groundwater and surface water monitoring program required to establish baseline conditions and assess impacts through EPRs GW2 and SW4.<sup>334</sup>

EPR FF6 would also require a Groundwater Dependent Ecosystem Monitoring and Management Plan.

The groundwater modelling component is discussed in more depth in Chapter 10.2. In relation to ecology, Councils submitted that the GDEs impacts are unknown as the model used was not ‘fit for purpose’, being biased towards parameters derived from the bedrock, notwithstanding that sensitive receptors are mainly located in alluvium floodplain areas of the Project boundary. Dr Lorimer’s evidence was that the model used for groundwater has errors and could have consequences for important rare plant species located in wetlands. He also stated that any groundwater drawdown of greater than two metres (which he regarded as possible but unconfirmed) would have a severe impact on trees.

The EES suggests that a supplementary watering regime could be implemented to top up the billabong with inputs from other sources to mitigate the risk of loss of groundwater through drawdown at Bolin Bolin Billabong. It notes that Melbourne Water is actively managing the hydrological regime of Bolin Bolin Billabong at present.<sup>335</sup> Melbourne Water submitted that there are close connections between the groundwater and surface water flows that supports the high ecological, cultural and liveability value s along the Yarra corridor and associated wetlands (billabongs). Melbourne Water submit:

The factor that overwhelmingly controls the ecological structure and function of a billabong is their hydrology.<sup>336</sup>

Melbourne Water provided detail in its submission about the works they are undertaking to enhance the Bolin Bolin Billabong, including reinstating natural watering cycles. They also

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<sup>332</sup> Document 24k, page 10.

<sup>333</sup> Document 434, page 333.

<sup>334</sup> EES Volume 4 of 4, Chapter 25, page 25-43.

<sup>335</sup> EES Volume 4 of 4, Chapter 25, page 25-51.

<sup>336</sup> Melbourne Water submission 800, page 9

note that the Proponent has the potential to impact on the groundwater levels at the Billabong and that this impact is not well understood at this point in time.<sup>337</sup> Melbourne Water requested that the EPRs include baseline monitoring and be to the satisfaction of Melbourne Water.

Mr French<sup>338</sup> stated that the Bolin Bolin Billabong is the last remaining relatively unchanged billabong within the lower reach of the Yarra River and he noted the changes that have occurred over the past 15 years to its wet and dry cycles. He stated that this led to Parks Victoria (his former employer) to manage the water flows into the Bolin Bolin Billabong, although he cautions that this approach involves ongoing maintenance costs. He advised the IAC that extending the bored tunnel past the Bolin Bolin Billabong groundwater would minimise impacts to this sensitive GDE.<sup>339</sup>

### 6.2.5 Terrestrial fauna

The EES observes that a total of 402 species of terrestrial fauna are recorded or predicted to occur within the area. Most of these are birds (305), with smaller numbers of mammals (53), reptiles (28), amphibians (14) and invertebrates (2). Of these, 74 are listed as threatened under the FFG Act and/or the EPBC Act (Cth).<sup>340</sup> The EES also suggests that most of these species are unlikely to occur within the Project boundary, however it notes that 23 threatened or migratory species have a moderate to high likelihood of occurrence within the Project boundary (mostly within the Banyule Flats and Yarra Flats area) including the Powerful Owl, Common bent-wing bat, Swift Parrot, Australasian Bittern, Australian Painted Snipe, Latham's Snipe and Grey-headed Flying-fox.<sup>341</sup>

#### (i) Swift Parrot

The Swift Parrot is listed as critically endangered under the EPBC Act (Cth) and as threatened under the FFG Act. The Proponent and Council experts agreed that most of the trees likely to be affected by the Project are not the usual preferred feed species for Swift Parrot and the frequency of records of this species within the Project area is low.

The Warringal Conservation Society submitted that the EES described some works to occur at Macleod Railway Station which could impact on known critically endangered Swift Parrot habitat and requested that these trees be designated as a further Project "no-go zone". The EES confirmed that the trees at Macleod Railway Station are considered of high habitat value for Swift Parrots and that some birds will inhabit the Project boundary and that minor impacts (such as pruning of these trees) may be necessary to allow safe access to the signal boxes.<sup>342</sup> Mr Lane agreed that these trees should be protected if possible.

<sup>337</sup> Melbourne Water submission 800, page 10

<sup>338</sup> Submitter 179.

<sup>339</sup> Document SV22, page 1. In making this suggestion, he referred to the extent of interconnectivity between geology and associated water regimes on both sides of Bulleen Road.

<sup>340</sup> Technical Appendix Q, page v.

<sup>341</sup> EES Volume 4 of 4, Chapter 25, page 25-12.

<sup>342</sup> EES Volume 4 of 4, Chapter 25, page 25-34.

**(ii) Powerful Owl**

The Powerful Owl is listed as threatened under the FFG Act and it is known to occur within the Banyule Flats. The WCS suggested that the EES does not provide sufficient information to assess whether impacts from construction and operation of the Project will impact the species.

In cross examination by Mr Lindsay for the Yarra Riverkeeper Association, Mr Lane acknowledged that the Powerful Owl would also use habitat along the Koonung Creek corridor and he also agreed that this is an important ecological corridor for species such as the Powerful Owl. Mr Lane accepted that widening the Eastern Freeway will certainly have an adverse impact upon endangered EVCs along this corridor but was not certain whether this would stop Powerful Owls from moving along the corridor.

**(iii) Grey-headed Flying Fox**

Targeted surveys for the Grey-headed Flying fox were not undertaken as part of the EES as their presence was assumed because it is known that they forage across the entire study area.<sup>343</sup>

Wildlife Victoria<sup>344</sup> raised issues regarding the proximity of the Project to the Grey-headed Flying fox camp at Yarra Bend Park and potential impacts of dust, noise and light on the Grey-headed Flying fox camp.

The Project boundary is adjacent to the Grey-headed Flying fox camp at Yarra Bend and the EES indicates that the Grey-headed Flying fox camp at Yarra Bend is designated as a “no-go zone” to minimise impacts to this key site. The Proponent and Council experts agreed that Grey-headed Flying fox are adapted to and reliant on urban tree food sources. They also agreed that the impact on the local population would be limited and adequately compensated by the proposed species offset requirements and the monitoring and management measures proposed in the flora and fauna EPRs.

**(iv) Fauna habitat connectivity**

The EES notes that construction of the Project may result in localised fragmentation of some fauna habitats, reducing the ability of fauna to travel through the landscape and may threaten the viability of some populations.<sup>345</sup>

Mr Lane’s evidence was that the Project would increase fragmentation of habitat in areas where surface works remove existing native vegetation and habitat corridors. However, he noted that the impacts on species and populations currently using the urban areas and parklands are unlikely to change to the point where their survival would be at risk.

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<sup>343</sup> EES Volume 4 of 4, Chapter 25, page 25-14.

<sup>344</sup> Submission 46

<sup>345</sup> EES Volume 4 of 4, Chapter 25, page 25-35.



Wildlife Victoria are concerned about the loss of habitat and that new habitat of a similar area should be provided as offsets.

DELWP suggested that a Kangaroo Management Plan be required for Simpson Barracks and the M80 intersection sites within EPR FF1 to ensure safety of drivers in the area and to ensure the welfare of kangaroos is not compromised during construction works.<sup>346</sup> The Kangaroo Management Plan should also address the management of the land locked population within the Simpson Barracks that will be contained in a smaller area. Mr Lane agreed that a Kangaroo Management Plan should be required through the EPRs.

### **6.2.6 Aquatic habitats**

The EES states that the inclusion of a tunnel underneath the Yarra River provides considerable protection from direct impacts to the highest value aquatic ecosystem and threatened species habitat within the Project area. Although threatened species such as the Australian Grayling, Australian Mudfish, Macquarie Perch, Murray Cod, Murray River Turtle and the Broad Shelled Turtle may traverse the tributaries of the Yarra River (such as Plenty River and Koonung Creek) the likelihood is considered low.

While impacts to the Yarra River have mostly been avoided by the proposed tunnel underneath the Yarra, the experts considered that the greatest risk to aquatic ecology in the Yarra is from water quality changes that are expected from impacts to tributaries, stormwater runoff from roadways and infrastructure and changes to drainage regimes.

The Proponent called Mr Maiden as the only expert ecologist giving evidence to the IAC. Mr Maiden suggested that the prevention of water quality pollution through surface water design will avoid indirect impacts to the Yarra River.

The Yarra Riverkeeper Association raised concerns about the quality of water runoff into the Koonung Creek.

The Reference Design proposes placing 1.5 kilometres of the Koonung Creek into a barrel drain and proposes placing the northern part of Banyule Creek into a barrel drain. The northern section of the Banyule Creek connects the Banyule Swamp, an important wetland for listed migratory bird species protected under the EPBC Act.

Some submissions raised concerns that surveys were not adequate and submitted that there are threatened fish species in these waterways.

The proponent submitted that where direct impacts on aquatic ecosystems are likely to occur, those ecosystems are already degraded, with limited or no native fish present in areas where waterways will be covered. Mr Maiden's evidence is that although there will be some loss of aquatic habitat, there are no listed threatened fish species recorded within the Banyule Creek and in the areas to be disturbed in the Koonung Creek.

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<sup>346</sup> Document 93.

He does suggest however that avoidance of high intensity noise and vibration construction activities around the Yarra River should be avoided during Australian Grayling critical breeding times. The Friends of Banyule also requested this occur.

Nillumbik stated the EES provides minimal reference to the Plenty River environs. The Shire submits that baseline ecological data be provided and assessed against the relevant EPRs to ensure the Plenty River environs and water quality will be adequately monitored.<sup>347</sup>

The Warringal Conservation Society and Friends of Banyule raised issues regarding the conversion of Banyule Creek and Koonung Creek to covered and/or concrete drains which they submitted could alter the microclimate of those watercourses and reduce surface water for wildlife.

The Warringal Conservation Society contended that it is no longer acceptable practise to exclude light from natural waterways and this should be avoided.<sup>348</sup> The Councils also strongly opposed the barrelling of waterways.

Mr Lane provided comment in his evidence about the impacts of waterway changes, including covering sections of Banyule and Koonung Creeks. He stated that these will reduce fish dispersal however no threatened fish species will be affected as they are generally confined to the Yarra River.

### **6.2.7 Biodiversity offsets**

DELWP provided the following overview of offsets required for the Project:<sup>349</sup>

- 9.384 general habitat units with a minimum strategic biodiversity score of 0.164 within the Port Philip and Western Port Catchment Management Area
- 22.945 species units of habitat for the Grey-headed Flying Fox
- 179 large trees (within the Port Philip and Western Port Catchment Management Area).

The Proponent explained that the Studley Park Gum has been assessed as native vegetation and would be offset in accordance with the Guidelines.

However, as the Proponent suggests, to the extent that required offsets have been calculated to include or exclude certain species habitat, this is a matter for DELWP in accordance with the Guidelines and is not within it or its consultants' control.

However, the BBW and Manningham Councils submitted that Matted Flax-lily offsets have not been calculated and should have been included as part of the EES. As mentioned, a Matted Flax-lily Salvage and Translocation Plan and Studley Park Gum Translocation Plan have been prepared and provided as a mitigation measure. However, Councils and other submitters strongly reject that these should not be considered an 'offset', as distinct from

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<sup>347</sup> Document 175, page 15)

<sup>348</sup> Document 297b, page 9.

<sup>349</sup> Document 93, paragraph 3.4.

mitigation measures. The expert ecologists agreed that these plans would not constitute offsets.

BBW Councils raised an issue regarding an existing VicRoads offset site located on Greensborough Road within Defence land which is proposed to be removed by the Project. The Proponent, in submissions, clarified that all native vegetation to be removed for the Project (except amenity plantings) will be offset in accordance with the Guidelines and in essence, the offset planted as part of the VicRoads footpath works, will need to be re-calculated.

Mr Mueck, for the Councils, suggested that the Incorporated Document (clause 4.8.1) be amended to ensure relevant offsets have been secured prior to construction. Mr Lane agreed.

### **6.3 Discussion**

In terms of whether there is sufficient information before the IAC to assess the ecological impacts of the Reference Design, for the most part, the IAC considers there is sufficient information to assess the effects and also to assess where the uncertainties of the environmental effects are due to lack of information or assessment. The IAC has provided some qualification to this in the sub-chapters Groundwater Dependent Ecosystems and Aquatic habitats below.

#### **6.3.1 Ecology and native vegetation removal**

##### **(i) Native vegetation removal**

The IAC acknowledges the Reference Design avoids many of the ecological impacts on the significant floodplain environments of the Yarra River and Banyule Flats by tunnelling underneath these environs. In addition, key sensitive areas such as the Banyule Flats, Warringal Parklands and the Bolin Bolin Billabong are designated “no-go zones”. This suite of measures is acknowledged as a significant ecological avoidance measure of the Reference Design.

However, there are still other areas with significant ecological values that will be impacted by the Reference Design. Much of this will derive from the scale of the removal of up to 52 hectares of native vegetation across the Project corridor.

In closing, the Proponent emphasised that the land affected by the Project is within established, largely residential suburbs originally developed for agricultural purposes and that it is important to compare the ecological impact of the Project with other major road projects. In making this comparison, the IAC notes that for the recent Mordialloc Bypass which involved a proposed road (Reference Design) predominantly within a road reserve

proposed in an urban context through constructed wetlands, the Minister for Planning stated in his Assessment:<sup>350</sup>

Native vegetation, whether remnant or restored, in an urban landscape, is a rare asset. For much of its length the project traverses or borders the South East Green Wedge, in which the Victorian and local governments have invested significantly. The conservation of biodiversity in the green wedges close to developed areas is an important aspect of this. In contrast to the IAC and in the context of the project's location relative to the green wedge, I consider clearing 12Ha of native vegetation to be significant, warranting very careful examination to ensure that the loss has been minimised to the extent practicable and mitigated to an acceptable level.

The IAC agrees that this approach is important when considering the impacts of the decline in urban native vegetation and planted vegetation.

The IAC does not believe sufficient measures have been taken to avoid and minimise ecological impacts. It acknowledges that the tunnel underneath the Yarra River and Banyule Flats reduces ecological impacts on these areas however this is only one discrete component of the Project.

The IAC agrees with Council that to start with the premise that all native vegetation within the Project boundary is to be removed is not best practice and does not meet the EES evaluation objective *“to avoid or minimise adverse effects on vegetation (including remnant, planted and regenerated) listed rare and threatened species and ecological communities, habitat for listed threatened species, listed migratory species and other protected flora and fauna”* nor does it meet the government's own policy of avoid and minimise in the Guidelines.

#### **(ii) Matted Flax-lily and Studley Park Gum**

The Proponent's and Councils' ecological experts agreed that Simpson Barracks was ecologically important and, when questioned, stated that there would be a significant impact on its ecological and habitat values as a result of the Project.

The removal of a population 95 critically endangered Matted Flax-lily and at least 19 (and possibly up to 45) Studley Park Gums is a significant impact of the Reference Design as exhibited. The Proponent's own expert stated that the vegetation at the Simpson Barracks is significant and its removal would be a significant impact of the Project due to the large population of Matted Flax-lily to be removed.

There was no dispute that native vegetation losses could potentially be mitigated (at least in part) through an offset strategy in accordance with the Guidelines and ultimately DELWP is responsible for that calculation. However, a critical matter is that for flora such as the Matted Flax-lily and Studley Park Gum, proposed mitigation measures cannot be considered as valid offsets. All experts agreed with this important difference in characterisation.

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<sup>350</sup> Mordialloc Bypass – Minister's Assessment of Environmental Effects, page 18.

The IAC notes that this is a matter for the Commonwealth under the EPBC Act however the impacts are within the Project Boundary that is subject to the EES, which the IAC needs to make recommendations about. Although there may be legal imperatives because Simpson Barracks is on Commonwealth land and subject to its own separate assessment and approvals process under the EPBC Act, such impacts should not be considered in isolation.

The matter of whether offsets are required for the Matted Flax-Lily and whether an appropriate offset would be available would need to be determined by the Commonwealth, however the evidence of Mr Lane and Mr Miller through questions from Counsel assisting and Mr Watters is that an offset for this species could be as much as a 30 hectare site, which the experts agreed would be difficult to find. The State should consult with the Commonwealth on this matter.

Beyond this, the ecologists agreed that mitigation measures for these species may not be successful. Substantial practical and ecological challenges were identified. This does not provide adequate comfort to the IAC that impacts of the Project on key endangered and threatened species such as the Matted Flax-lily and Studley Park Gum can be considered acceptable.

The IAC accepts DELWP's advice that the current rate of success for Matted Flax-lily translocation in Melbourne is low.

Dr Lorimer, for BBW Councils, said that he *"would have hoped that there was a system in place that when the consultants seen so many impacts, they would have reconsidered the design at this area"*. Dr Lorimer, the Councils, and many environmental groups called for a bored extension of the tunnel north of Lower Plenty Road and removal of the Lower Plenty Road Interchange to protect the Studley Park Gum and Matted Flax-lily habitat at Simpson Barracks. Many local residents also called for this to ensure the retention of the nearby Borlase Reserve, which has local amenity and landscape values.

When asked by the IAC if maintaining ecological values is important in urban environments, Mr Lane replied that it definitely is. Mr Miller agreed. The IAC agrees with the Councils, ecological experts and submitters including environmental groups, that Simpson Barracks contains critical habitat that would be unacceptably impacted by the Project even if mitigation works were undertaken. Therefore, Simpson Barracks should be designated a "no-go zone" and the Project redesigned accordingly.

By making this recommendation, the IAC does not find it acceptable to move the cut and cover and surface works closer to Greensborough Road residents as the Proponent suggested as the only other option. Instead, the IAC recommends a longer tunnel towards Grimshaw Street to avoid many of the impacts discussed in this report.

The IAC acknowledges that the environmental impacts associated with providing the Lower Plenty interchange are more problematic. The Proponent provided several Technical

Notes<sup>351</sup> which outline the design intent and requirements around the Lower Plenty Road interchange.

However, the IAC is not convinced that the traffic functionality benefits of a full new interchange at Lower Plenty Road have been clearly demonstrated to outweigh the adverse environmental effects. Council believed that further investigations are warranted. As the Council's submitted:

...no one has examined the feasibility of the Project without the Lower Plenty Road interchange at all...

It is entirely reasonable to expect that, if NELP is actually required to do so, it can deliver a design which accommodates the designation of Simpson Barracks as a 'no-go zone' and avoid the need for residential acquisition.<sup>352</sup>

### **(iii) Native vegetation outside of the Project boundary**

The IAC notes that numerous works and adjunct projects are likely to be required to mitigate the effects of the Project, such as reconfigured golf courses or new sporting fields. The ecological effects of these other works have not been assessed by the EES or experts to date, including native vegetation removal.

It will be important for these effects to be accounted for, evaluated and a mitigation strategy prepared as part of the Project approval. This will include a native vegetation assessment by reference to the Guidelines and is likely to generate additional offsets.

### **6.3.2 Bridge Street River Red Gum**

Although the IAC regards the River Red Gum as an asset of principally social significance (as outlined in Chapter 5), it acknowledges the many submissions from the general community received requesting it be retained given its natural values. The IAC notes that the experts all agree that the River Red Gum is a very old tree and if possible, should be retained. It is also important to note the submission of the Wurrundjeri Woi-wurrung Cultural Heritage Aboriginal Council which sought to retain the tree. The IAC notes the submission from the National Trust and others on the heritage and social status the tree represents, and these matters are discussed elsewhere in the IAC report.

The IAC accepts the evidence of Mr Galbraith that a tree protection zone of approximately 20 metres around the tree (with the exception of the existing Manningham Road pavement) should be encouraged to protect the tree and that it should be retained in situ. Importantly, the evidence of Mr Galbraith, the only arborist expert called, stated that the tree could survive over a tunnel if the depth was more than 10 metres. It will therefore be most important to limit surface works that might impact upon the tree, noting that the tunnel proposed beneath the tree is expected to be deeper than critical roots but ramp gradients will need to be remodelled.

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<sup>351</sup> Technical Notes 31 (Document 99), R33 (Document 101), 48 (Document 193) and 55 (Document 389)

<sup>352</sup> Document 374a, paragraph 267, page 86.

Although the Proponent provided some explanation as to why the River Red Gum could not be preserved due to the functional design of the Reference Design and advised that it would encourage innovative solutions by tenderers enabling its retention, the IAC considers that greater efforts should be made to reconsider the design of the Manningham Intersection to preserve the tree (potentially the Ratio Manningham interchange alternative design).

### **6.3.3 Groundwater dependent ecosystems**

The IAC agrees with the Proponent that the rehabilitation program undertaken by Melbourne Water and its partners for the Bolin Bolin Billabong has clear potential to substantially enhance its ecological and environmental values. Melbourne Water confirmed that the Project will not preclude or compromise the implementation of that program.

Notwithstanding, the IAC is of the view that it will be important for the Proponent to commit to partnering or leading this program to mitigate effects of the Project. This is especially important because the effects of the Project on the Bolin Bolin Billabong are sufficient to significantly impact its hydrogeological values and are likely to continue indefinitely.

The monitoring required as part of EPR GW2 will assist in identifying impacts to this sensitive environment and if changes are detected, management and mitigation approaches are available to minimise the impacts. The IAC takes note of the concerns expressed by the Councils and Dr Lorimer and consider the Project would benefit from additional monitoring of the Bolin Bolin Billabong groundwater regime prior to construction.

The IAC addresses the impacts of groundwater modelling in Chapter 10 (Groundwater) and accepts that there may be an understatement of the extent of reduction that could be expected in the deep (permanent) pool of the Bolin Bolin Billabong. A revised groundwater assessment would need to be undertaken to reduce uncertainty regarding environmental effects of groundwater drawdown on Bolin Bolin Billabong and large trees prior to construction commencing, as provided in the updated EPRs.

Based on the evidence, the IAC is satisfied that a well-managed top up watering regime could account for these differences to maintain a viable level of water in this ecosystem. However, the IAC has updated EPR FF6 to ensure an adequate monitoring regime is implemented for the Bolin Bolin Billabong.

Therefore, the IAC concludes that GDE could be monitored and managed through the EPRs, although in principle, the IAC acknowledges it is not the intent of impact assessment to leave the assessment to the conditions of approval to determine impacts.

### **6.3.4 Terrestrial fauna**

Due to the extensive reach of the Project boundary, there are many native terrestrial fauna species that utilise the corridors within it. The Yarra River, Koonung Creek, Banyule Flats, Simpson Barracks are all important habitat areas for particular species.

Impacts to the Powerful Owl which is known to frequent the Yarra and Banyule Flats will be minimised by ensuring the Yarra and Banyule Flats are “no-go zones”. However, the Powerful Owl may also traverse the Koonung Creek surrounds and may be impacted due to habitat removal.

Impacts to the Grey-headed Flying fox are predicted to be minimal and the IAC notes that the Proponent clarified at the Hearing that key areas known to be utilised by this species are identified as “no-go zones”, particularly the Yarra Bend Park Flying-fox camp. Technical Note 8 notes that, although close to the Project boundary, the Grey-headed Flying fox camp is approximately 400 metres from the location of proposed works.<sup>353</sup>

The IAC agrees with the ecological experts that the Project would reduce the opportunity to enhance connectivity for fauna and will further fragment habitat for a number of species, however there was no evidence that this would lead to a decline in any specific species.

The IAC also agrees with DELWP that a Kangaroo Management Plan should be prepared in consultation with it given the relatively confined interfaces between natural and urban areas within the Project boundary, particularly if works are permitted to proceed through Simpson Barracks.

### **6.3.5 Aquatic habitats**

The IAC accepts the evidence from Mr Maiden on behalf of the Proponent that although there will be some localised impacts on aquatic habitat, these are not expected to be adverse and the impacts to listed aquatic species will be confined as they mostly occur within the Yarra River and not the Banyule or Koonung Creeks.

While surface water impacts are not readily defined and therefore impacts on the riverine and aquatic environments are not certain, they are not considered to be significant (with the exception of potential impacts to Bolin Bolin Billabong, discussed elsewhere). The IAC agrees with Mr Maiden that to prevent impact of the Project on aquatic habitats, the drainage and containment design and maintenance during operation should ensure retention of high flows, capture of sediments and the treatment of pollutants.<sup>354</sup>

The IAC is generally comfortable that the surface water and ecology EPRs can monitor these potential impacts from surface water to the environment. More specifically, in regard to any threatened fish species that may be present, the IAC accepts Mr Maiden’s evidence that the EPRs, with inclusion of minimise works during critical breeding times for the Australian Grayling, are sufficient to protect threatened fish species such as the endangered Macquarie Perch and Australian Grayling against impacts from the Project.

### **6.3.6 Biodiversity offsets**

The IAC agrees that the overall calculation and efficacy of this process is a matter for DELWP to determine given Victorian approval systems. The IAC recommends that the Proponent provide an updated Biodiversity Report to DELWP including GDEs once the detailed design is known to ensure updated offsets are determined.

The IAC agrees with Mr Mueck and Mr Lane that offsets should be secured prior to the start of works for the construction of the Project, including offsets for removal of native

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<sup>353</sup> Document 42, Technical Note 8

<sup>354</sup> Document 154, page 15



vegetation on construction sites. This is important to ensure that the offsets that would be required can actually be provided and secured. This also aligns with the IAC's view in Chapter 16 (Planning Scheme Amendment) that it would not be appropriate to permit native vegetation removal as part of "preliminary works" that pre-date detailed Project approvals required by the Incorporated Document or EPRs.

The IAC reiterates its findings about the lack of equivalence between mitigation plans proposed for the Matted Flax-lily and Studley Park Gums and offsets that may be required. While the IAC has made a principal recommendation to declare the Simpson Barracks as a "no go zone", it is conscious that if the Project was permitted to affect this land, permission would need to be obtained and relevant offsets secured under the EPBC Act (Cth).

## **6.4 Findings**

The IAC finds:

- The Project has not taken sufficient measures to avoid and minimise ecological impacts of the Project. In particular, the approach taken to assume that all native vegetation within the Project boundary is to be removed is not best practice and does not meet the relevant EES evaluation objective.
- There would be significant unacceptable effects on the endangered Matted Flax-lily population and DELWP Advisory Listed threatened Studley Park Gum, particularly on land within Simpson Barracks. The measures proposed by the Proponent by way of mitigation are not demonstrated to be effective and do not represent offsets for these species.
- Efforts should be made to find an engineering solution to retain the River Red Gum as a socially important tree for the community.
- The IAC has made some changes to the FF EPRs, including ensuring that offsets are secured prior to construction; inclusion of a Kangaroo Management Plan and further monitoring as required.

## **6.5 Evidence and submissions**

### **6.5.1 Arboriculture**

#### **(i) Calculation of amenity plantings**

Technical reports G and Q identify that much of the vegetation within the Project area is planted vegetation, commonly planted within the last 20 years. The Proponent stated that 67 per cent of amenity trees to be removed or potentially impacted by the Project are within the Road Zone.

In calculating trees to be lost, the EES provides estimate of the total number of planted amenity trees to be removed to construct the Reference Design. All other trees within the Project boundary are categorised as 'potentially impacted'. Impacted trees have been categorised as medium and long-term viability (MLTV) or non-MLTV trees. MLTV trees are assessed as those that already contribute to the landscape and have a useful life expectancy of more than ten years.

The Proponent confirmed in closing submissions that the total number of amenity trees planned for removal or potentially impacted by the Project is 25,947 (including 17,321 trees within a Road Zone) and that it has committed to replanting at least 30,000 trees.

Ms Caffin's evidence for the Proponent is that only approximately 30-40 per cent of canopy trees lost will be able to be planted within the Project boundary based on the Reference Design and land remaining in the Project boundary. The Warringal Conservation Society and others advocated for replacement trees being located within or adjacent to the locations where tree losses occur.

Ms Caffin suggested a hierarchy of tree planting locations has been further developed by The Proponent stating that tree planting will occur in the following order:

1. Within the North East Link Project boundary - as first priority, in locations in close proximity to where trees are removed (contractor responsibility);
2. Outside the Project boundary and within 400m walking catchment from where trees are removed (NELP responsibility);
3. Within Victorian Government and local Council land within the municipalities of Manningham, Boroondara, Nillumbik, Yarra, Whitehorse and Banyule outside the Project boundary (NELP responsibility);
4. Within the wider north east area outside the Project boundary, if required (NELP responsibility).

Note: all locations selected must provide for long-term tree growth.<sup>355</sup>

The Councils and other submitters submitted that the calculation of amenity trees was flawed because the amenity plantings assessed by the Proponent are restricted to trees more than three metres high and excludes anything that is not a canopy tree, such as shrubs, grasses and ground cover. The Councils stated:

The approach taken by NELP to vegetation is to slice vegetation up and then to ignore relevant parts as follows: -

- (a) Native vegetation is first split into two categories a) planted native vegetation and b) naturally occurring native vegetation. Naturally occurring native vegetation is sent to the ecological report. Planted native vegetation is sent to the arboriculture report. The disaggregation of the vegetation artificially alters the nature of environmental effect and the assessment of it;
- (b) All vegetation except for trees over 3 metres in height are then excluded from the arboricultural assessment and therefore excluded from consideration in the context of determining any replacement plantings;
- (c) The remaining 25,947 trees over 3 metres are then divided into three sub-categories:
  - medium and long term viable (MLTV) trees (i.e. those that are considered viable for 10 years or more);
  - non-medium and long term viable (non-MLTV) trees (i.e. those that are likely to die within 10 years);
  - trees within the Road zone....<sup>356</sup>

<sup>355</sup> Document 24u, Meg Caffin expert witness report page 5

**(ii) Tree canopy loss**

The ecological experts agreed that the loss of tree canopy cover (indigenous and amenity plantings) represents a significant loss of ecosystem services and other values to the community. They suggested in the conclave report that the Tree Canopy Replacement Plan will take many decades to compensate for some of these values.

Arboricultural assessments and descriptions of the existing trees were undertaken for the Reference Design and described in various precincts within Technical Report G. These treed character descriptions were not contested by experts or parties. For example, the EES notes the treed character of Greensborough Road (Yallambie Road to River Red Gum Walk) as providing near continuous, large-scale canopy cover along an approximately one-kilometre section of Greensborough Road, the most notable vegetative feature being the band of trees within Borlase Reserve extending along the western side of Greensborough Road into the Plains Grassy Woodlands native vegetation patch within Simpson Barracks.<sup>357</sup>

The EES assesses the removal of trees for construction resulting in reduction of urban forest canopy cover as a 'planned risk' but rates it of major consequence.<sup>358</sup> The Proponent acknowledged that tree removal (whether native or amenity plantings) represents a significant effect of the Project.<sup>359</sup>

Mr Galbraith stated that:

The definite loss of planted trees will be greatest in the vicinity of Bulleen Rd from Manningham Rd West to the Eastern Freeway. The main species which will be affected are various eucalypts which are between 15 and 45 years old and which include local species such as River Red Gum and Yellow Box. Some wattles and paperbarks are also in the same areas.<sup>360</sup>

WCS submitted that:

...while the loss of trees has a huge impact on habitat...the loss also has a significant impact on other environmental factors. Trees sequester carbon, reduce urban heat island effects, and absorb pollution from transport emissions; all of these mitigating climate change.<sup>361</sup>

There appears to be broad consensus that the Project should seek to achieve a net gain in tree canopy. The question is to what extent EPR AR3 should be modified to provide prescriptive requirements.

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<sup>356</sup> Document 374a, paragraph 287, page 92.

<sup>357</sup> Technical report G, page 33.

<sup>358</sup> Technical report G, page 49.

<sup>359</sup> Document 434, paragraph 297.

<sup>360</sup> Document 29d, page 24.

<sup>361</sup> Document 297b, page 14.

The Tree Canopy Replacement Plan required by the EPRs would require a net gain in canopy, regardless of whether the trees are native or exotic. Tree canopy cover would need to be re-established within 15 years after Project completion. The EES acknowledges that replanting within the immediate road boundary is limited. However the EES provides a hierarchy as to the order of priority for plantings that includes:

- within the Project boundary where possible
- adjacent to the Project alignment
- within a local government land affected by the Project
- being within the wider north-east region.<sup>362</sup>

This hierarchy in the EES aligns with the one Ms Caffin included in her evidence.

The Proponent submitted that EPR AR3 should be clarified to confirm its commitment to a 2:1 ratio for replacement amenity plantings, but that it should not be made more prescriptive. Ms Caffin (called by the Proponent) and Mr Galbraith (called by Manningham) suggested that precaution be used when providing a ratio for replacement trees. Rather, the focus should be on achieving a net gain in canopy rather than a ratio of trees to be planted because qualitative outcomes and post planting maintenance is key.

Dr Lorimer, the Warringal Conservation Society and Friends of Banyule suggested that understorey plants (plants below three metres) also be included as an important component of the Tree Canopy Replacement Plan.

The Councils jointly submitted a new EPR AR4 for understorey replacement plantings. The Proponent did not agree with the inclusion of an understorey component in the Plan as they state it cannot readily be mapped using aerial imagery and that the UDS includes multiple objectives and design requirements relevant to a consideration of understorey plantings that should be sufficient. It submitted it will apply the best practice measures recommended by Ms Caffin in assessing the Tree Canopy Replacement Plan prepared in accordance with AR3.

EPR AR3 requires a net gain in tree canopy cover by 2045. The Proponent submitted that this represents a best practice mitigation measure for tree loss resulting from major infrastructure projects. It applies to canopy cover from both native vegetation and amenity trees. Submission 855 suggested that net gain in tree canopy should be achieved by 2030 and several submitters proposed a requirement for early tree canopy replacement, rather than after Project construction. Mr Lane recommended that tree canopy replacement in adjacent areas outside the construction zone be undertaken as early as practical after Project approval to maintain habitat for common fauna species in the Project area.

The Proponent revised EPR AR3 to now include replacement planting, including understorey plants, occurring as soon as possible.

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<sup>362</sup> Technical report G, page 56.

### **(iii) Cumulative impacts**

Section 8.4 of Technical report G describes cumulative impacts of tree canopy loss. The North East Link Project is one of several major infrastructure projects planned or under construction within Victoria including the Melbourne Metro Rail Tunnel, West Gate Tunnel Project and a number of Level Crossing Removal Projects.

The EES confirms that the cumulative impact of infrastructure projects and the intensification of urban development is a continuing decline of overall canopy cover across Melbourne. However, it suggests that the loss of trees and associated canopy is inevitable when constructing such large-scale, transformative projects. One way it proposes to address the importance of the urban forest is the long-term goal of the Project to re-establish urban canopy cover.

Nillumbik submitted that tree canopy is critical to mitigating climate change challenges. It submits that reduced tree canopy will add to the cumulative impact on the decline of the tree canopy coverage in the north-east and it is 'extremely important that appropriate measures are taken to minimise and avoid where possible and mitigate replacement where it is unavoidable'.<sup>363</sup>

The EPRs include a number of mitigation and management measures to seek to minimise biodiversity impacts to an acceptable level. Mr Lane states that the scope of and outcomes mandated in the EPRs provide a comprehensive and relevant framework for mitigating the potential and actual impacts generated by the Project on biodiversity.

## **6.6 Discussion**

### **6.6.1 Arboriculture**

It is clear that a contemporary challenge facing Victoria is the loss of urban tree canopy, both in the public and private domain. The Project would contribute to this directly. There is no dispute between the parties that the loss of tree canopy and 25,947 amenity trees (which includes native and exotic) calculated on the basis of the Reference Design would be a significant impact of the Project.

The experts and the EES state that tree loss is a major environmental effect of the Project as exhibited.

In regard to calculating amenity trees to be removed, there seems to be dispute about how these trees have been calculated (for example, less than three metre sized trees were not counted). The IAC agrees with the joint Councils and others that there may be more trees potentially lost, depending on how they are counted. The IAC agrees with Dr Lorimer, joint Councils, Mr Deane and Friends of Banyule that it is important to account for the replacement of all types of vegetation affected by the Project, including understory plantings in the Tree Canopy Replacement Plan and has amended EPR AR3 to reflect this.

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<sup>363</sup> Document 175, page 17

The Proponent and its consultant team will need to provide a workable method of analysis of existing vegetation including understorey.

The evaluation objective for arboriculture and tree canopy, '*To minimise adverse effects on landscape values*' has only been partly met. The potential removal of 25,947 planted amenity trees (native and exotic) of which two thirds are MLTV will have an impact on the landscape values, amenity and urban ecology as accepted by Mr Lane, the Proponent's ecological expert. Many of these trees are within important corridors such as the Koonung Creek and although are deemed to be planted amenity trees, they also provide habitat for terrestrial fauna, including the Grey-headed Flying Fox.

Given the extensive Project boundaries and scope of the declared public works, the IAC considers that unless the Project footprint is minimised significantly, this extent of canopy loss is likely to persist. This is particularly the case because much of the established canopy proposed to be removed is close to existing roadways proposed to be expanded as part of the Project.

The IAC appreciates that in many areas within the Project boundary, it will not be possible to replant replacement canopy trees. This is a notable impact of the Project that will also impact on landscape values of the corridor, including the values of open space as discussed in Chapters 7 (Visual) and 5 (Social). In particular the areas along the Koonung Creek corridor in close proximity to the Eastern Freeway expansion part of the Project.

Another concern is that, as confirmed by the ecologists, a Tree Canopy Replacement Plan will likely take decades to implement to compensate in part for the loss of amenity trees.

On this basis, if the Project is approved, the IAC would recommend a requirement for replacement planting to commence as soon as possible and in accordance with the hierarchy recommended by Ms Caffin. This hierarchy has been reflected in EPR AR3. This would enhance landscape and amenity values and also facilitate improved fauna movement within the corridor.

Councils also proposed a number of other detailed changes to the Tree Canopy Replacement Plan EPR AR3 as well as proposing a new EPR AR4 for understorey replacement plantings. The IAC regards much of the detail proposed by Councils would be within the plan itself, not the EPR and agrees that consultation should occur with relevant Councils when preparing planting and landscape plans.

### **6.6.2 Cumulative impacts**

Although the EES acknowledges the loss and importance of tree canopy and the urban forest, it provides minimal cumulative impact assessment of this loss.

Notwithstanding, the IAC notes that the EPRs for this Project would require the re-establishment of urban tree canopy cover similar to EPRs for other large infrastructure projects, although noting this may take decades to replace the canopy lost and it may be replaced in areas somewhat remote from the Project boundary. For the extent of vegetation removal to be regarded as acceptable, a holistic approach would need to be taken to the replacement of canopy across broader areas, such as affected and nearby municipalities.

### **6.6.3 Findings**

The IAC finds:

- There will be an extensive loss of tree canopy as an outcome of the Project which will contribute to the cumulative impact of tree loss from other large infrastructure projects and the ongoing urban intensification of Melbourne. The Tree Canopy Replacement Plan will go some way to mitigating this loss however, its outcomes will be diminished by an inability to replace tree canopy within many areas from where it is removed and the time that will be required for trees to grow to provide similar ecological and landscape values.
- The IAC has made changes to EPR AR3 to incorporate suggested changes from submitters to incorporate the inclusion of understory plantings in the Tree Canopy Replacement Plan and that planting be undertaken as soon as possible.

These findings lead the IAC to conclude that relevant evaluation objectives pertaining to ecology, habitat and arboriculture have only partly been met.

### **6.7 Recommendations**

The IAC has made recommendations on biodiversity in relation to strengthening EPRs, avoidance of significant areas of habitat through Project changes, the need for mitigation and offsets and the need to ensure groundwater drawdown does not affect GDEs.





## 7 Visual impact, urban design and landscape

The EES addresses Urban Design in Chapter 7 and proposes an Urban Design Strategy<sup>364</sup> (UDS) in Attachment II. Landscape and Visual Impacts are addressed in Chapter 16 of the EES, supplemented by more detailed analysis in Technical Report G (Arboriculture) and Technical Report H (Landscape and Visual). This was supplemented by additional photo montages prepared for the Hearing at the IAC's request attached to Technical Note 23.<sup>365</sup>

The relevant evaluation objective is:

To minimise adverse effects on landscape values, visual amenity, recreational and open space values and to maximise the enhancement of these values where opportunities exist.

The Proponent called the following expert witnesses:

- Mr Kevin Begg, Urban Designer, GHD in respect of urban design. Mr Begg was also a co-author of the UDS.
- Mr Allan Wyatt, Landscape Architect, Xurban relating to the visual and landscape effects of the Project, including a Landscape and Visual Impact Assessment (LVIA) as part of the Project Team.
- Ms Meg Caffin, Arboriculturist, Urban Forest Consulting regarding tree canopy loss and potential reinstatement.

BBW and Manningham Councils called Mr Craig Czarny, Urban Designer, Hansen Partnership and Mr Steve Schutt, Landscape Architect, Hansen Partnership to address landscape and visual impact.

Mr Stephen Axford, architect and urban designer, was engaged by the IAC to provide independent advice about the Project's urban design aspects. He prepared three reports tabled as public documents in the Hearing.<sup>366</sup>

### 7.1 Key issues

Developing a new major infrastructure project in an established suburban area will inevitably result in a notable physical change to existing urban and natural environments along the road corridor and beyond.

Key issues are:

- the adequacy and utility of the visual impact assessment
- identifying types of visual impact and locations likely to be most affected by the Project, including impacts on public open space. A related issue is the landscape and visual effect of proposed tree removal to facilitate the Project and capacity to re-establish tree canopy locally

<sup>364</sup> Dated April 2019.

<sup>365</sup> Document 57.

<sup>366</sup> Documents 7, 75 and 354. Part of his brief was to consider the written and oral evidence of all expert witnesses pertinent to his area of expertise.

- to what extent the Reference Design should demonstrate compatibility with the UDS provisions
- whether the UDS provides a rigorous framework for the Project to be implemented through the proposed Incorporated Document and the EMF
- key areas requiring early urban design and land use analysis to inform the preparation of detailed plans
- capacity for urban design and public realm enhancements
- the process for approval of urban design and landscape plans and involvement of UDAP.

## 7.2 Adequacy and utility of visual and landscape impact assessment

### 7.2.1 Evidence and submissions

The Councils were critical of the EES methodology to evaluate visual and landscape impact. They also emphasised concerns recorded in Chapter 1 about the capacity to use a reference design to evaluate these Project effects.

In principle, Mr Czarny considered that *“the quality and availability of information to enable fulsome appraisal of the proposed Reference Design [was] challenging at best”*.<sup>367</sup>

Notwithstanding support for the methodology used by the Proponent in its LVIA to identify sensitive receptors and appropriate locations for visualisations,<sup>368</sup> Mr Axford expressed a similar opinion in his first report to the IAC. He elaborated that *“with the limited range of photo-montages and diagrams available, it is challenging to develop an overall picture of the physical impacts and opportunities of the Project”*.<sup>369</sup>

Fundamentally, Mr Schutt queried the validity of the exercise of preparing a landscape and visual impact analysis for a project that takes the form of a Reference Design, since it can be expected to change. Given this, he cautioned the IAC not to rely too heavily on the impact assessment at specific viewpoints.

Mr Schutt’s concerns with the LVIA included a perceived lack of reliability of the Zone of Theoretical Visibility (ZTV) modelling (including reduced precision by using broad contours and the failure to identify why certain viewing positions had been nominated) as well as the use of a limited angle of view, considered to have the potential to reduce the perceived dominance of structures from identified vantage points.<sup>370</sup>

The Councils and Mr Schutt also considered the qualitative assessment of visual impact in the LVIA to be understated in many instances. This issue is explored further below.

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<sup>367</sup> Document 30b.

<sup>368</sup> Page 8, Document 75.

<sup>369</sup> Page 3, Document 7.

<sup>370</sup> Document 30d, including the summary at page 6.

Mr Wyatt explained that the key benefit of this process was to identify “hotspots” requiring more careful design to ensure suitable built form and urban design responses. An important input was the impact on the relevant character area.

The LVIA identifies three main character areas<sup>371</sup> which align with those identified in the UDS as depicted in Figure 28<sup>372</sup>:

- **Ridgeline** – located in the northern section of the study area from Lower Plenty Road to the M80 Ring Road with a suburban character set in elevated topography. It is valued for its prominent vegetated ridgelines and associated views.
- **Yarra River Valley** – located in the southern section of the Project area from the Manningham Road interchange to Hoddle Street with a generally open, vegetated and naturalistic character. It is valued for its natural landscape features including the Yarra River environs, low lying floodplains and culturally significant landscapes such as the Bolin Bolin Billabong and Heide MOMA.
- **Koonung Creek** – consists of the Eastern Freeway section of the Project from Bulleen Road eastward, including views to and across dense vegetation. It is valued for its linear open space associated with the Koonung Creek and vegetated appearance including a dense green corridor along the Creek and Freeway edges.

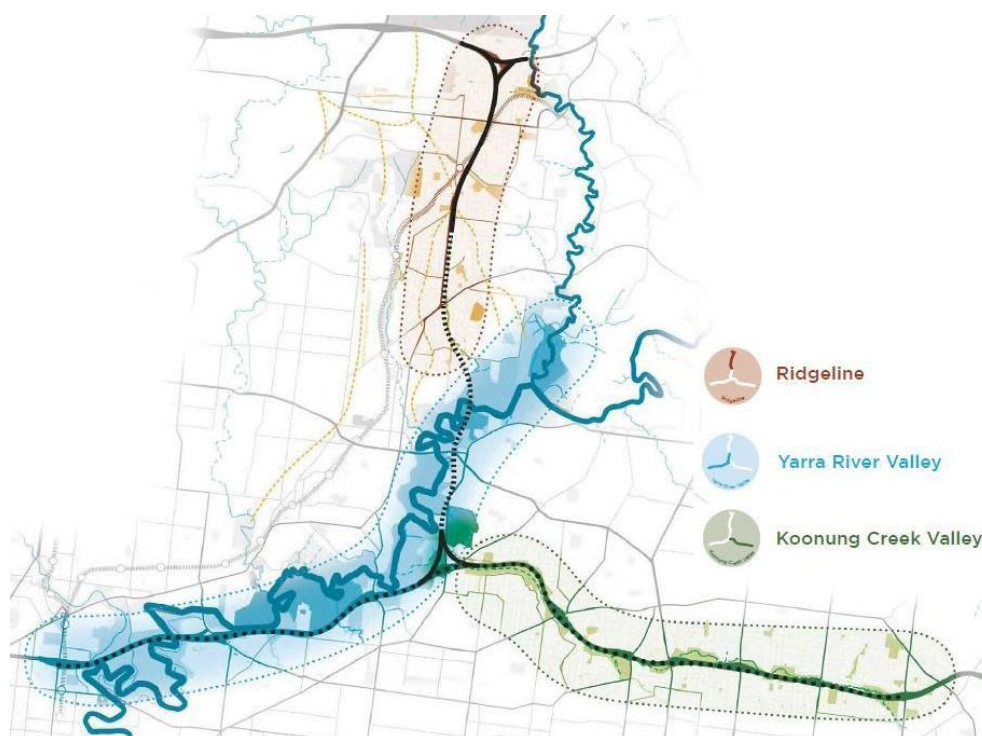


Figure 28 Map of character areas<sup>373</sup>

<sup>371</sup> In Chapter 7.2 of Technical Report H. Values and impacts are summarised for each area at pages 105-106, 170-171, and 244.

<sup>372</sup> Pages 23, 27, 47 and 65 of the UDS.

<sup>373</sup> Document 30b, page 10, original source EES Attachment II, Urban Design Strategy.

Mr Schutt, Mr Czarny and the Councils were concerned that the LVIA had not taken sufficient account of inherent landscape values of areas likely to be affected and that character areas had not been identified with sufficient detail.<sup>374</sup> Mr Schutt was also concerned that Mr Wyatt had relied heavily on capacity for future landscape screening but that neither he nor the exhibited EES had in any instance recommended changes to the Project design or alignment to minimise visual impacts (especially for viewpoints assessed as 'high').

### 7.2.2 Discussion

The challenge with evaluating a linear major infrastructure transport project by way of a Reference Design becomes more acute when evaluating potential visual and urban design impacts.

There may be numerous forms, layouts and designs of potential infrastructure that could meet the 'Project brief'. In these circumstances, when evaluating environmental effects, the IAC is arguably obliged to consider the potential for Project infrastructure to be proposed along any or all land within the Project boundary as identified in the Map Book. No doubt some of this may take the form of temporary infrastructure (such as construction compounds) but the starting point is the ability for structures associated with the Project to be built to the Project boundary. Otherwise, potential visual and urban design effects may be underestimated.

The IAC affirms Mr Axford's view that the methodology used for the LVIA is generally fit for purpose and accepts the evidence of Mr Wyatt that the horizontal field of view selected (in most instances less than 80-100 degrees) still provides a realistic barometer for visual impacts 'on the ground', at least at this stage of the Project assessment.

While some of Mr Schutt's observations about shortcomings of the methodology are technically correct (for example, the apparently arbitrary nomination of a percentage design height to realistically represent potential structures),<sup>375</sup> the IAC's assessment of the Project's potential for visual and landscape impact has not been hampered. This methodology may result in the ZTV being understated where Project structures could be seen in the landscape from further afield. However, it is clearly apparent that, for this Project, viewlines that are potentially most sensitive, or problematic are those from locations closer to the proposed alignment which have been included.<sup>376</sup>

Overall, the IAC is satisfied that the photomontages and LVIA in the Technical Report suitably identify the types, distribution and potential scale of visual impacts that may result from the Project, rather than just depicting localised viewpoints. The IAC has also inspected from

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<sup>374</sup> A component of this was considered to be an over simplistic characterisation of landscape types, combined with a lack of evidence that existing policies, guidelines and the like had been taken into account in this assessment (summarised at page 6 of his expert report).

<sup>375</sup> Outlined at page 25 of his report.

<sup>376</sup> Noting conclusions summarised at page xiv. of Technical Report H.

many public viewpoints identified in the LVIA to supplement its understanding of physical context and landscape character.

The approach taken by the LVIA to identifying landscape character is generally supported and the IAC makes further findings in Chapter 7.4 below about the way this concept is approached in the draft UDS. The IAC notes the express references to zoning, overlays, policy, strategies and the like as well as public consultation (including with Councils) that underpinned the LVIA.<sup>377</sup> The concept of landscape sensitivity has also been adequately addressed.<sup>378</sup>

While laudable, it would arguably be too onerous to expect the Proponent to identify all landscape *values* as a foundation for the LVIA, since this would require extensive direct consultation including consideration of all submissions to an EES process.

However, one key aspect that the IAC does take issue with is the LVIA methodology for assessing the scale of impact namely, the rating of visual impact. For public viewpoints, the Technical Report sets out the parameters for this assessment, focusing on:

- visibility
- distance
- landscape character
- viewer sensitivity
- the number of viewers.<sup>379</sup>

Essentially, to achieve a 'high' visual impact for a public viewpoint, Mr Wyatt determined that all five elements must be rated high. This effectively precludes a high impact rating for areas with minimal viewer numbers.

While this may be a fair representation of impacts on the community more broadly, it is not representative of the visual impact that could actually be experienced at that particular location. The IAC also accepts residents and Council's submissions and Mr Schutt's evidence that the rating of visual impact is qualitatively too low for some interfaces. This is even though the underlying risk assessment fairly acknowledges 'severe' impacts from planned works for all operational risks identified.<sup>380</sup> The main discrepancies identified by the IAC are explored below.

### 7.2.3 Findings

The IAC finds:

- The approach taken by the LVIA to identifying landscape character is generally supported but would be best supplemented by more detailed Urban Design Framework Plans for key interchanges and interfaces as recommended below.

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<sup>377</sup> Including Appendices A and B, pages 28 and 286 (although specific policies for Boroondara City Council do not seem to have been included expressly).

<sup>378</sup> The relevant approach was outlined at pages 9 and 39 of Technical Report H and summarised in conclusions for each character area.

<sup>379</sup> Pages 10-13, Technical Report H.

<sup>380</sup> Table 3, Appendix D, Technical Report H.

- The photomontages and LVIA in the Technical Report suitably identify the types, distribution and potential scale of visual impacts that may result from the Project as described in the Reference Design.
- The LVIA assessment methodology, used for rating visual impacts is not supported since it has the capacity to underestimate these impacts, in particular for public vantage points.
- Decision makers will need to exercise caution in circumstances where there is clear scope for the ultimate design to change within the Project boundary in a way that could increase capacity for visual impact.

## 7.3 Locations likely to be most affected

### 7.3.1 Introduction and approach

A clear primary objective of the EES is to minimise visual impacts of the Project. An important aspect of minimising visual impact will be the design and siting of structures that will be visible from both the public and private domain, including careful consideration of forms, heights, setbacks and materials. The EES identifies changes expected to visual amenity in Table 10-1 of Technical Report I.<sup>381</sup>

The Project faces numerous challenges to integrating with its setting. The greatest challenge arguably stems from the fact that construction will take place within an established suburban area which benefits from a high-quality natural setting in key locations.

The Proponent described the Project corridor as consisting of a highly urbanised environment. Mr Begg acknowledged that this is a “*constrained corridor*” which includes mature residential areas but which is also integrated with valued parkland and open space.

Presumably, this is why the relevant evaluation objective seeks to “*minimise*” adverse effects rather than to seek to avoid them. To evaluate whether this can be suitably achieved, it is necessary to consider the potential for impact and the extent to which this could detract from existing landscape and character values.

Project delivery is likely to entail road infrastructure including elevated road structures, noise walls, flood walls, anti-throw screens, viaducts, pedestrian bridges, shared use paths, ventilation structures, equipment buildings, open cut works and construction compounds.<sup>382</sup> The extent to which each of these elements will be used will depend largely on inputs into the adopted design.

Many submitters expressed concern that the Project would provide a new or expanded freeway “*squeezed where it doesn’t fit*”.<sup>383</sup> Some residents explained that as depicted, the

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<sup>381</sup> Page 184 onwards.

<sup>382</sup> Identified as risks in Table 3 to Appendix D of Technical Report D.

<sup>383</sup> For example, submissions 418 and 747.

design was “*too big, too wide, too close, bringing the...freeway into the bedrooms of locals*”.<sup>384</sup>

Many local residents, traders and community groups (including schools) expressed strong concern that the visual impacts of the Project would be unsustainable, even if individual elements were well designed. In many instances, this was expressed to be a product of:

- the scale of the Project
- the location and extent of infrastructure necessary to support the new and expanded roadways
- the proposed Project boundary being so close to residential properties and projecting into areas of open space and school grounds, plus
- the combined extent of tree removal required.

They were also not satisfied that suitable built form interfaces could or would be provided through the proposed approvals process especially since the EPRs were regarded as too generic to facilitate this and the approval of detailed plans would largely follow a pre-determined road alignment.

Although the UDS calls for high quality, generous landscaping to play a role in screening and buffering Project infrastructure, the IAC is conscious that there would be a lack of room for landscaping for some parts along the Project corridor. The expert evidence of Ms Caffin for the Proponent (discussed in detail in Chapter 6) confirms that a high proportion of the replacement trees for tree canopy removal cannot be accommodated within the same municipalities from which it will be lost, let alone within or near affected parts of the Project boundary. Therefore, the capacity for landscaping to provide adequate screening even for low level infrastructure needs to be approached with caution.

It is not feasible to document all of the concerns expressed by residents, authorities and other stakeholders in detail in this report, even though the IAC has considered all submissions both written and oral.<sup>385</sup> Rather, the IAC has focused on key types of infrastructure and interfaces likely to cause significant visual impact, with reference to many locations which are likely to represent what it regards as potential ‘worst case scenarios’ for the Project.

### **7.3.2 Evidence, submissions and IAC response**

The LVIA concluded that viewpoints with the highest sensitivity are close to the Project area, distributed across all landscape character areas. High sensitivity was identified where viewpoints were near open space or directly adjacent to proposed ventilation stacks, noise walls and elevated roadway elements. The highest likely impacts were identified south of the M80 Ring Road corridor, south west of the M80 Ring Road interchange and south of the Eastern Freeway east of the Bulleen interchange and around the proposed southern portal given the proximity to open space including sports fields.<sup>386</sup>

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<sup>384</sup> Submitter 708.

<sup>385</sup> Many of which are summarised in outline form in Table 2 to Appendix A in Technical Report H.

<sup>386</sup> Summarised at pages xiv and xv of Technical Report H.

**(i) Close views from residential land to freeway infrastructure with minimal landscaping**

The significant widening of existing roads such as the Eastern Freeway and Greensborough Highway has the potential to cause notable visual impact, as recognised in the EES.<sup>387</sup> Some submitters referred to the freeway widening as an “*overly grandiose plan*” that would be at the expense of local liveability. The Councils echoed the concern that the projected land take was excessive, at least on the basis of the Reference Design, to the detriment of adjacent communities.

Submitters nearby to these existing roadways acknowledged that they lived in a modified environment on the edge of a freeway but considered that they were in part compensated by the positive benefits of a vegetated setting and access to open space and parklands. They were highly concerned about potential visual impacts of freeway widening, including elevated structures, noise walls at reduced setbacks and the associated removal of existing vegetation. One resident submitted that “*we have nothing more to give other than to severely cripple our lifestyle*”.<sup>388</sup>

The northern end of Mountain View Road, Balwyn North is an acute example, on the immediate south eastern side of the Bulleen Road/Eastern Freeway interchange.<sup>389</sup> This area sits within the Koonung Creek Valley adjacent to linear parkland which abuts the Eastern Freeway and acts as a visual buffer for residences beyond.

In many instances, residents were concerned that the Project boundary appears to extend to their front property boundaries, encompassing the local road and intervening vegetation. The Reference Design for Mountain View Road shows an expanded freeway carriageway including rising viaduct structures, with a tall replacement noise wall shifted further south far closer to dwellings. The shared user path is shown on the inside southern side of this wall. There appears to be no room for replacement tree planting.

To achieve suitable acoustic outcomes, there is also likely to be minimal variance in the projected overall height of the noise wall, subject to design.<sup>390</sup> One resident referred to this as having a “*claustrophobic effect*” compared with the current “*openness*” of this residential area and its links to adjacent parkland.<sup>391</sup>

The LVIA assesses the impacts at Viewpoints 47, 48, 49 (public vantage points) and F (private land). It considered that from Highview Road, the visual impact would be ‘medium to low’ because the noise wall and landscaping were expected to be similar to existing. A similar rating was applied to the Mountain View Road location allowing for screening vegetation to grow in height. The photomontage depicts a solid noise wall with clear screening to the proposed viaduct structure.

<sup>387</sup> For example, at page 106.

<sup>388</sup> Submitter 150.

<sup>389</sup> Depicted in Sheet 23 of 42 of the Map Book.

<sup>390</sup> This and other heights are included in maps at Appendix I, Technical Report C.

<sup>391</sup> Submitter 247.



The IAC agrees that the visual impacts on residential properties such as this will be extreme. This will arise from the combination of closer and higher noise walls and removal of existing vegetation with an inability to replant. The IAC recognises that this is unlikely to be avoided altogether this close to major interchanges such as Bulleen Road/Eastern Freeway given lane requirements. However, careful refinement will still be necessary. Areas more removed from these locations, priority should be given to avoiding this type of interface.

In addition, the IAC recommends that the Project boundary be pared back from single access local roads in all instances where adjacent properties are not sought to be acquired. This would provide greater certainty for residents to meet reasonable access expectations.

The IAC also considers that the use of extensive elevated roadways at the Bulleen Road/Eastern Freeway interchange (see Figure 32) has the capacity for significant visual impact that cannot be suitably mitigated. This indicates that the urban design approach proposed in the Reference Design is not responsive to its setting.

The LVIA also identifies that visual impact is likely for parts of Belle Vue Primary School such as its grassed playing fields that would be adjacent to a far higher noise wall along its property boundary, combined with established tree removal within the road reservation.<sup>392</sup> Given its location and the nature of this interface, the IAC considers this site is likely to be notably impacted, regardless of the precise roadway design adopted. On balance, it considers that priority should be given in design to school safety (as raised in submissions) and noise management but that visual impact is of somewhat lesser sensitivity for that property.

Columba Street, Balwyn North (Viewpoint 40) is another example of a very direct abuttal to the Eastern Freeway, with residential property boundaries some 10 metres from the current clear noise wall with no room for landscaping. The Year 0 and 10 ratings of impact were 'Medium' since the noise wall would increase in height and a new elevated section of roadway would be closer.<sup>393</sup> However, the viewpoint was not taken from the private domain which would have triggered a different rating methodology with a higher impact.

The IAC considers that it is inevitable that some elevated properties at close range will be subject to views of more complex and broader road infrastructure, with associated noise walls. In many instances, such as Columba Street which are already on the very edge of a busy freeway, this will be an extension of an existing condition although the loss of adjacent open space for many properties would compound the impact. Overall, it is likely that these types of interfaces could be managed to an acceptable level subject to careful design of structures and minimisation of footprint.

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<sup>392</sup> As depicted in TN32, Document 57a.

<sup>393</sup> The rating was confined by expected low visitor numbers. Similar impacts would be expected such as for properties in Outhwaite Avenue, Doncaster as shown in schematics prepared by Submitter 760.

**(ii) Noise walls shifted closer to residential properties with take up of linear open space**

Estelle Street, Balwyn North is another street that illustrates the potential for significant visual and landscape impact, especially in light of the proposal to reduce the adjacent linear reserve to facilitate freeway widening.

Some residents explained that the Project would “rob [them] of the tiny green buffer of protection” they now have between dwellings and the freeway. They, like many submitters in other areas along the alignment, considered that the loss to local amenity from Project infrastructure and vegetation loss would be “acute and irreversible”.<sup>394</sup>

The proposed Reference Design would shift the noise wall near the outer edge of the current linear parkland far closer to dwellings opposite to accommodate the widened freeway. The noise wall would also substantially increase in height. There is some capacity for linear landscaping in front of this wall and potential to replace or narrow sections of Estelle Street roadway to provide additional landscaping opportunities (in consultation with Council and residents).

The photomontage prepared for Viewpoint 51 is sited in this location. The LVIA assesses the Year 0 impact as ‘high’ since the new noise wall would be a dominant feature and adjacent open space would be lost. At Year 10, it regards this impact as ‘medium’ allowing for landscaping and effective design of the noise wall.

Residents and BBW Councils contested this rating of impact. They submitted that even allowing for intervening landscaping and a well-designed noise wall, the structure would be far closer to dwellings and there would be a substantial take up of open space and the generous landscaped setting it provides, resulting in an enduring high visual impact.

The nature of the change in outlook and setbacks along this area are generally representative of changes expected in many other locations including Gillingham Street Watsonia North (Viewpoint 4) and Hamlet Street, Greensborough for example (Viewpoint 8), albeit within a different character and landscape setting.

The IAC considers that significant changes to character and outlook will occur if the Project consistently reduces areas of linear parkland adjacent to dwellings, even if there is capacity for intervening vegetation. This is one of a number of potentially unacceptable outcomes that would justify more detailed priorities being set for the urban design approach for this Project (addressed in Chapter 7.5 and 7.6 below).

**(iii) Closer, taller noise walls than existing close to residential properties and shared paths**

Viewpoint 65 is taken from the Koonung Creek trail and shared user path at the rear of properties fronting Eram Road, Box Hill North. This land is elevated substantially above the

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<sup>394</sup> Submitter 619.

current freeway alignment, with a pedestrian overpass nearby to the west connecting this area with the Koonung Creek Linear Park north of the freeway.

Residents submitted that the impacts on their outlook and enjoyment of their properties would be excessive due to the movement of the noise wall far closer or up to their common boundaries (potentially at height of eight metres), removing established trees and potentially relocating the shared user path to 'inside' the freeway reservation. Viewpoint K illustrates a backyard outlook from one of these dwellings.

The LVIA rates the visual impact as 'medium' at both Year 0 and Year 10 largely due to the number of expected viewers and the capacity for only partial screening of the noise wall by landscaping.<sup>395</sup>

The IAC recommends that, wherever possible, the Project should avoid placing noise walls and other tall structures on or near the boundaries with residential private open space. As can be seen in the photomontages, this has the capacity to be visually oppressive especially when combined with potential overshadowing impacts and the removal of vegetation. The IAC acknowledges that some residents were concerned that shared use paths (associated with noise walls) being closer to their properties may result in vandalism or other anti-social behaviour, however, on balance, the IAC considers that greater benefits would be realised with the greater separation of tall structures.

Likewise, wherever possible, shared paths should be provided as a buffer between residential properties and the freeway. This would provide a greater buffer with these properties, most of which have conventional and highly valued back gardens and would reduce the direct impacts of overshadowing. Mr Begg and other witnesses supported this recommendation for Eram Road.

The IAC considered recommendations from some residents in this location and more generally on the south side of the Eastern Freeway to 'push' the freeway expansion footprint further north. On balance, it considers that this has the potential to result in more widespread community disbenefit because it could reduce the values of intact linear open space on the north side of the freeway which include established native vegetation.

Borlase Street and its surrounds is another important example of the potential for high visual impact from the Project. Viewpoint 22 depicts the existing open parkland outlook from residences cut back to a landscaping strip beside a noise wall (estimated 4 metre high). This was assessed in the LVIA as 'high' at Year 0 but considered to reduce to 'medium' at Year 10 with more advanced landscaping.

Residents in the area strongly opposed this rating of impact. They considered that the impact would be profound, submitting that the visual impact would be extreme over both the short and long term because their properties would be separated from the parkland outlook and amenity that attracted them to the area in the first place. Like other submitters

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<sup>395</sup> A photomontage was prepared after the LVIA at the IAC's request, in Document 57a.

they expressed a high level of concern that they were “*victims in the name of progress*” since their green space was effectively being appropriated for the benefit of others.

The IAC supports the concerns of Council and local residents that it is a significant impact to lose access and visual outlook over adjacent open space altogether. The IAC agrees that it is important to maintain all functions and uses of local open space (even if areas are reduced). This is unlikely to be reasonably achieved in this location in the current layout although this would be improved somewhat if the alternative plan proposed by the Proponent was pursued.

This leads the IAC to recommend that fundamentally different infrastructure design should be explored for this part of the corridor as a priority to reduce the severity of impacts, especially given the amenity and social impacts that this area would be likely to endure if used for a TBM launch site.

#### **(iv) Elevated infrastructure near residential properties and open space**

Examples above have considered the potential for elevated infrastructure around the Bulleen Road/Eastern Freeway interchange. The proposed viaducts were referred to by some residents as “*an eyesore*”.<sup>396</sup>

There are many other instances where this type of infrastructure could be expected along the Project corridor, including for shared paths and pedestrian overpasses. While the location and design of these facilities is still indicative only, a series of photomontages illustrate the capacity for visual impact at close range.

One example is the Watsonia powerline easement (Viewpoint 12) which is a wide grassed and landscaped corridor adjacent to residential properties near the Watsonia Neighbourhood Activity Centre. It would potentially be affected by a shared use overpass, relocated transmission towers and a high noise wall. This was considered ‘high to medium’ impact.

Sellars Street, Watsonia North (Viewpoint 6) adjacent to the existing Yando Street underpass is another example where a significant change to existing conditions could be expected. Extensive vegetation removal from the adjacent reserve is likely and a high noise wall and elevated shared use path could be constructed. The LVIA identifies the initial impact as ‘medium, from this parkland and ‘low’ at Year 10 given the potential for landscaping. A subsequent photomontage was prepared at the request of the IAC and tendered at the Hearing, reproduced in Figure 29.<sup>397</sup>

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<sup>396</sup> Submitter 25.

<sup>397</sup> Within Technical Note 57a.



**Figure 29** Photomontage viewpoint comparison, existing and year zero, Sellars Street Watsonia<sup>398</sup>

Many submissions and witnesses at the Hearing highlighted the importance of maintaining long distance views to the Dandenong Ranges from the Watsonia Neighbourhood Activity Centre. They pointed to the potential for a multi-level car park as depicted in the Reference Design as having potential to negatively impact these viewlines and public outlook.

Some submitters and witnesses urged the Project to consider sensitive design techniques for this structure, especially since road excavation was likely in the area. They suggested that this structure should be at least partially underground.

The IAC accepts that this is an important viewline that should be retained in Project design, at least from some public vantage points. Innovative design should be considered for this car park facility to maximise its useability (already being oversubscribed at present) while providing opportunities for value capture including potential community use at upper levels as suggested by submitters.

<sup>398</sup> Tabled document 57a, pages 3 – 4.

**(v) Views to ventilation stacks and related equipment**

The LVIA notes that there is potential for medium to high visual impact in connection with the two currently proposed ventilation stacks and related equipment. This infrastructure will be required to service tunnel components of the Project, although their size, form and location have not been finally determined. At this stage, the ventilation stacks are expected to be in the order of 40 metres high, with associated buildings up to 15 metres high.

The Proponent pointed to proposed EPRs and the UDS which would call for sensitive design of these structures to better integrate with their settings, either as recessive elements or sculptural and artistic elements (noting they have been depicted in modular form only in the photomontages).

One example of this potential for impact is from residential properties on Greensborough Road, Yallambie, opposite the Simpson Barracks (Viewpoint 17). The viewpoint is taken on an oblique angle from the opposite footpath, but impacts could be more direct from residential properties on the west side of Greensborough Road, particularly as the Reference Design also proposes the removal of a significant band of vegetation in this location. The visual impact is rated as 'medium' for Year 0 (with a clear anti-throw screen depicted) and 'low to negligible' at Year 10 since landscaping would partially screen views to infrastructure.

Residents were concerned that this outlook would change substantially, since they currently have a natural, forested outlook to the front portion of Simpsons Barracks and adjacent VicRoads land including mature trees.

Although there is capacity for some future replacement tree planting, it is likely that all existing trees and vegetation within the Project boundary would need to be removed for the proposed cut and cover tunnel construction. A common concern from submitters and ecological experts more broadly was that it would take decades for trees and vegetation to regrow to comparable conditions. Residents and the Councils also pointed to the inherent constraints of vegetation being able to minimise views from structures of this size and nature.

The IAC considers that the introduction of a ventilation structure and associated works in this location would result in a radical change to the existing outlook for residences across Greensborough Road. If this was demonstrated to be a suitable location having regard to all other relevant considerations, it would be important for associated infrastructure to be recessed into the topography as much as possible and for directions in the UDS to be followed to achieve a high quality urban design outcome for the ventilation stack. Extensive integrated replacement tree planting and landscaping would also be required.

**(vi) Visual impacts on open space and recreation facilities**

The LVIA accepts that some of the Project's highest likely visual impacts will be generated where infrastructure will be visible from or impinge on open space and recreation facilities. It identifies Bulleen Park as a key example.

**Bulleen Park area and nearby schools**

There are numerous viewpoints in the LVIA that give an indication of potential impact from roadways and ventilation infrastructure. The Bulleen Park front oval is potentially identified

for the ventilation stack at the proposed southern portal (potentially 40 metres high), with associated structures and equipment (up to 15 metres high) in addition to tall flood walls of up to 9 metres. This would be combined with views to potentially elevated parts of the roadway with noise walls and anti-throw screens in some locations. It also became evident at the Hearing that the visual impact of works to Bulleen Road were likely to be heightened by the notable increase in the level of Bulleen Road along this stretch of the corridor.

A high proportion of schools in the Project area made submissions about the sensitivity of this land use in operational, visual and other capacities. Marcellin for example, was particularly concerned about the potential effect of the works on student enrolments, including the potential for a service or bypass Road that would remove its current Bulleen Road frontage presentation.

Viewpoints 35, 36 and 37 depict the potential visual impact on users of Bulleen Park facilities and from sports grounds and premises associated with Carey (west side of Bulleen Road) and Marcellin (east side of Bulleen Road).

The LVIA rates this impact as ‘high to medium’ at Year 0 reducing to ‘medium’ at Year 10 from closer viewlines such as the back of the Dunshea Oval at Carey. It considers the proposed noise wall, elevated corridor and ventilation stack would be “*visually dominant*” with a “*significant visual change in the landscape and loss of open space*”.<sup>399</sup>

It assessed the impact from Marcellin raised central parking/courtyard area as ‘medium’ for both timeframes given the visual dominance of these structures and high viewer numbers (despite having ‘medium’ sensitivity). Mr Wyatt conceded that the visual impact would increase with proximity and could be ‘high’ from the front portion of the school grounds.

The Veneto Club property (Viewpoint 34) is another site from which the impacts of proposed infrastructure is likely to be ‘high to medium’ at Year 0 given the prominence of the ventilation stack and equipment and the effect of tree removal. This was expected to reduce as replacement landscaping would grow.

On balance, although the effects on Bulleen Park and nearby schools would be significant, the IAC considers that these visual effects can be reasonably sustained for this State-significant Project as a whole subject to high quality design and landscaping. It regards the use of this active open space and outdoor learning facilities as having greater capacity to absorb visual impacts compared with natural landscapes and parkland closer to the Yarra River or residential properties for example.

In response to cross-examination for Marcellin, Mr Begg agreed that it was important for the design of the southern portal and associated infrastructure to respond to the needs of local schools.

Public and private schools are key stakeholders and occupiers of land in the precinct that stand to be affected by the Project. As yet, their presence and particular operational needs

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<sup>399</sup> Page 78, Technical Report H.

have not explicitly been documented in the UDS. This needs to be explicitly documented in the UDS and processes for consultation included in the EPRs.

### Koonung Creek

There are a number of areas adjacent to the Eastern Freeway widening where existing open space will be consumed by the Project and new structures introduced. Many submissions emphasised the strongly held values of this linear open space.

These are represented by Viewpoints such as 52 and 58 at the Koonung Creek Wetlands (although there are more direct vantage points which were not selected). A noise wall and new shared overpass are suggested for this location (Viewpoint 58), in place of the existing award-winning pedestrian bridge. Increased shadowing would also be expected. The LVIA identifies the visual impact as ‘high’ in both Years 0 and 10 since large amounts of existing vegetation would be removed with consequential reduction in open space. New structures would be expected to dominate the view. This is illustrated in Figure 30.

#### Koonung Creek Wetlands

looking towards the city



Figure 30 Artists impression Koonung Creek Wetlands<sup>400</sup>

Mr Wyatt recommended that the relevant EPR include a requirement to recreate a naturalistic environment. Overall, the LVIA concluded that *“the Project is unlikely to have an impact on the landscape value of the Koonung Creek Valley landscape character area as the characteristics it is valued for such as established vegetation and the linear open space would either be retained or enhanced”*.<sup>401</sup>

<sup>400</sup> Tabled document 22, page 47.

<sup>401</sup> Page 171, Technical Report H.



This contrasts with responses in Mr Begg's evidence. He described this area as a linear parkland that is "*much loved and much used*", with a strong focus on needing to protect its amenity. When asked by the IAC about the adequacy of the spatial allocation in the Reference Design, he conceded in effect that 'the Koonung Creek Valley keeps a lot of us up at night' and that it would take innovation and 'push and pull' to achieve acceptable outcomes for this area.

The Proponent submitted that "*while there may be scope for narrowing in the final design for the Eastern Freeway it is unlikely that there will be a marked overall reduction. It would not be responsible to submit otherwise. That said, NELP agrees that all components of the Project should be efficiently designed*".<sup>402</sup>

The IAC does not agree with the overall conclusions reached in the LVIA for this part of the Project. These areas have a high visual and social sensitivity, even if they constitute modified environments or have been revegetated relatively recently (in the case of the Valda Avenue wetlands along the Koonung Creek). An inherent part of the enjoyment of these spaces is the sense of retreat one gets when walking through them.<sup>403</sup> The IAC has serious concerns about the potential Project footprint on landscape and character values for parts of the Koonung Creek reserve.

The consequences of significant widening of the Eastern Freeway would be significant for visual, social and environmental reasons, given the currently open vegetated setting of many of these public open space reserves (even given their current adjacency to the freeway reserve). In many cases, these reserves will be substantially diminished in area, affected by unavoidable extensive tree removal and the introduction of much more significant infrastructure.

The IAC considers that the wide intrusion of the Project boundary poses a risk to the liveability and natural values along this part of the alignment that are difficult to justify. It is evident that unless this boundary changes, significant impacts will occur regardless of high-quality urban design because of the nature of the interfaces.<sup>404</sup> This is a by-product of the constrained nature of this sensitive corridor and highlights the need to balance all conflicting objectives to achieve an acceptable outcome.

Therefore, the IAC recommends that the Project footprint along the Eastern Freeway be reduced adjacent to valued open space where possible in accordance with EPR LP1; particularly where reasonable separation cannot be achieved with adjacent residential properties as outlined above. Part of the driver for the wide footprint in this area is the use of a CD design. While the IAC has considered this in terms of design and safety in Chapter 3, it is not satisfied that the appropriate balance has been achieved between maximising design and minimising environmental and social impact that the EES process requires.

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<sup>402</sup> Paragraph 196, closing submissions Document 434.

<sup>403</sup> Even though background freeway noise is noticeable.

<sup>404</sup> This would be added to if design was not environmentally and contextually sensitive, noting that the circuitous design of the proposed pedestrian bridge (Figure 20 [near, but not from VP58]) in the Reference Design would in the IAC's opinion result in high visual impact.

### **(vii) Visual impacts during construction**

The LVIA assesses this risk of ‘medium’ consequence, mainly due to the number of adjacent residences and long viewing periods. It notes the very substantial areas adjacent and near the proposed alignment identified in the Map Book for potential construction compounds. Much of this is sited on land currently used by the community for public open space. The land take for construction compounds in the Koonung Creek Valley is depicted as a potential 78 hectares, with the Yarra River Valley construction land take potentially 31 hectares.<sup>405</sup>

Residents were greatly troubled by both the visual impact (including vegetation removal) and the amenity impacts likely to flow from construction compounds on open space and near residential properties and community facilities. Many of these concerns were compounded by the number of years these areas would be required for construction.<sup>406</sup>

The EES notes that construction compounds are likely to be surrounded by solid walling, with potential views of equipment, materials and stockpiles. For TBM launch sites, for example, large acoustic sheds, cranes, water tanks and other tall structures will be required for substantial periods of time.

The IAC also acknowledges that another notable visual impact derives from the replacement of currently open, landscaped parkland outlooks with construction compounds, such as across Borlase Reserve and the Koonung Creek Linear trail on the south side of the Eastern Freeway.

Considering the amount of land required near sensitive uses, the take up of existing open space, the prospect of elevated infrastructure and the likely time schedule, the IAC considers that the EES underestimates the visual impact of construction compounds.

Beyond this, amenity impacts and impacts on open space and recreation facilities are assessed in Chapter 5.7 (Social). In that chapter, the IAC makes consolidated recommendations pertaining to the siting and approval of construction compounds to minimise their overall impacts.

### **7.3.3 Discussion**

The IAC agrees with Mr Wyatt that visibility of itself does not necessarily equate to a negative impact. Notwithstanding, based on the assessment above, the IAC finds that if a similar road alignment is adopted with key elements of the Reference Design, there is potential for significant visual impact and poor urban design outcomes in a number of areas. Most of these concerns arise in respect of residential and open space interfaces.

The IAC considers it uncertain at this stage whether the EPRs have the capacity to achieve a meaningful minimisation of the Project footprint, either in general or for any particular areas of sensitivity.

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<sup>405</sup> Recognising both the limitations of the Reference Design and the prospect of alteration or refinement through EPRs. These spaces include Banksia Park, Bulleen Park and, to a lesser extent, Yarra Bend Park.

<sup>406</sup> Technical Note 44 concerning proposed use of construction compounds (Document 166).

In summary, the IAC observes a strong correlation between the land take for the Project alignment and potential visual and landscape impacts. This is especially the case because of the constrained nature of the corridor - with residences, road infrastructure, parkland and vegetation all co-existing.

The real challenge for this Project is to successfully resolve the tension between road functionality, infrastructure and safety with community liveability and landscape character in this sensitive corridor.

While the UDS is structured around a legitimate suite of aspirations for a major project such as this, it is evident to the IAC that what is lacking is an upfront guide as to how to reconcile these competing aspirations for this particular project. The IAC recommends that overarching principles derived from the concepts identified below be developed and incorporated into the UDS to guide the *prioritisation* of key urban design directions. For example, this should include express 'caveats' on proposed Design Direction 4 'Provide a great experience for road users' to defer to the higher need to protect place values and create context-sensitive design.

The IAC recommends that the following guiding principles be developed and adopted early in the design process to resolve this tension:

- the Project boundary should be pared back to the maximum extent possible, especially where it intrudes into open space, including parkland and recreational areas (including school grounds), with a priority on avoiding vegetated areas of open space and established trees
- all infrastructure including roadway design should be designed to be as 'lean as possible' subject to being sufficiently safe.
- elevated structures should be avoided close to residential properties and parkland.
- the location for overpasses and shared paths should be carefully sited having regard to the need to balance accessibility, a streamlined footprint and the interests of adjacent residents
- engineering considerations should be used to recess structures into their topography and physical setting wherever possible
- all road design needs to make suitable allowance for replacement landscaping as early as possible, both within and outside the Road Zone, recognising the significance of the natural environment and green character of this corridor
- it is vital to optimise all structures including noise walls, particularly those which are close to residential properties and sensitive areas of open space, to achieve an acceptable outlook and amenity. This calls for a balance between practical effectiveness, smart design and careful siting.

#### **7.4 Adequacy of the draft Urban Design Strategy and integration with the Reference Design**

The Incorporated Document would require a UDS to be prepared to the satisfaction of the Minister for Planning before detailed plans could be approved and development for the Project could start. Urban Design and Landscape Plans must depict the final form of the

Project and explain how they accord with the UDS.<sup>407</sup> All use and development for the Project would need to be carried out in accordance with the approved EES.<sup>408</sup>

The UDS must include an urban design vision, principles and objectives and location-specific design directions or themes including design guidelines.<sup>409</sup> The draft UDS exhibited with the EES would generally respond to this direction but will need to be updated and refined before approval.

#### 7.4.1 Evidence and submissions

Much criticism was made in submissions about the Reference Design to the effect that it was ‘engineering driven’ and ‘land hungry’ rather than integrating *all* aspirations for the Project into a functional design.

In his evidence, Mr Czarny evaluated key elements of the Reference Design and was critical of the fact that they ‘failed’ to achieve numerous components of the UDS (although he acknowledged that these documents do not share a common function).

The Proponent submitted that it was not appropriate to critique the Reference Design against the UDS. Rather, it suggested it was reasonable to incorporate its contents in the tendering and design phases to enable innovative and targeted design solutions to emerge.

Mr Begg gave evidence for the Proponent that the UDS essentially represents the ‘design brief’ for architectural, urban design and landscape responses for the Project. He considered it appropriate for this document to establish largely performance-based requirements but considered that the principal role of the reference document was to consider issues of “spatial allocation” - to act as a “proof of concept”. However, he could not confirm whether the Reference Design had already minimised the Project footprint to the extent possible.

His evidence was that most of the urban design input would occur at the next stage of procurement since performance requirements in the UDS would need to be afforded higher priority than the Reference Design. He also noted that a ‘secondary consent’ process was proposed that would facilitate public and stakeholder input into final urban design and landscape plans.

In principle, the use of a UDS was accepted by Mr Czarny as appropriate as a basis for a Reference Design, noting that this model had been successfully applied in the design of recent local and international infrastructure initiatives, including the Level Crossing Removal (LXRA) and Melbourne Metro Rail Projects. He also regarded the overarching principles and objectives within the UDS as “*indisputable*”. However, he also explained that much of its content was “*high-level, adaptable and generic – so as to be meaningful to almost any project of metropolitan magnitude*”.<sup>410</sup>

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<sup>407</sup> Clause 4.7.2 and 4.7.3.

<sup>408</sup> Clause 4.6.6.

<sup>409</sup> Clause 4.6.

<sup>410</sup> Page 9 of his report, Document 30b.

Mr Czarny sought “more robust and place specific guidance” to be included in the UDS to ensure appropriate responses to what he regarded as the very distinctive interface sensitivities along the Project alignment. While he considered the three character areas identified in the UDS namely, the Ridgeline, Yarra River Valley and Koonung Creek Valley were accurate descriptions of extensive landscape areas, their scale did not suitably recognise or provide guidance for the varied urban and natural conditions encountered along all parts of the proposed corridor. This was thought to diminish the opportunity for the Project to respond suitably to local contexts.

Mr Begg pointed to components of the draft UDS including maps and text that detail local requirements for specific geographic areas and regarded them as providing suitable direction.<sup>411</sup> He also considered that many of the maps in the Map Book represent what is in effect a sub-precinct such as Watsonia, the Simpson Barracks, Borlase Reserve and the like. He identified particular ‘hot spots’ for further consideration as including the Koonung Creek Valley, the proposed southern portal, Watsonia and the Manningham interchange.

Mr Axford did not take issue with the proposed character areas but considered that other areas of the UDS warranted greater resolution. In his first report to the IAC, he suggested that key opportunities and challenges should be identified for stakeholders. While he noted that detailed design examples were provided in Section 7, there was no guidance in the document as to which specific locations would benefit from these approaches. For example, he queried whether a land bridge form could be applied to proposed pedestrian links in Watsonia and Macorna Street.<sup>412</sup> He also considered the UDS should identify specific locations where it was preferable for the Project footprint to be minimised.<sup>413</sup>

Mr Czarny took this notion further and suggested that schematic drawings and urban design frameworks should be prepared for key areas of the Project in collaboration with councils and stakeholders before more detailed plans could be approved. This was supported in submissions on behalf of BBW and Manningham Councils.

## **7.4.2 Discussion**

### **(i) Integration with the Reference Design**

There is clearly a tension between functional requirements for a major infrastructure project such as this (including transport capacity) and the need to satisfy urban design outcomes. This was acknowledged by witnesses such as Mr Begg and by the Proponent itself.

The IAC considers it essential for Key Direction 1 on page 15 of the draft UDS to be given full effect in all aspects of Project planning and delivery. It provides that:

The project must demonstrate the effective integration of engineering and urban design to deliver an innovative and balanced design solution.

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<sup>411</sup> For example, pages 27 to 81.

<sup>412</sup> Page 4 of his report, Document 7.

<sup>413</sup> Page 6, Document 75.

This key direction requires proponents to move beyond a business as usual and engineering centred approach to design and address challenges using a multi-disciplinary, innovative framework of three-dimensional design thinking.

This approach will be vital to integrating the proposed Project within its established setting and to minimising negative impacts on local communities.

That said, the IAC is not persuaded by the Proponent that it is reasonable to approach the preparation of the Reference Design separately or in advance of responding to the UDS. This effectively defers its proper role in the process.

In the IAC's opinion, it is vital for the objectives and detailed content of the UDS to inform and direct the preparation of a Reference Design, since the Reference Design is put forward as one way in which the Project could feasibly be delivered. It is artificial to suggest that the Project could meet Project objectives without urban design as a lynchpin.

The alternate suggestion by Mr Axford, that elements of the Reference Design could be cross referenced in the UDS, is somewhat impractical having regard to the capacity for final plans to depart from the Reference Design in material respects.<sup>414</sup> The IAC considers that the UDS needs to guide all elements of design from the outset, not the other way around.

The IAC accepts the evidence of Mr Czarny that the Reference Design would fall short of meeting key elements of the draft UDS. Perhaps more fundamentally, the fact that the Reference Design has not integrated all elements of the UDS, suggests to the IAC that it cannot be said that the process to date has involved a true 'multi-disciplinary design' as espoused by the Proponent throughout the Hearing.

Ultimately, the Proponent's choice to proceed with a more general UDS combined with a Reference Design by which to assess the potential effects of the proposal has created uncertainty as to whether and how the evaluation objective will be achieved. Therefore, the IAC cannot have any reasonable confidence that a road design such as the one proposed in the Reference Design has capacity to effectively meet all elements of the proposed UDS, even in its reasonably generic form. It expects that significant modification would be needed to achieve most stated objectives.

In the IAC's view, it would be necessary at a minimum to introduce Urban Design Framework Plans or similar for key interchanges, activity centres and interfaces for pre-approval, as a prelude to the preparation of more detailed designs. Recommended locations are addressed in Chapter 7.5 below.

The Councils suggested that this could be achieved through specification in the Incorporated Document. The IAC regards the plans themselves as comfortably within the domain of the UDS, but the requirement to provide and approve Urban Design Framework Plans or similar would need to be reflected as a further requirement of the Incorporated Document.

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<sup>414</sup> Also, the IAC has not been able to identify a suite of well designed or sited infrastructure elements in the Reference Design that would be worthy of referencing in the UDS.

## **(ii) Content of the draft UDS**

The draft UDS incorporates many well-established principles of urban design that have been used to achieve positive outcomes for major recent projects in Victoria. The question is whether the document should be supplemented by greater levels of detail to guide the preparation of detailed design plans for this Project.

The IAC considers that the delineation of the three character areas provides a generally sound representation of key elements within these landscapes, especially those that may interact with an infrastructure project of this type and scale.

While the IAC accepts evidence and submissions for the Councils that character areas within each municipality are actually far more nuanced and varied than outlined in the UDS, it is not persuaded that there is any necessity to provide further delineation within that document having regard to its role and the fact that this is a substantial linear infrastructure project. This generally aligns with the position expressed by Mr Axford in his final report<sup>415</sup> and the evidence of Mr Begg.

The IAC is also concerned that in separating character areas into finer levels of detail, there is capacity to lose sight of 'bigger picture' planning and urban design necessary for a project of this scale. That is not to say that individual contexts are less critical to urban design outcomes than higher level objectives – just that the IAC prefers a solution that would require such contexts to be considered in a more targeted way when:

- preparing Urban Design Framework Plans for key interchanges, activity centre and interfaces (in line with its recommendations below), or
- when assessing whether aspects of design would meet Project principles, objectives and priorities for areas it traverses.

This would also combine with the further guidance provided by the IAC above (Chapter 7.3.3) for necessary Project design priorities and approaches to the use of specific types of infrastructure.

## **7.5 Which locations warrant pre-approved Urban Design Framework Plans in the UDS?**

The IAC made a number of recommendations earlier in this chapter about its preferred design approach for infrastructure at various sensitive interfaces and along identified linear corridors.

Certain other locations were highlighted in submissions and evidence as being poorly resolved in the Reference Design. The IAC has filtered these to identify key locations it considers would benefit from an Urban Design Framework or adequate alternative addressing land use and design constraints and opportunities more holistically before more detailed plans could be approved. These locations are largely the same recommended by Mr

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<sup>415</sup> Document 354 (SA3).

Begg as warranting further detailed consideration and represent refinement of Mr Czarny's suggestions.

### 7.5.1 M80/Greensborough Highway Interchange

Mr Czarny considered that the Reference Design as *“particularly convoluted and forceful in terms of its relationship with abutting residential areas”* compared with other nearby freeway interchanges such as the Hume Freeway Craigieburn Bypass and the M80-Tullamarine Freeway Interchange. He suggested that consideration could be given to using more land to the north to absorb movement paths while providing greater spaciousness to residential properties to the south.

The draft UDS addresses this area in Map R2 and includes requirements to deliver suitable features and landmarks for navigation. It also seeks well designed noise walls and emphasises replacement planting.

This is a key Project interchange or intersection (see Figure 31 below) where it will be important to consider how the roadway can be designed to integrate with its setting. The EPR relating to minimising footprint will be critical. However, the elements proposed in the Reference Design (including elevated components close to residential properties and extensive noise walls) do not satisfy the IAC that a suitable balance could be achieved.

#### M80 interchange looking south-east

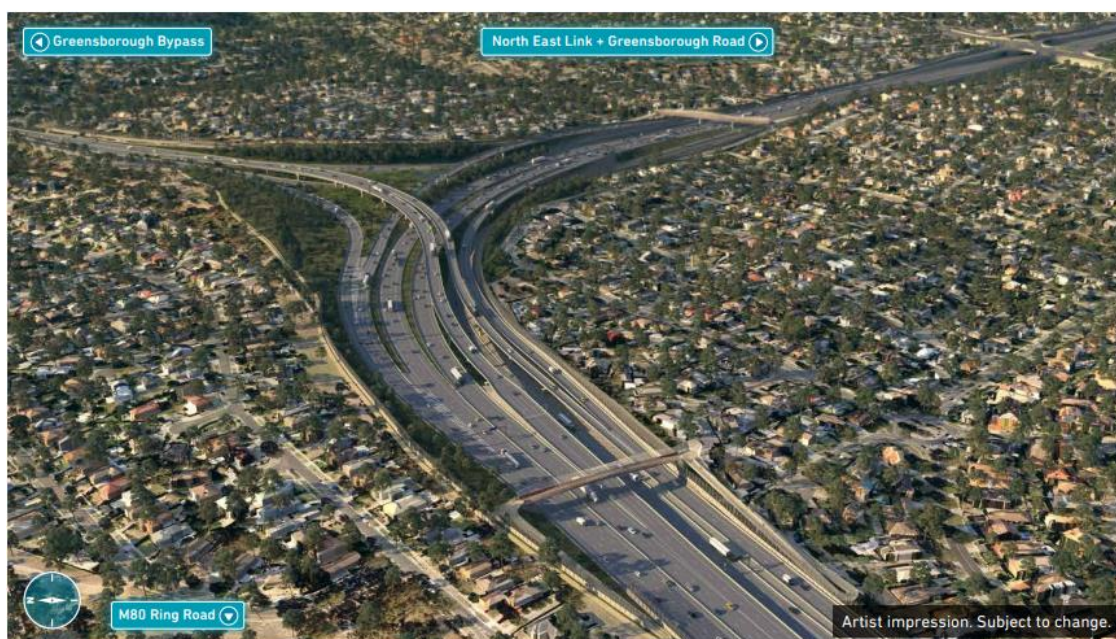


Figure 31 Artists Impression, M80 Interchange looking south-east<sup>416</sup>

<sup>416</sup> Tabled document 22, page 4.



## 7.5.2 Watsonia Neighbourhood Activity Centre

This centre is included in Map R4 of the draft UDS, with key elements being the improvement of walking and cycling paths including across Greensborough Road to better link residential areas with the centre and train station. The open space reserve to the east is identified for improvement by others.

Individuals, business groups and Banyule made detailed submissions about potential effects of the Project on the Watsonia Neighbourhood Activity Centre. They referred to the earlier adopted strategic document *Picture Watsonia* but advised that the centre was required to re-think its future as a result of the Project. A further report was prepared on behalf of Banyule Council (partly funded by the Proponent) titled *Watsonia Neighbourhood Activity Centre Concept Plan* (Ethos Urban, 7 May 2019). This was released publicly for the first time during the Hearing at the IAC's request.<sup>417</sup>

In general, Watsonia stakeholders were concerned that the Project would perpetuate the existing divide between the two sides of the centre and the two adjoining residential suburbs which had been worsened by Greensborough Road widening works. Submitters including Council also emphasised the poor quality environs at present by virtue of the transmission easement and issues associated with poor connections to the Hurstbridge train station (with its railway line in a deep trench).

A key element of the Reference Design is a six lane trenched freeway with land bridges connecting parts of Greensborough Road. The Proponent also provided an alternative road layout for this centre during the Hearing in an attempt to provide improved urban design outcomes.<sup>418</sup> Key changes involved providing direct access to Elder Street and the railway car park.

Mr Czarny expressed the view about this centre that:

The urban design implications of the Project in this location are serious. Watsonia NAC is a small but important node in the neighbourhood network supported by the Principal Public Transport Network (PPTN - rail and bus) servicing a radial catchment that will continue to be important. . .

The proposed outcome will in my view significantly influence the local movement patterns of users to and from the NAC and exacerbate an already problematic relationship between retail and community activities along the length of Watsonia Road. The Project (as set out in UDS Principles 2, 3 and 8) has the potential to substantially improve relationships between different land-uses and connectivity within the neighbourhood more broadly.<sup>419</sup>

The IAC agrees. It considers that the social and business effects of an open trenched freeway would be particularly problematic for this centre, although it notes that the Reference Design is but one way the Project could be delivered.

<sup>417</sup> This document does not appear to have been the subject of community consultation or Council refinement.

<sup>418</sup> It also provided Technical Note 47 explaining the approach to Elder Street, the trench and land bridges.

<sup>419</sup> Page 27, Document 30b.

One viable option may be to consider a capped or mined tunnel to provide opportunity for residual surface land to be used actively by the public. These and other matters relating to centre connectivity and development should be considered holistically, with the benefit of strategic planning work to date and input from stakeholders. An Urban Design Framework Plan would provide this opportunity.

In general, the IAC considers that the requirements in Item 1A of the UDS provide a sound basis for some aspects of this plan moving forward (and are generally consistent with localised strategic work) but that they need to be addressed as central components from the outset. Far greater direction is needed for how this could be achieved and what measures could be facilitated by Project works or in partnership with others using the Project as a lever.

### **7.5.3 Borlase Reserve and the Lower Plenty Interchange**

The IAC found in Chapter 5.7 (Social), that the proposed take up of Borlase Reserve both during and after construction would not meet the relevant social evaluation objective or reasonable community expectations. At the same time, it appreciates the traffic imperatives to upgrade the Lower Plenty Intersection to an interchange, including to provide access to North East Link.

The Proponent provided an alternative road layout for the IAC's consideration which would rationalise this interchange and local access somewhat. However, its concerns about the imposition into Borlase Reserve and surrounding residential properties would still occur.

A basic Urban Design Framework or detailed three dimension options analysis should be undertaken for this interchange to identify if improved outcomes meeting all relevant objectives could be realised.

A longer tunnel, as suggested by various submitters and experts would realise significant benefits. Mr Begg identified a wide variety of improved urban design outcomes that could flow from an extended tunnel including more space at grade resulting in more amenity for the community, greater opportunities for parkland, reinstatement of the Banyule Creek and better crossings at Greensborough Road.

The IAC would support further investigations of extending the TBM tunnel, recognising that additional significant benefits would also be conferred on Simpson Barracks to protect its ecological values in line with its findings in Chapter 6 (Ecology) and social and business imperatives for the Watsonia Neighbourhood Activity Centre in Chapters 5 and 4.

### **7.5.4 Manningham/Bulleen Roads Interchange**

This interchange was a substantial focus in evidence and submissions. It is addressed in Map Y1 of the draft UDS.

Ms Marshall (Manningham traffic engineering expert) identified significant deficiencies in the Reference Design approach. In land use and urban design terms, Mr Czarny advised:

There are in my view serious 'land use and development' implications in the reorganisation of the land (settlement patterns and function) – which currently serves an important employment and economic development function for the City. While I understand separate planning process will determine an appropriate response for the

land in question, it is in my view imperative that the designation of the land in terms of its use, format and scale (for a highest and best use) is resolved as part of any evaluation process.<sup>420</sup>

Mr Axford also highlighted the potential for the Reference Design for the Manningham Road Interchange to generate excessive loss of land use in the long term. He suggested that the Proponent explore a tighter design for this interchange together with an exploration of replacement or reinstatement uses of residual land.<sup>421</sup>

It particularly concerns the IAC that the Reference Design proposes to subsume the entire BIP without determining from the outset what the minimum Project demands would be, and that the potential future use of this land is left to an entirely separate process. Chapter 4 considers detailed evidence in respect of this sub-precinct.

Detailed submissions were also made about the inclusion of this land in the Draft Yarra River Bulleen Land Use Framework Plan and its potential to support an enhanced cultural precinct, potentially of international significance. Further consideration should be given to the positive opportunity to provide a more direct physical and cultural linkage between Heide MOMA and this area as well as other strategic planning aspirations.

In Chapter 5.8 (Social), the IAC also recommended that every opportunity be made to retain the River Red Gum at Bridge Road as well as BAAG (in its current location or another suitable location).

The interaction between all of these issues warrants the preparation of an Urban Design Framework Plan for this location to achieve acceptable outcomes. The IAC suggests that the Framework Plan focus particularly on the matters identified in Item 4A namely, future land use opportunities and the interface with the Yarra River and parkland to the west.

It also particularly supports Ms Marshall's suggestion that it is important for the current road design to provide for suitable future access and to maximise footprint of the residual area (post construction) as a crucial forward step for the future planning of this interchange.

### **7.5.5 Bulleen Road/Eastern Freeway Interchange**

This interchange is addressed in Map Y3 of the draft UDS (see Figure 32 below). In general, the IAC supports these broad-brush requirements, but their proposed delivery will raise particular urban design challenges given its setting. Another key challenge is the need to suitably manage road levels to provide acceptable interfaces with properties along Bulleen Road and to minimise effects on open space.

In the preceding sub-chapter, the IAC identified significant visual and landscape impacts that are likely to flow for residential land, schools and open space as a result of the potential design of this interchange. Detailed evidence was also given about access to the proposed Park and Ride facility and the road network, as discussed in Chapter 3 (Traffic).

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<sup>420</sup> Page 27, Document 30b.

<sup>421</sup> Page 5, Document 75.

## Eastern Freeway interchange

looking north



Figure 32 Artists Impression, Eastern Freeway Interchange<sup>422</sup>

These factors and the centrality of this interchange to the Project justify the preparation of an Urban Design Framework Plan to provide a more integrated assessment for the approach to be taken to road and urban design. Current planning scheme directions such as policy in Clause 22.10 (Bulleen Gateway Policy) will be a relevant input.

As one option, it may be appropriate to consider the suggestion of Mr Czarny to:

...[amalgamate] this junction to with the southern portal design (as represented in Bulleen Park) as a single and centralized infrastructure 'hub' – including ground level and submerged (subterranean) roadways and ramps with a centrally aligned ventilation structure...<sup>423</sup>

## 7.6 Capacity for improved urban design outcomes as part of the Project

### 7.6.1 Submissions

In Key Direction 1, the draft UDS seeks to ensure:

- Future land use change opportunities are identified and created, and long term opportunities for the place and community are considered
- Project outcomes are aligned with the plans and strategies being developed and delivered by others...
- Public benefits and long-term returns are maximised.

<sup>422</sup> Tabled document 22, page 6.

<sup>423</sup> Page 34, Document 30b.

The draft UDS establishes 19 Place-specific requirements which provide for site responsive design, enhanced connectivity and access and integrated landscaping.

The IAC enquired of the Proponent and its witnesses which enhancement opportunities were proposed to be taken up by the Project. Throughout the Hearing, the Proponent drew the IAC's attention to elements of the UDS requiring a high standard of design and seeking enhancement of the road user and community experience, such as by the creation of gateway features, landscaped land bridges, Park and Ride facilities and the like.

In some instances, the Councils and other submitters were concerned that works had been identified in the UDS as 'complementary, to be provided by others' when they considered them central to the responsible and integrated delivery of the Project. The Councils' closing submissions also included a detailed list of complementary projects identified for each municipality.<sup>424</sup> They submitted that this was important to achieve an overall net community benefit, having regard to the fact that those closest to the alignment would be most affected.

Some experts recommended that certain elements that had been identified as complementary in the UDS be converted to 'core' Project requirements, such as element 4A in Map Y1 to provide sensitive interfaces with Yarra Valley Parklands.

Eram Road residents for example requested direction for the Project to consider relatively low cost but important public works upgrades to adjacent open space to offset the impacts of reducing their open space and bringing tall walls close to their property boundaries. These measures included upgraded public lighting for the shared user path and surrounds, a water fountain, public seating and the like.

Other submitters considered that the Project should formalise an integrated public art program, establishing partnerships with local artists, cultural institutions and Traditional Owners. For example, Sanctum Studio outlined a vision for a dynamic public art program titled *Art, Community, Place*.<sup>425</sup> Heide MOMA also explained that it was well positioned to provide input to these elements of the Project. Mr Axford confirmed in his evidence to the IAC that this was an important component of place-making for this Project. This is also highly relevant to ensuring appropriate presentation of the ventilation stacks which, as Marcellin College submitted, need to be designed "in the round".

Another issue raised in submissions and evidence related to the capacity for Water Sensitive Urban Design (WSUD) techniques to be adopted for the Project to provide integrated benefits for open space near the road alignment. The Proponent advised that this was addressed in the draft UDS for example, at Item 18 of the Detailed Requirements and Benchmarks.

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<sup>424</sup> Documents 374g-j.

<sup>425</sup> Document 306.

## 7.6.2 Discussion

The second, equally important part of the relevant evaluation objective seeks to *maximise* the enhancement of landscape, visual and open space values where such opportunities exist.

Given the limitations of the Reference Design and the absence of integrated urban design features, it is difficult to assess the extent to which this part of the relevant objective would be met.

It is important for the future of communities who will be affected to be treated fairly and also to perceive that they are treated fairly in the delivery of major State infrastructure projects.

In the IAC's opinion enhancement works would be a necessary 'trade-off' for the amenity that will be lost along substantial parts of the corridor alignment and to create a positive Project legacy. In the IAC's experience, it is also important to maximise and enhance urban design and visual amenity for improved community 'buy-in' for the Project.

Even acknowledging that the Reference Design does not as yet incorporate detailed urban design components, the IAC is concerned that it and the EES documentation including the UDS do not sufficiently identify prospects for enhancing identified values within the road corridor and broader area.

This is another distinct advantage of the IAC's recommended requirement to prepare Urban Design Framework Plans or similar before final plans can be prepared and approved for key interchanges, activity centres and interfaces. These would readily highlight (in a more sophisticated and integrated way than the broad conceptual maps attached to the draft UDS) urban design improvements to be explored in Project design as well as identify which authorities could collaborate to progress these opportunities. The IAC recommends that the Place-specific Requirements in the Draft UDS be updated in future to reference other initiatives that will derive from Urban Design Framework Plans to be prepared.

Beyond this, the Place-specific Requirements should also be reviewed to ensure all elements that relate to the way the Project is delivered are within core mandatory Project requirements, rather than being expressed as complementary (and therefore optional). For example, the following are considered vital to mitigating effects of the Project in line with reasoning in relevant chapters of this report:

- Items 4A (enabling future land use opportunities for the Manningham interchange, built form to interface sensitively with adjoining parkland)
- 5A (habitat infrastructure to affected areas under Manningham Road bridge which are within the Project boundary)
- 5B (implementing WSUD around Yarra Valley Parklands) of Map Y1

## 7.7 Process for approval of plans and involvement of the Urban Design Advisory Panel

The Incorporated Document proposes that all Urban Design and Landscape Plans to be submitted to the Minister for approval be provided to the UDAP and relevant councils for consultation, in addition to other notification mechanisms.<sup>426</sup>

The Proponent advised that a UDAP had already been established early in the inception period for the Project, with ongoing input into matters such as the development of the Reference Design for the Project.

### 7.7.1 Evidence and submissions

The Proponent submitted that numerous award-winning major projects in Victoria such as the Craigieburn Bypass and East Link had been delivered without an underlying requirement to comply with a UDS or to be referred to a UDAP.

Mr Begg appeared to place high reliance on UDAP inputs to achieve acceptable Project design responses. He expected that body's input would continue for the Project's full life cycle.

Mr Axford, considered that UDAP's involvement would provide a "sound basis" for assessing the implementation of the UDS and would in part mitigate the lack of specific design directions for key locations or opportunities.<sup>427</sup>

By contrast, Mr Czarny expressed doubts about the process set out in the exhibited draft Incorporated Document to deliver consistently acceptable architectural, urban design and landscape outcomes. In his professional experience observing UDAP processes, he considered that conventional project imperatives such as traffic engineering and cost inputs tended to be given priority in these assessments.

The Councils and some key stakeholders including Marcellin were concerned that there was no formalised role proposed for them on UDAP. Although the proposed EPRs refer to ongoing communications with the Community Liaison Group, it is far from clear that this will extend to providing input or feedback on the design process.

The Proponent did not express a strong view on this issue, other than to confirm that the process needed to be workable and to provide suitable capacity for tenderers to offer innovative designs.

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<sup>426</sup> Clause 4.7.4(a). Mr Begg explained in his evidence (Document 24q) that:  
The Urban Design Advisory Panel... come[s] from various government authorities and statutory bodies including the North East Link Project, Office of the Victorian Government Architect, Department of Transport (VicRoads and Public Transport Victoria), VicTrack, Melbourne Water, Parks Victoria, Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) and Local Government Authorities. The primary focus of UDAP is to ensure that the proposed design achieves the design intent that is outlined in the performance-based requirements. On projects of this nature, UDAP is typically involved in all phases of development including design, documentation and construction.

<sup>427</sup> Page 4, Document 75.

### 7.7.2 Discussion

There are many interrelated considerations that come to the fore when evaluating urban design considerations for major infrastructure projects. It is inevitable that relevant considerations also include what is achievable and how certain inputs might be costed.

A combination of factors lead the IAC to recommend that at least Councils and land or waterway managers (where they are different) be given a genuine 'seat at the UDAP table' beyond those included already. Principally, these relate to the sensitivities within this particular corridor and the fact that their input will be crucial in contributing to and assessing Urban Design Framework Plans for key interchanges, activity centres and interfaces given the lack of certainty about design, land use and consequential outcomes at this stage of the EES process.

At the same time, the IAC supports consultation with relevant landowners such as the schools in certain EPRs that may affect them but does not consider that they should be included in UDAP assessment processes specifically given their more confined interests.

## 7.8 Consolidated findings

The IAC finds:

- The Project will result in irrevocable changes to the built and natural environment along this corridor. However, the use of a Reference Design for the Project has limited the capacity for members of the public as well as experts and the IAC to fully assess the landscape and visual impacts of the proposal.
- The IAC observes a strong correlation between the Project land take for alignment and potential visual and landscape impacts.
- The proposed ventilation stacks and noise walls will be a new, prominent feature in their settings and high-quality design input will be required to achieve an acceptable visual and landscape outcome.
- Fundamental elements of the Reference Design are problematic for the future of the Watsonia Neighbourhood Activity Centre. The Project needs to afford a higher priority to integrated design to avoid unreasonable impacts. There is strong potential for community benefit if approached sensitively.
- The proposed Eastern Freeway is a substantial component of the Project and is likely to leave inadequate room for the suitable treatment of interfaces with nearby residential properties and open spaces in certain locations, especially the Valda Avenue wetlands along the Koonung Creek. This has the potential to be compounded by elevated infrastructure likely to be needed to support the expansion of this roadway.
- The Project will necessitate extensive tree and vegetation removal and this will create a significant impact on the landscaped character of many areas within the Project corridor including highly valued areas of parkland and public open space. There is conjecture as to whether remaining space for replanting trees would be enough to reinstate a suitable outlook and landscape character for locally affected areas in the medium to long term.



- Although the UDS provides sound guidance for future design subject to refinement, the Project has not yet demonstrated its ability to meet key aspects. In addition, there is little meaningful up-front commitment as part of the Project to enhancing visual amenity and public realm values as sought by the Scoping Requirements.
- The lack of certainty about built form outcomes and the current challenges for the design of key interchanges and activity centres justifies a further process being built into the approvals system for this Project through the Incorporated Document.
- Neither the Reference Design nor the EES documentation including the UDS sufficiently identify prospects for enhancing identified values within the road corridor and broader area. This should be considered as another element within the Project.

## **7.9 Recommendations**

The IAC makes recommendations for improving the Urban Design outcomes for the Project including Project design elements and the content and approval pathway for critical urban design documents.



## 8 Noise and vibration

Surface noise and vibration impacts are addressed in the EES in:

- Chapter 11 Surface noise and vibration
- Technical Report C Surface noise and vibration

Vibration effects from tunnelling are addressed in the EES in:

- Chapter 12 Tunnel vibration
- Technical Report D Tunnel Vibration.

The IAC acknowledges that noise and vibration may impact on health and this is explored in the Health and wellbeing chapter.

The draft evaluation objective for health, amenity and environmental quality (including tunnelling) is:

To minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the project.

The following evidence was called in relation to surface noise and vibration impacts:

- The Proponent – Darren Tardio of Enfield Acoustics
- Manningham – Tom Evans of Resonate Consultants
- Marcellin – Tom Evans of Resonate Consultants
- BBW Councils – Frank Butera of Arup
- Carey – Christophe Delaire of Marshall Day Acoustics

A statement of evidence regarding tunnel vibration was provided by Dr Heilig on behalf of the Proponent but no evidence was called at the Hearing.

Evidence regarding health effects associated with noise was given for the Proponent by Dr Jackie Wright of Environmental Risk Sciences Pty Ltd.

A conclave on surface noise and vibration was held on 25 July 2019.<sup>428</sup> The joint conclave report set out agreed positions and comments relating to noise and vibration EPRs.<sup>429</sup>

Suggested EPR amendments were provided by several submitters including BBW and Manningham Councils, Marcellin, Carey, community groups and individual submitters.

The EES states that noise and vibration from construction would be managed with site specific Construction Noise and Vibration Management Plans (CNVMP). These plans would be developed during the detailed design phase and include a framework of mitigation measures adopted from the *NSW Roads and Maritime Services Construction Noise and Vibration Guideline* (CNVG) August 2016.

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<sup>428</sup> Attended by the Proponent - Darren Tardio, Manningham – Tom Evans, Marcellin – Tom Evans, BBW Councils – Frank Butera and EPA – Mark Buret.

<sup>429</sup> Document 120 Noise and Vibration Conclave Report 31 July 2019.

For operational noise, the EES has adopted noise limits based on the *VicRoads Traffic Noise Reduction Policy (2005)* (VicRoads TNRP) for Category A (residential) and Category B (school) buildings. The Proponent has adopted a 10 metre maximum height for noise barriers along the road alignment. The EES demonstrates that with appropriate barriers installed and suitable road surface material, the adopted noise limits would be achieved at most of the affected dwellings. Where the noise limit cannot be achieved using noise barriers, the Proponent has proposed to install at-property treatments such as upgraded glazing, insulation and mechanical ventilation systems.

The EES presented predicted operational noise levels to public open spaces along the alignment but, a target noise level or limit for these spaces was not proposed since this was not proposed by the VicRoads TNRP.

## 8.1 Key issues

The IAC considers the key issues are:

### (i) Construction:

- management of construction noise impacts to residential areas and non-residential areas especially in relation to Unavoidable Works
- whether construction noise level targets for active open space shown in the EPR are suitable for school recreational grounds
- construction vibration effects to residential and sensitive non-residential properties.

### (ii) Operational:

- road traffic noise limits to residential areas and whether a night-time limit is warranted
- road traffic noise limits to upper storeys of residential building
- the application of at-property treatments and relevant noise targets when such treatments are installed
- road traffic noise to non-residential areas including schools and private and public recreation areas and open space
- noise modelling of non-Project roads to achieve traffic noise objectives
- the appropriate maintenance period for operational noise
- whether on going, real time noise monitoring in the operational phase should be installed.

## 8.2 Construction noise management to residential areas

Construction noise impacts to residential areas are proposed to be managed via EPR NV3 and NV4. The Proponent's Version 5 EPR NV3 specifies applicable construction noise guideline targets drawn from Victorian EPA guidelines, Australian Standards and NSW guidelines. EPR NV3 states:

- Unavoidable Works must be verified by the Independent Environmental Auditor for each instance they are undertaken as per NV4 and include the following.

NV3 then lists a number of activities to be considered as Unavoidable Works. EPR NV4 directs the preparation and implementation of a CNVMP and provides the minimum information requirements for inclusion in the plan.

Minor changes to NV3 and NV4 were recommended by the EPA and discussed at the conclave with all changes being agreed to by all experts. Mr Evans also recommended minor changes to EPR NV3 and NV4 which were also generally accepted by the conclave.

### **8.2.1 Evidence and submissions**

In his evidence Mr Tardio advised that the Project's construction noise management adopted a hybrid approach using EPA and NSW guidelines as used for the Melbourne Metro Rail Project. In this case, the EPA Publication 1254 requirements are mandatory.

Mr Evans considered the construction management controls to be generally acceptable. He suggested amendments to the EPR:

- that the CNVMP be updated on a regular basis
- that affected stakeholders be consulted.

Mr Butera's evidence focussed on operational levels but his written statement called for additional detailed modelling of potential construction scenarios prior to works commencing to understand the severity of impact.<sup>430</sup>

In closing submissions, the Proponent acknowledged the challenges associated with managing construction noise but stated that the proposed management regime would be robust and appropriate.

The EPA submitted comments regarding the Proponents Version 5 EPR concerning Unavoidable Works.<sup>431</sup> The EPA considered that defining Unavoidable Works in the EPR would be inconsistent with the requirement for the Independent Auditor to verify what may ultimately be Unavoidable Works.

BBW and Manningham Councils acknowledged that construction impacts could generally be managed through appropriate EPRs<sup>432</sup> but expressed some concern as to the effectiveness of the proposed mitigation measures, and the lack of clear triggers for implementing such measures.

Many submitters especially around Borlase and Koonung Creek Reserves were concerned about noise impacts. Some residents around Borlase Reserve had previously experienced noise impacts from construction activities associated with Level Crossing Removal works in 2018, which only intensified their concerns with this Project due to the much longer time frames and scale of proposed works.

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<sup>430</sup> Document 28e, expert statement of Mr Butera.

<sup>431</sup> Document 435 EPA comments on EPRs.

<sup>432</sup> Document 374a BBW and Manningham closing, paragraph 494.

## 8.2.2 Discussion

The EPRs provide a detailed approach to construction noise management. The IAC recognises that the proposed management regime for construction noise is comprehensive and appropriate for normal construction activities which are not defined as Unavoidable Works. If normal construction activities occur at night-time, they must be inaudible at the nearest residential dwellings.

### (i) Unavoidable Works

In relation to the management of noise from Unavoidable Works, the IAC shares the concerns of the EPA and Councils.

The Proponent revised EPR NV3 shown in the EES,<sup>433</sup> deleting the reference to what Unavoidable Works “may include” and instead providing a list of works defined as Unavoidable Works. The Proponent commented that the change was made in relation to the submission of the EPA.<sup>434</sup>

However, the EPA did not accept that Unavoidable Works should be predefined. Rather, the independent auditor must verify what constitutes Unavoidable Works.

The IAC agrees that Unavoidable Works should not be predefined as this may be misused by contractors to justify extending noisy construction activities into night-time periods for convenience. The verification of what works are unavoidable is best left to the independent auditor.

The IAC also agrees that it is necessary to identify clear triggers and mitigation measures for Unavoidable Works noise issues.

EPR NV4 requires that the CNVMP be developed in consultation with the EPA and relevant Councils. Councils suggested changes to EPR NV4 to include a further reference to mitigation measures for Unavoidable Works. The IAC considers that the inclusion of this reference may provide additional certainty to the management of noise from such works.

### (ii) Borlase Reserve

The Proponent has identified Borlase Reserve as a potential TBM support site.<sup>435</sup> If used for this purpose, the IAC does not believe that measures in the EPRs alone will suitably protect residents around Borlase Reserve from high levels of construction noise. The proposed support site would include the TBM launch location, overhead cranes, water treatment plant, grout plant, spoil conveyors and loader/excavator areas for haulage trucks. An indicative layout is shown in Figure 33.

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<sup>433</sup> Technical Appendix C page 170.

<sup>434</sup> Submitter 600 and Document 168 EPA Submission.

<sup>435</sup> Document 166 Technical Note 44.

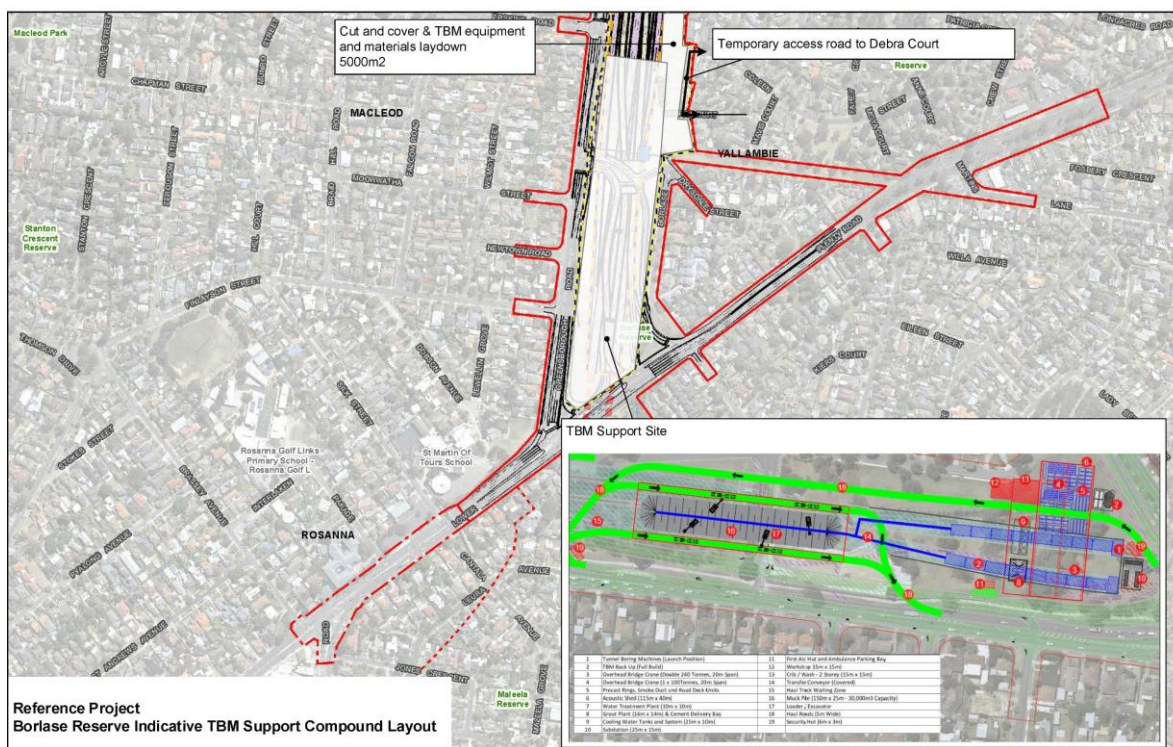


Figure 33 TBM northern launch site<sup>436</sup>

Although it is proposed to construct an acoustic shed around some of the plant, this support site is extremely close to residential dwellings with little to no effective buffer distance. It is clear from the Proponent’s Version 5 EPRs that the works at the TBM site are considered as Unavoidable Works. Residents in the vicinity of Borlase Reserve will potentially be affected by continuous (day and night) noise, for many years.

If works at this site are classified as “Unavoidable” by the independent auditor, the requirement for construction noise to be inaudible pursuant to EPA 1254 will not apply. The IAC acknowledges that the Proponent and its expert Mr Tardio confirmed that noise mitigation measures will still be required for Unavoidable Works but there are currently no clear triggers in place to determine when mitigation will occur. In addition, the IAC questions whether effective and appropriate mitigation will be available as no detailed material or management around this critical issue was presented.

Apart from reducing noise levels from construction activities, the additional mitigation options contained in the NSW document<sup>437</sup> referenced by the EPR include measures such as specific notification, respite offers and alternative accommodation.

The IAC has significant reservations whether measures involving respite or alternative accommodation would be feasible or reasonable. Works are likely to occur at this location

<sup>436</sup> Figure C 3 from tabled document 166 attachment C, page 3.

<sup>437</sup> New South Wales Roads and Maritime services Construction Noise and Vibration Guide 2016 (CNVG) Appendix B and C.

for several years and there are likely to be in excess of 100 dwellings within 200 metres of the reserve.<sup>438</sup>

The IAC considers that alternative options must be explored including the following:

- relocating the proposed TBM support site to an area less exposed to residential dwellings; perhaps in conjunction with a longer tunnel option as suggested elsewhere in this report.
- implementation of an extensive voluntary acquisition scheme for dwellings affected by noise from the TBM support site if this option proceeds.

### **8.2.3 Findings**

The IAC finds that:

- Unavoidable Works should not be predefined in the EPR.
- A clear framework for the control of noise from Unavoidable Works should be included in the EPR.
- The impacts of construction noise on the community surrounding Borlase Reserve are likely to preclude its use without substantial mitigation, including a voluntary acquisition scheme. Alternative locations for the Borlase Reserve TBM support site should be considered in the first instance.

## **8.3 Construction noise targets for school recreational grounds**

Marcellin school grounds and the Carey Sports Complex are located near the Bulleen interchange and part of the Marcellin sports grounds is proposed to be used for construction compounds. EPR NV3 provides construction noise management levels for classrooms in schools and also for active and passive recreation areas. No specific target is presented for school recreational/sporting areas. The EES did not assess noise from indicative construction compounds in this area<sup>439</sup> to the Marcellin and Carey buildings or grounds.

### **8.3.1 Evidence and submissions**

Mr Evans' evidence was that construction noise at the Marcellin school buildings was unlikely to be excessive and that impacts to the classrooms could be appropriately managed by the EPRs. Mr Evans recommended some changes to the EPR in his written statement.<sup>440</sup>

For the Marcellin school grounds which are used for teaching purposes and sporting activities, Mr Evans accepted that the construction noise target of  $L_{Aeq}$  65dB active open space was suitable.

Carey submitted that the Bulleen Campus was used for after school and Saturday sport and also for physical education studies and other learning programs such as outdoor science classes. Mr Delaire gave evidence that as buildings such as the pavilion were sometimes

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<sup>438</sup> IAC estimate.

<sup>439</sup> Document 166 Technical Note 44 Figure C5.

<sup>440</sup> Document 31b Expert witness statement of Mr Evans (Marcellin College).



used for teaching purposes, all buildings on the site should be recognised as a classroom for the purpose of applying construction noise management levels. In addition, as the sporting fields were also used for teaching purposes, the more stringent target applied to passive recreation areas should be adopted.

Under questioning by Counsel Assisting the IAC, Mr Tardio acknowledged that if school grounds were typically used for teaching purposes then a more stringent criteria could be applied. He also accepted that the changes to EPR NV4 as recommended by Mr Delaire would be appropriate.

### **8.3.2 Discussion**

Construction noise targets for classroom in schools, passive and active recreational areas are provided in EPR NV3. Although the EES did not specifically model noise from construction compounds to Marcellin and Carey Sports Complexes, the Proponent submitted<sup>441</sup> that this modelling would need to be undertaken as part of the preparation of a CNVMP as directed by EPR NV4.

The IAC considers it reasonable to expect that Carey Sports Complex buildings as well as all recreational grounds used by the school could be used for teaching purposes. The delivery of classes requires audible speech communication and as such construction noise must be controlled to appropriate levels to allow for continued use of the entire Carey sports complex and Marcellin playing fields throughout the construction timeframe.

To facilitate this, the passive recreational construction noise management levels should be adopted for all school grounds along the Project alignment.

The IAC notes that in respect to noise from operation of the Project, the Proponent amended the relevant EPR to include Carey Sports Complex buildings as noise sensitive receptors to be considered in the application of road noise limits. Therefore, it is consistent to also protect these buildings from excessive construction noise.

### **8.3.3 Findings**

The IAC finds that:

- Construction noise management levels for passive recreation areas should apply to all school grounds along the Project alignment.
- The buildings at the Carey Sports Complex should be considered as classrooms when applying construction noise management levels.

## **8.4 Construction vibration effects**

The EPRs nominate guideline targets for construction vibration relating to:

- protection of utility assets
- human comfort

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<sup>441</sup> Document 434 Proponent Closing.

- protection of structures

The guideline targets used are consistent with other major projects such as West Gate Tunnel Project and Melbourne Metro Rail Project.

#### **8.4.1 Evidence and submissions**

No evidence was called in relation to vibration impacts. A written statement of evidence was provided by Dr John Heilig.<sup>442</sup>

There were a number of submissions from residents concerned with potential structural damage to their homes from construction vibration effects.

Dr Heilig's written statement suggested that appropriate EPRs in conjunction with the required CNVMP would be key to the Project and that vibration impacts could be addressed to ensure that amenity of residents and integrity of assets would be protected.

Heide MOMA<sup>443</sup> was particularly concerned about potential vibration affecting its art collection and outdoor sculptures.

Mr Evans' written statement for Manningham noted that the EPR relating to vibration criteria applicable to Heide MOMA required clarification to confirm that human comfort targets would be applied.

#### **8.4.2 Discussion**

The choice of construction vibration thresholds for building damage and human comfort was not questioned by any party.

Several submitters requested that condition surveys be performed to ensure that damage caused by vibration would be rectified. EPR GM2 requires baseline monitoring at areas which may be susceptible to damage by ground movement.

The Proponent accepted the recommendation of Mr Evans and EPR NV8 relating to vibration criteria for human comfort now includes a reference to the Heide MOMA for both internal areas and the external sculpture garden. The IAC notes that EPR NV4 which requires the preparation of a CNVMP must also consider Heide MOMA. The vibration criteria applicable to it are similar to those adopted for the NGV International and NGV Australia in the Melbourne Metro Rail Project.

#### **8.4.3 Findings**

The IAC finds that:

- Proposed vibration guideline thresholds in the EPR are appropriate and consistent with other major infrastructure projects.
- The amended EPR relating to the Heide MOMA will assist in protecting both human comfort and artwork at this location.

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<sup>442</sup> Document 24m Expert Statement of Dr John Heilig (Proponent).

<sup>443</sup> Submission 643.

## 8.5 Road traffic noise limits

The scoping requirements relevant to road traffic noise for the Project included the following:

Analyse potential for traffic noise levels to be exceeded during the day and night time periods and compare predicted traffic noise levels in the year of opening of the project and ten years hence according to criteria under the VicRoads Traffic Noise Policy 2005 (or any subsequent updates to this policy) and relevant criteria from the World Health Organisation Night Noise Guidelines for Europe 2009.<sup>444</sup>

The EES provided an assessment of road traffic noise against the VicRoads criteria which apply between 0600 – midnight for Category A buildings (residential) and between 0600-1800hrs for Category B buildings (schools and noise sensitive community buildings).

The EES also considered the World Health Organisation (WHO) night-time noise guidelines for Europe 2009<sup>445</sup> and the WHO Environmental Noise Guidelines for the European Union 2018.<sup>446</sup> The EES considered that the WHO 2009 interim night-time target of  $L_{\text{night}}$  55dB is equivalent to the adopted VicRoads criteria<sup>447</sup> and is essentially achieved by the Project. The EES stated that the WHO 2018 target of  $L_{\text{night}}$  45dB is extremely stringent and would be mostly impossible to be achieved.<sup>448</sup> It is likely that properties abutting existing major roads in Melbourne would not meet this standard.

### 8.5.1 Evidence and submissions

Both Mr Tardio's and Mr Evans' evidence considered that it was unnecessary to adopt a night-time limit for road traffic noise, citing a lack of precedent and policy in Victoria.

Mr Butera believed that consideration of a night-time noise limit for road traffic noise would *"bring Victoria into the 21st century"*. His written evidence suggested that an applicable limit would be the same as the NSW Road Policy<sup>449</sup> of 50 dB  $L_{\text{Aeq9hour}}$  (2200-0700hrs) for residences adjacent to new roads. Under cross examination by the Proponent, Mr Butera stated that an assessment of night-time noise should have been performed but stopped short of confirming that criteria should be applied.

BBW and Manningham Councils highlighted the limitations of the VicRoads TNRP and quoted the Minister for Planning in his assessment for the Mordialloc Bypass:

Lack of a contemporary traffic noise policy in Victoria hinders the assessment of major road construction projects.<sup>450</sup>

<sup>444</sup> EES Technical Report C Table 2.1 page 3.

<sup>445</sup> Document 386c WHO Guidelines 2009.

<sup>446</sup> Document 386d WHO Guidelines 2018.

<sup>447</sup> EES Technical Report C page 139.

<sup>448</sup> EES Technical Report C page 140.

<sup>449</sup> NSW Road Policy, Department of Environment Climate Change and Water March 2011.

<sup>450</sup> Document 374a p165 paragraph 515 and DELWP, Mordialloc Bypass – Minister's Assessment of Environmental Effects (Jun 2019) page 44.

BBW and Manningham Councils also questioned whether the limits provided in the VicRoads TNRP were actually designed to be protective of health or simply based on a judgment of what could feasibly be achieved.<sup>451</sup>

Many submitters including Mr Munro<sup>452</sup> and Mr de Bruyn<sup>453</sup> requested that the WHO guidelines be taken into account and that a night-time criterion be applied.

Mr Munro submitted that the VicRoads criteria was not based on any health objectives or research and proposed that a night-time limit of 50 dB  $L_{Aeq9hour}$  (2200-0700hrs) be adopted. This is consistent with the NSW Road Policy noise limit recommended in the written evidence of Mr Butera.

The Proponent submitted that night-time design criteria have not been applied to any road project in Victoria<sup>454</sup> and although a night-time criterion was recommended by the IAC considering the West Gate Tunnel Project, the Minister for Planning ultimately rejected the adoption of such criteria in that project.<sup>455</sup>

## 8.5.2 Discussion

There is no doubt that the VicRoads TNRP is considered out of date by the Minister for Planning. This was reaffirmed in the Minister's decisions for both the West Gate Tunnel and Mordialloc Bypass Projects.

The EES considers that the interim night limit of the WHO 2009 guidelines of 55dB  $L_{night}$  will be achieved as a result of compliance with the proposed VicRoads limit of 63 dBA  $L_{1018hour}$ . Both Mr Tardio and Mr Evans agreed with this analysis.

The analysis in respect of the WHO 2009 limit firstly converts the limit to Australian conditions by applying a façade correction and then relies on a diurnal difference of 5-6 dB in noise level between the  $L_{1018hour}$  and the  $L_{Aeq}$  (8 hour).<sup>456</sup>

The IAC is unsure of the accuracy of the estimation and questions whether the quoted diurnal difference which has been estimated from actual measurements to date will hold true in the long term, especially as the Project is espoused to be a major freight route. Freight trucks could potentially be drawn to the Project during non-peak times during the night. If traffic volumes during the night-time period are substantially different from existing traffic levels, then the anticipated decrease in night-time noise levels may not occur.

Mr Tardio in his written evidence considered the analysis to be conservative as the WHO 2009 target of 55 dB  $L_{night}$  is based on the yearly night-time noise exposure and considers general accordance with the WHO interim guideline to be a good outcome for the Project.<sup>457</sup>

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<sup>451</sup> Document 374a Council closing paragraph 517.

<sup>452</sup> Submitter 275 Mr Munro.

<sup>453</sup> Submitter 784 Mr de Bruyn.

<sup>454</sup> Document 434 NELP Closing p 102 para 399.

<sup>455</sup> Document 434 NELP Closing p103 para 403.

<sup>456</sup> Technical Report C page 139.

<sup>457</sup> Document 24d Mr Tardio statement of evidence page 10 of 22.

The IAC notes that the NSW Roads Policy criteria of 50 dB  $L_{Aeq9hour}$  recommended in the written evidence of Mr Butera (which is the same numerical limit proposed by Mr Munro) is not a mandatory limit. Instead the NSW Policy states that:

Although it is not mandatory to achieve the noise assessment criteria in this RNP, proponents will need to provide justification if it is not considered feasible or reasonable to achieve them.

Noise measurement results provided in the EES<sup>458</sup> indicate that there are properties along the road alignment where this proposed limit of 50 dB  $L_{Aeq9hour}$  is not currently achieved with existing levels of traffic noise.

The IAC considers that adopting a night-time target as a mandatory limit will provide some certainty for residents in areas affected by road traffic noise.

The limit proposed by Mr Butera and Mr Munro of 50 dB  $L_{Aeq9hour}$  may not be appropriate as a mandatory limit given that this noise level is already exceeded at many of the dwellings where baseline data was obtained for the EES. In addition, the NSW Road Policy does not intend this to be a mandatory limit.

However, the adoption of the NSW Road Noise Policy and assessment criteria as intended by the policy (not a mandatory criteria) could be considered and is likely to result in a better noise environment and health effects outcome for affected residents along the Project alignment. The NSW Road Noise Policy is a comprehensive document which considers WHO guidelines as well as other research in setting assessment criteria, something lacking from the VicRoads TNRP.

In the absence of adequate Victorian policy guidance, the IAC considers it is reasonable to adopt a policy document from another state for the construction noise management regime for this Project, similar to the approach taken in the Melbourne Metro project.

When asked by the IAC whether it was appropriate to consider policy documents from other jurisdictions if Victorian policies fell short of the mark, Mr Tardio replied in the affirmative.

Alternatively, an interim approach until the VicRoads TNRP is updated, would be to adopt the WHO 2009 guideline as a mandatory limit for this Project. The IAC considers this approach to be reasonable and feasible for the following reasons:

- the scoping requirements for this Project included a requirement for an assessment against the WHO 2009 guidelines
- the Proponent and its expert considered that the 2009 target would be achieved if the VicRoads operational noise limit of 63 dBA  $L_{1018hour}$  were met. Mr Evans also agreed this to be the case.

The IAC considers this mandatory limit to be the minimum standard to be achieved. The adoption of this target as a mandatory limit should not preclude use of the NSW Road Policy and the noise targets in this policy to further improve the noise amenity along the Project area.

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<sup>458</sup> Technical Report C, Appendix E noise measurements.

### 8.5.3 Findings

The IAC finds that:

- A night-time road traffic noise target should be adopted as a mandatory limit to provide certainty to affected residents.
- A mandatory limit based on the WHO 2009 guidelines (corrected for Australian Conditions) is an appropriate minimum standard for this Project until the VicRoads TNRP is updated.
- Further consideration should be given to adopting the noise targets and methodology of the NSW Road Policy.

## 8.6 Road traffic noise limits to upper storeys of residential building

The VicRoads TNRP limits are only applied to the ground level of dwellings, potentially resulting in elevated noise levels at the upper storeys of multi-level dwellings.

### 8.6.1 Evidence and submissions

Neither Mr Tardio or Mr Evans thought that noise criteria should apply at upper levels of dwellings citing a lack of precedent and policy in support.

Mr Butera recommended that noise targets at upper levels should be required and acknowledged that it may be difficult to comply with upper storey limits. However, he believed that an assessment of noise to upper levels should have been performed and reported in the EES.

Dr Wright considered noise limits should apply at both lower and upper levels of a dwelling.

The combined Councils submitted that the VicRoads TNRP does not explicitly state that only the ground floor areas need to be assessed and noted that Appendix F to VicRoads Road Design Note RDN06-01<sup>459</sup> states that all levels of dwellings should be considered. Rather, the restriction of assessing only the ground floor has come from an interpretation of the recommended compliance measurement method in Appendix C of the Road Design Note which directs the measurement be made at the lowest habitable level.<sup>460</sup>

The Proponent highlighted different approaches in recent road projects pointing out that the IAC in the West Gate Tunnel Project recommended a requirement to consider upper levels which was rejected by the Minister for Planning, but the IAC for the Mordialloc Bypass did not. The Proponent also warned of the consequences of applying such criteria may result in higher noise walls, increased overshadowing and visual impacts.<sup>461</sup>

<sup>459</sup> VicRoads Design Note 06-01 – Interpretation and Application of the VicRoads Traffic Noise Reduction Policy 2005.

<sup>460</sup> Ibid and Document 374a BBW and Manningham closing submission p169 para 530c.

<sup>461</sup> Document 434 NELP Closing paragraph 410.

## 8.6.2 Discussion

The EES does not assess whether the VicRoads noise limit will be achieved at upper level floors of dwellings affected by future traffic noise. However, it does perform this assessment for the WHO 2009 interim night-time noise guideline.

The EES states that:

In total there are 319 ground and upper level floors, equating to 211 unique buildings, which exceed the objectives detailed in the 2009 Interim WHO Guidelines.<sup>462</sup>

As the EES equates the WHO 2009 criterion to the VicRoads criterion,<sup>463</sup> by default the results of this assessment provide a general indication of the maximum number of dwellings where noise at upper floors that may not meet the VicRoads limit. The 211 unique buildings identified is only a small percentage of the total number of dwellings (11,476)<sup>464</sup> included in the assessment.

In response to cross examination by the Proponent, Mr Butera indicated that where residential buildings are constructed adjacent to a freeway, VicRoads would ordinarily require the developer to include noise attenuation to upper levels.

The combined Councils' submission made reference to Appendix F of the VicRoads Design note. This Appendix requires mitigation to all levels of a building where off reservation treatments are proposed.

The IAC considers the application of noise limits to second storey dwellings is warranted. As noted by the Councils, bedrooms are often located at upper levels of dwellings and night-time amenity should be protected. Dr Wright's evidence that reducing noise at night provides health benefits and this is consistent with her support for an EPR to control noise at upper storeys of dwellings.

The number of potentially affected dwellings noted in the EES is relatively small in comparison to the total number of dwellings assessed and the IAC believes that the application of a limit to the upper levels of dwellings will not pose a huge cost or impost to the Project.

Where external noise limits cannot be achieved then at-property mitigation should be provided. The appropriate level of treatment is discussed in the next section.

## 8.6.3 Findings

The IAC finds that:

- Project noise limits should apply to all levels of habitable buildings.
- At-property treatments must be investigated where external limits cannot be achieved by reasonable and feasible measures.

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<sup>462</sup> EES Technical Report C page 139.

<sup>463</sup> EES Technical Report C page 139.

<sup>464</sup> EES Technical Report C page vii.

## 8.7 At-property treatments

At-property treatments are to be installed when external traffic noise limits cannot be achieved through Project design solutions. EPR NV1 directs that at-property treatments are required “to ensure an equivalent internal level of attenuation is provided to the building”.

### 8.7.1 Evidence and submissions

At the conclave meeting, Mr Tardio recommended that there needed to be a reference to internal noise targets for the application of at-property treatments and suggested that levels consistent with the Better Apartment Design Standards be included.

In written evidence Mr Butera suggested adopting the levels provided in Australian Standard AS2107 but agreed with Mr Tardio’s suggestion made at the conclave. Mr Evans also agreed with the inclusion of the proposed internal noise targets as did Mr Munro.<sup>465</sup> The combined Councils included a reference to this internal noise limit in their revised EPR.<sup>466</sup>

While there was clear agreement about the applicable noise limit, there was some discussion as to how the need for at-property treatments would be assessed and triggered.

Mr Evans gave evidence that a clear rationale for installing at-property treatments would be required and that an independent reviewer should approve such measures. Mr Butera also expressed a desire to see clearly defined triggers for at-property mitigation.

The Proponent submitted that Mr Evans’ recommendations had been incorporated into the Version 5 EPR NV1 which required review by an Independent Environmental Auditor.

### 8.7.2 Discussion

All expert witnesses agreed that at-property treatments must allow internal noise limits to be achieved and that suitable limits are set by the Better Apartment Design Standards.

The IAC notes that although Mr Tardio made the recommendation for an internal noise target to be included in EPR NV1, the Proponent did not incorporate this into the Version 5 EPRs. The Proponent, did however, include the requirement for an independent auditor to review the need for at-property treatments as suggested by Mr Evans.

The IAC agrees an internal limit should apply and supports the use of the Better Apartment Design Standards measure. It seems reasonable that if a resident is subjected to external noise levels which exceed the Project noise limits then they can at least be assured of acceptable internal noise amenity.

The IAC also agrees that a clear process for identifying where at-property treatments would be justified is needed to ensure that such treatments are considered only after all feasible and reasonable design measures to the Project had been considered.

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<sup>465</sup> Submitter 275.

<sup>466</sup> Document 355a BBW and Manningham EPR.



### **8.7.3 Findings**

The IAC finds that:

- Internal limits set by the Better Apartment Design Standards should be adopted for dwellings where at-property mitigation is to be installed.

## **8.8 Road traffic noise to open space**

The VicRoads TNRP does not recognise public open space or recreational grounds within schools as noise sensitive areas and offers no protection from road traffic noise to these areas.

### **8.8.1 Evidence and submissions**

It was Mr Tardio's evidence that most public open space areas along the road alignment would benefit from noise reductions as a result of the Project. This was based on the installation of noise barriers as specified in the EES. The school sports grounds at Marcellin and Carey may experience increased noise levels but Mr Tardio considered the ultimate noise levels would be acceptable and there was no precedent for noise criteria for these areas. Under cross examination by Ms Morris for Manningham, Mr Tardio stated that he did not support a prescriptive noise limit for open space. He explained that the EES noise predictions based on the mitigation shown in the Reference Design resulted in a good, and in some cases better, outcomes for open spaces.

Mr Evans thought that open space – both public and private recreation areas associated with schools could be protected by either maintaining the Reference Design barrier heights or by committing to the predicted noise levels (to within 2dB) provided in the EES.

Mr Butera recommended that the noise limits for open space could be sourced from the NSW Road Noise Policy or the Project could adopt existing noise levels plus 2dB in open space areas to preserve amenity.

Mr Delaire acknowledged that the predicted operational noise levels to the Carey sports grounds would be acceptable but questioned how certainty around achieving this outcome would be provided.

The combined Councils submitted that an EPR requiring noise levels at public open spaces to not exceed those predicted in the EES should be adopted.

Many submitters were also concerned about road traffic noise to local open space areas especially along the Koonung Creek.

### **8.8.2 Discussion**

VicRoads' TRNP does not consider public open space such as parklands as a noise sensitive area and as such the EPR would not provide specific limits or mitigation measures for road traffic noise for these areas along the alignment.

For control of construction noise, both active and passive open space is recognised as a noise sensitive area so it seems reasonable to the IAC that such areas should be considered for protection from road traffic noise during operation.

Controlling road traffic noise at public open space areas along the road alignment would assist in providing a suitable noise amenity at local open spaces enjoyed by the surrounding communities. Maintaining appropriate noise levels at school recreational areas will assist in ensuring that existing activities taking place in school grounds will not be adversely affected by noise.

The IAC accepts the evidence of all the experts that the predicted noise levels provided in the EES are appropriate. Of the two methods suggested to provide certainty to the noise level outcomes provided in the EES, the IAC prefers a commitment to the predicted levels over maintaining the barrier heights and extents in the EES. As the EES is based on a Reference Design, there needs to be some flexibility in the design to allow for changes and innovations. A requirement to adopt the barrier heights and extents in the EES may preclude better designs.

### **8.8.3 Findings**

The IAC finds that:

- The predicted operational noise levels at public open space areas and school recreation grounds shown in the EES should be adopted as noise targets.

## **8.9 Noise modelling of non-Project roads**

### **8.9.1 Evidence and submissions**

Draft EPR NV1 states the following:

The combined noise from North East Link Project Roads and non-Project Roads must not be more than 2 dBA higher than the predicted traffic noise level under the design year 'do nothing' scenario. Non-Project Roads must be modelled for a distance of 100 metres from the intersection with North East Link Project Roads or to the first traffic intersection (whichever is the lesser).

Mr Munro highlighted that some non-Project roads such as Bulleen Road and Greensborough Road abutted the Project road rather than intersecting the Project road.<sup>467</sup>

The Proponent was requested by the IAC to clarify whether the section of Greensborough Road south of Watsonia Road had been modelled to demonstrate compliance with EPR NV1 and advised that Greensborough Road has been included in the analysis.<sup>468</sup>

### **8.9.2 Discussion**

The IAC is satisfied that parallel non-Project roads are intended to be included in the assessment required by EPR NV1, based on the Proponent response. However, the IAC considers the current wording of the EPR to be ambiguous.

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<sup>467</sup> Document 386a Mr Munro presentation notes.

<sup>468</sup> Document 194 Technical Note 49.

### 8.9.3 Findings

The IAC finds that:

- EPR NV1 should be amended to clarify that non-Project roads which abut Project roads rather than intersect with Project roads must be included in the noise modelling.

### 8.10 Maintenance period for operational noise

The EES road traffic noise predictions include a -3dB correction provided by using open graded asphalt (OGA) as the road surface.

#### 8.10.1 Evidence and submissions

Mr Butera's evidence focussed heavily on the proposed use of OGA and questioned whether the effectiveness of the road surface in reducing road traffic noise could be maintained over the longer term. Mr Butera suggested that in some instances the effectiveness of OGA may be lost after the first winter.

Mr Evans' evidence was that maintaining the performance of noise mitigation measures for 20 years instead of 10 years quoted in the EPR would be appropriate as VicRoads required noise barriers to be maintained for 25 years.

At the conclave, Mr Tardio agreed that a 20-year maintenance period would provide a better outcome, but it was not a standard approach.

Mr Munro submitted that the external noise criteria should be maintained for a 40-year period as this was commensurate with the expected design life of noise barriers.

#### 8.10.2 Discussion

The design life of the Project is 100 years<sup>469</sup> and noise barrier material generally has a life of 25-40 years.<sup>470</sup> The IAC believes it is reasonable to ensure that the acoustic benefit derived from the OGA surface lasts longer than the proposed 10-year period. As such, the OGA surface may need rejuvenating or replacing more frequently.

The IAC notes that a 20-year maintenance period was adopted in the West Gate Tunnel Project.

#### 8.10.3 Findings

The IAC finds that:

- Operational noise criteria must be achieved for up to 20 years from Project opening.

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<sup>469</sup> Document 346 Response to IAC.

<sup>470</sup> VicRoads Road Design Note RDN 0601.

## **8.11 Realtime noise monitoring during operation**

### **8.11.1 Evidence and submissions**

Many submitters, especially those in the vicinity of the Eastern Freeway expressed concern regarding noise levels from increased traffic along the widened alignment.

The Koonung Creek Reserve Balwyn North Preservation Group,<sup>471</sup> spoke of increased traffic noise that has occurred over the years since the EastLink Freeway has been operational. They expressed frustration about not knowing who was responsible for confirming that noise targets had been achieved and not being able to ascertain whether noise targets had in fact been achieved at their dwellings.

They requested that a noise and air monitoring station be installed in the Koonung Reserve Area with community access to its data.

In response to questions from the IAC, Mr Butera for BBW Councils recommended that this type of real time, continuous noise monitoring could be easily incorporated into the Project.

BBW and Manningham Councils also submitted by way of recommendations for a new EPR, that permanent noise monitoring stations be installed.

### **8.11.2 Discussion**

The IAC supports the installation of real time noise monitoring stations at sensitive locations along the alignment. Allowing the community to access the relevant noise level data would assist in confirming that noise limits have been achieved. The results and data would also assist in identifying where further mitigation may be required. Advances in technology have resulted in such installations being feasible and reasonable.

### **8.11.3 Findings**

The IAC finds that:

- The EPR be amended to include a requirement for real time noise monitoring stations with data being publicly available at sensitive locations along the Project alignment.

## **8.12 Recommendations**

The IAC recommends adopting the EPRs as shown in Appendix G.

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<sup>471</sup> Submission 651.

## 9 Air quality and greenhouse gas

### 9.1 Air quality

Air quality is addressed in Chapter 10 in the EES and Technical Report B prepared by GHD and Golder Associates.

The relevant evaluation objective for health, amenity and environmental quality is:

To minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the project.

The following evidence was called in relation to air quality:

- The Proponent – Mr Frank Fler of Helix Environmental
- The Proponent – Ms Kirsten Lawrence of SLR Consulting Australia (Peer review of Technical Report B)
- BBW Councils - Dr Iain Cowan of ERM
- Carey – Mr Ben Sichlau of Point Advisory

The IAC retained the services of Ms Catherine Wilson to provide it with independent advice on air quality impacts.<sup>472</sup>

A conclave was held on 25 July 2019. Participants were Mr Fler, Ms Lawrence and Dr Cowan. Ms Wilson and Dr Paul Torre from the EPA attended as observers.<sup>473</sup>

Chapter 4 of Technical Report B sets out the legislative and policy framework for air quality. Relevant instruments include:

- *National Environment Protection (Ambient Air Quality) Measure* (Air NEPM) – contains national standards and goals for pollutants
- *National Environment Protection (Air Toxics) Measure* (Air Toxics NEPM) – establishes monitoring investigation levels for air toxics
- *Environment Protection (Scheduled Premises) Regulations* – the tunnel ventilation system requires Works Approval and Licensing under the regulations
- *State Environment Protection Policy (Ambient Air Quality)* (SEPP AAQ) – adopts the requirements of the Air NEPM into Victoria; with some variations
- *State Environment Protection Policy (Air Quality Monitoring)* (SEPP AQM) – sets out the framework for managing and assessing air emissions including identifying beneficial uses.

Impacts on air quality from the Project may arise during:

- construction – from construction vehicle emissions, dust from construction activities and odour from excavated materials or sewer relocation

<sup>472</sup> Documents 6, 74 and 349.

<sup>473</sup> Document 131.

- operation – from vehicle exhaust emissions and road surface emissions from tyre and brake wear and re-entrained road dust.

Given a detailed project design is not available, the Reference Design was modelled for air quality impacts. It is important to note this is highly dependent on the outputs of traffic modelling.

Background air quality monitoring data was used from the Alphington Air Quality Monitoring Station (AAQMS). Five additional temporary AAQMS were established along the Project alignment and initial results presented to the Hearing by Mr Fleer.

The air quality assessment methodology is described in Chapter 5 of Technical Report B and essentially included:

- air dispersion modelling of tunnel ventilation
- air dispersion modelling of vehicle emissions from the Project
- assessment of the combined impact of background levels, tunnel ventilation and road based emissions.

The key findings of the air quality assessment are outlined Chapter 10 of the EES and include:<sup>474</sup>

- improved air quality along many surface roads directly related to a reduction in traffic including heavy vehicle traffic
- reduced air quality compared to a no Project scenario in some areas due to increased traffic on and around the Project. The largest increases in pollutant concentrations are predicted in the area between Yallambie Road and the M80 interchange
- pollution from tunnel ventilation systems for CO, NO and air toxics should meet relevant SEPP (AQM) criteria. Expected exceedances for particulates are acceptable because they are minor increases on existing (high) background levels; Project contribution to particulates is low
- the combined effects of tunnel ventilation and surface road emissions would meet SEPP AAQ environmental quality objectives for most pollutants except PM<sub>2.5</sub> particulates, where the background levels already exceed the objectives
- the sensitivity analysis suggests if more realistic vehicle emissions (2025) are used predicted emissions will be significantly reduced.

A summary of results from Technical Report B is shown in Table 7 for 2036 with background levels included. This uses 2020 vehicle emission factors, a conservative approach with vehicle emission at 2036 expected to be significantly lower. As noted in the report the Project contribution to these overall numbers is very small, with the majority of contribution coming from background levels, which includes all pollutant sources including industrial uses, smoke from bushfires, household heating and dust.

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<sup>474</sup> At page 10-46.

The report also notes<sup>475</sup> that the maximum figures shown occur on only two days a year for particulates and only nine hours a year for NO<sub>2</sub>.

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Table 108: Summary of results – 2036 (with background)

Year	2036					
	PM <sub>10</sub> (µg/m <sup>3</sup> )		PM <sub>2.5</sub> (µg/m <sup>3</sup> )		NO <sub>2</sub> (µg/m <sup>3</sup> )	
	24 hour average		24 hour average		1 hour average	
Road	Base	Project	Base	Project	Base	Project
Albert Street	27	26	26	26	43	60
Banksia Street	27	27	27	26	52	44
Bell Street	27	26	26	26	41	62
Bolton Street	26	26	26	25	59	55
Broadway	26	26	26	26	53	48
Bulleen Road	26	27	26	26	42	43
Chandler Highway	27	27	27	27	77	74
Dalton Road	27	27	27	27	53	56
Eastern Freeway	27	30	26	29	57	110
Fitzsimons Lane	27	26	26	26	65	56
Grange Road	27	27	27	27	82	74
Grimshaw Street	26	26	26	26	53	59
High Street	27	27	26	26	45	64
Keon Parade	26	26	26	26	51	53
Lower Plenty Road	27	26	26	26	65	53
M80 Ring Road	27	27	27	27	80	70
Main Road	26	26	26	26	60	61
Manningham Road	26	26	26	26	65	46
Middleborough Road	26	27	26	26	44	50
North East Link/Greensborough Road	18	28	16	27	52	120
Plenty Road	27	26	26	26	41	40
Reynolds Road	26	26	26	25	57	37
Rosanna Road	26	26	26	26	67	57
Station Street	26	26	26	26	65	59
Williamsons Road	26	26	26	26	66	59

Table 7 Summary of results – 2036 (with background)<sup>476</sup>

Construction impacts on air quality will depend on the detail of construction such as the location of haulage routes and construction compounds. These are proposed to be largely managed through EPRs and management plans.

<sup>475</sup> Technical Report B, page 239.

<sup>476</sup> Table 108 from Technical Report B, page 241.

### 9.1.1 Key issues

The IAC considers the key issues are:

- methodology and results
- ultrafine particulates (UFP)
- tunnel ventilation system pollution control equipment
- construction impacts.

A number of other elements the IAC considers important including in-tunnel air quality can be addressed through detailed design and implementation.

### 9.1.2 Methodology and results

#### (i) Evidence and submissions

In his evidence Mr Fler summarised the approach to the air quality impact assessment and responded to submissions from the community and others raising a range of air quality issues.<sup>477</sup>

Responses to submissions given by Mr Fler in evidence included:

- The predicted impacts of tunnel ventilation emissions are low consistent with other existing tunnels.
- Compliance with SEPP (AQM) is achieved for modelled tunnel ventilation emissions except for some exceedances of PM<sub>2.5</sub>; primarily due to background levels.
- Discrete receptors are effectively superfluous given the fine grain nature of the modelling grid.
- Use of the Alphington AAQMS for background data is appropriate; and this has been confirmed by the generally similarity in results obtained from new local AAQMS' installed.
- Submitters were concerned the valley along the Eastern Freeway would affect air quality; Mr Fler noted that topography is an important element in the model.
- If a longer tunnel was proposed additional modelling would be required to determine impacts.
- Predicted higher concentrations of pollutants at a small number of receptors (see Table 7) are largely due to background levels and are conservatively high due to the modelling approach.

Ms Lawrence in her peer review in the EES and in evidence did not identify any significant deficiencies in the air quality impact assessment.

Following the conclave, Dr Cowan for the BBW Councils identified the following items as still being in contention between him and the experts for the Proponent:<sup>478</sup>

- assessment criteria

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<sup>477</sup> Document 24f, Table 1.

<sup>478</sup> Document 210, slide 2.



- accuracy of emission estimates
- inclusion of gradients for surface roads
- dust resuspension
- influence of the introduction of electric vehicles to the fleet on dust emission levels
- importance of conversion of NO to NO<sub>2</sub>
- assessment indicates potential for exceedance of in-tunnel air quality standards
- requirement for space within the design for retrofitting of mitigation technology.

The last point is addressed later in this chapter. In relation to methodology, Dr Cowan acknowledged under cross examination by Mr Morris that the approach to modelling had been required of the Proponent by the EPA; and if there is an issue with the approach then it should be taken up with the EPA.

Dr Cowan also acknowledged under questioning that in principle the issues he has raised are capable of being addressed through additional modelling required as a detailed design is developed.

Mr Sichlau prepared a witness statement for Carey.<sup>479</sup> His concerns related largely to the methodology in the air quality assessment and impacts on Carey. Additional work done by Mr Fler and the Proponent went some way to reducing Mr Sichlau's concerns; he met with Golders on 12 July 2019 to discuss some of these issues.

Following this meeting, Mr Sichlau's remaining concerns related to additional modelling requested for Carey's sports fields, and modifications to the EPRs for construction air quality. He generally supported the EPA's suggested modifications to EPRs AQ2, AQ3 and AQ4.

The EPA provided a comprehensive submission and outlined its issues in relation to air quality and its statutory role in the WAA for the tunnel ventilation stacks.<sup>480</sup>

The EPA was involved in the development of the approach to modelling with the Proponent and thus was not critical of the approach or results in general. The EPA focused on recommendations for improvement to the EPRs. These in summary are:<sup>481</sup>

- explicit reference to best practice
- reference to appropriate experience and skills in the audit team
- the ability to retrofit tunnel ventilation pollution control equipment
- the use of SEPP (AAQ) EQOs for assessing monitoring results; rather than the trigger levels in SEPP (AQM).

EPA also submitted that the five AAQMS currently collecting data for the Project should remain, and as agreed by Mr Fler, an additional one in the vicinity of Yallambie Road should be provided. The EPA submitted they had assumed that the five locations would remain, but this may not be the case and they should be kept; with the additional station as well.<sup>482</sup>

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<sup>479</sup> Document 136e.

<sup>480</sup> Submission 600 and Document 168.

<sup>481</sup> Document 435.

<sup>482</sup> Document 168, para 64 on.

In relation to monitoring, EPA:<sup>483</sup>

...has advised the proponent consistently formally and informally that air monitoring data should be compared to the SEPP(AAQ) EQOs. Earlier projects including West Gate Tunnel have used the less stringent levels of State Environment Protection Policy (Air Quality Management) (SEPP(AQM)) – Intervention Levels – although the most recently considered transport project subject to an EES – the Mordialloc Bypass – adopts the more stringent SEPP(AAQ) EQOs (in the EPRs in the EES and before the IAC; the project has not yet been approved).

EPA noted that there have been different approaches taken in the past and asked the IAC to make definitive findings on the issue. The rationale they said includes:<sup>484</sup>

...The EQOs are prescribed for the protection of a beneficial use. They are science-based. On the other hand, the SEPP(AQM) schedule B standards are “intervention levels” arbitrarily set to 20% or more above the SEPP(AAQ) levels. They are defined as “a numerical value for an indicator which if exceeded may trigger development of a neighbourhood environment improvement plan”. They are not science-based. EPA’s position is that the use of SEPP(AQM) Intervention Levels in monitoring the impacts of the Project is not required or justified, and that the use of SEPP(AAQ) EQOs is appropriate and constitutes best practice.

Ms Wilson in providing advice to the IAC concluded that the assessment of air quality impacts was thorough and used conservative assumptions, with a qualifier that sub-regional impacts are hard to predict.<sup>485</sup>

## (ii) Discussion

The IAC is satisfied on the evidence that the air quality modelling is fit for purpose, the methodology is sound, and the results provide suitable assurance that the air quality impacts of the Project will not be unreasonable.

As with all modelling, there is remaining uncertainty, and this is to be expected. However, the sensitivity testing and conservative nature of modelling gives the IAC some comfort that the Project should be able to be delivered with air quality impacts within acceptable standards.

If there are significant changes to the Project such as a longer tunnel, then these will need to be modelled and elements such as ventilation stacks redesigned as necessary to meet applicable standards.

The close involvement of EPA in the air quality impact assessment, and its role in considering the WAA, also gives comfort to the IAC that the regulator is accepting of the approach; without making any commentary on the specific statutory approval to be considered by it.

<sup>483</sup> Document 168, para 50. In relation to Mordialloc Bypass this is not strictly correct as the exhibited and approved EPR (AQ1) refers to AAQ and AQM for monitoring.

<sup>484</sup> Document 168, para 57.

<sup>485</sup> Document 74, page 9.

The IAC considers, and notes the position of Ms Wilson,<sup>486</sup> that the modelling in the EES and as revised through the Hearing process is suitable to be used by EPA in considering the air quality elements of the WAA.

The IAC considers the suggestions put forward by EPA in relation to the use of SEPP (AAQ) EQO are persuasive. These are<sup>487</sup> the actual values for pollutants put forward to protect beneficial uses including health. It seems to the IAC to be logical to use them for monitoring. If they are not met then further mitigation may be required, or, if they are being approached, then likewise the need for action can be considered.

The IAC considers there is merit in making this the standard approach from now on for such projects.

The IAC generally supports the other changes requested for EPRs by EPA, noting that the Proponent has accepted some through the course of the Hearing.

In Chapter 8.11 of this report, real time noise monitoring and public reporting is discussed. The IAC considers this approach should generally be applied to air quality, although there are difficulties in data processing in real time. The IAC supports the EPA suggested approach of daily reporting and this is included in the EPRs.

### **(iii) Findings**

The IAC finds:

- While there is some disagreement about some of the detailed aspects of the modelling among experts, overall the IAC considers it is robust, fit for purpose and conservative, and demonstrates that the air quality impacts of the Reference Design can be managed to an acceptable level.
- If there are significant changes to the Project, such as a longer tunnel, then additional air quality modelling and assessment will be required.
- Air quality monitoring should be undertaken to determine compliance with SEPP (AAQ) EQOs in Schedule 2.
- Daily air quality results reporting should be implemented as part of the Project.

### **9.1.3 Ultrafine particulates**

#### **(i) Evidence and submissions**

The health impacts of air pollution, including those derived from traffic, and particularly particulates, are undisputed; that is why we have air pollution limits and criteria.<sup>488</sup>

A number of submissions<sup>489</sup> raised concerns about UFP, a sub-fraction of PM<sub>2.5</sub> and generally defined as particulates smaller than PM<sub>0.1</sub>.<sup>490</sup> range. This issue was addressed in Technical Report B in Section 5.1.

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<sup>486</sup> Document 349, page 9.

<sup>487</sup> In schedule 2 to the SEPP (AAQ).

<sup>488</sup> See for example, para 59, EPA submission Document 168.

The Report notes:<sup>491</sup>

- The science on the health impacts of UFP is inconclusive.
- There are no standardised techniques or instrumentation for measuring UFP in ambient air.
- There are no ambient air quality criteria for UFPs in Europe or elsewhere.
- There are no readily available emission factors for vehicles.

## **(ii) Discussion and conclusion**

Given the above points, the IAC is not able to try and establish a new regime for addressing UFP. The current approach to air pollution is well established with criteria generally tightening over time.

If UFP are conclusively proved to be a specific health risk, over and above other known particulate and pollutant risks, then regulations and assessment techniques will need to be developed to measure and control them.

As the West Gate Tunnel IAC concluded, this is an issue that requires frequent review and research to ensure that standards are introduced if needed.

## **(iii) Findings**

The IAC finds:

- There is no evidence for a particular program of measuring and assessing UFP for the Project, given the lack of clear scientific evidence, the lack of a standard to be met, and the identified difficulties in measurement.

The IAC for the West Gate Tunnel made the following finding, which this IAC adopts:

- Given the state of the science in relation to fine and ultrafine particulates, it would be appropriate for the State, through the EPA, to continue to monitor emerging medical research and modify the air quality standards as necessary to maintain a best practice approach.

### **9.1.4 Tunnel ventilation pollution control equipment**

#### **(i) Evidence and submissions**

Many submissions requested that the tunnel ventilation stacks be fitted with air pollution control equipment, or at least space be provided in their design to enable such equipment to be retrofitted.

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<sup>489</sup> And was also raised as an issue in consultation pre-EES, see for example Table 9 in Technical Report B.

<sup>490</sup> Technical Report B, page 27.

<sup>491</sup> Technical Report B, page 27.

Mr Fleer's evidence, based on the air dispersion modelling, is that predicted tunnel air emissions are low, consistent with other recent projects such as Eastlink, the West Gate Tunnel and CityLink.<sup>492</sup>

He went on to say that air pollution control equipment on the tunnel stacks is not best practice:

*...on the basis of either health, environmental or cost considerations.*

He further suggested that there is "no feasible scenario" in which pollution control equipment might be required and thus provision should not be made for it.<sup>493</sup>

Ms Lawrence supported Mr Fleer, agreeing that allowance for retrofitting pollution control equipment was not necessary.

Dr Cowan, under cross examination by Mr Morris for the Proponent, agreed that the contribution of air emissions from the tunnel stacks would be negligible; but still thought that there should be provision made for future retrofitting of pollution control equipment. His view was that pollution control criteria are likely to tighten over time, as has occurred for NO<sub>2</sub> for example, and it would be prudent to allow space for retrofitting such equipment. He noted that this has been a requirement for all other Melbourne road tunnels.<sup>494</sup>

The EPA made strong submissions on why space for retrofitting of pollution control equipment should be provided. These reasons included, in summary:<sup>495</sup>

- The health impacts of traffic emissions are still being considered and studied and it is likely standards will become more stringent over time.
- There is inherent uncertainty in modelling; this is demonstrated by the differing view of Mr Cowan in relation to several modelling factors.
- Developments in technology may provide that pollution control technology is significantly cheaper over time.

Ms Wilson, in her third expert report to the IAC, largely based on her review of the EPA submission and associated material, including the estimated cost of providing the space for retrofitting, also supported providing a space for retrofitting of pollution control equipment.<sup>496</sup>

In closing, the Proponent submitted that providing space in the ventilation stacks for retrofitting would cost in the order of \$6 million with potential visual and urban design impacts. It submitted this is unreasonable for a prospect so remote and the costs and other consequences are not warranted.<sup>497</sup>

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<sup>492</sup> Document 24f, page 5.

<sup>493</sup> Document 24f, page 10.

<sup>494</sup> Document 28g, para 85.

<sup>495</sup> Document 168, para 80 onwards.

<sup>496</sup> Document 349, pages 6-7.

<sup>497</sup> Document 434, paragraph 480.

It submitted that there are many more efficient ways of improving air quality than tunnel ventilation emission control.<sup>498</sup>

## **(ii) Discussion**

The IAC considers there is general agreement amongst experts that fitting the tunnel ventilation systems with emissions reduction equipment now would be of limited use given the low emissions projected from the vent stacks.

The IAC also notes that providing for retrofitting has been a feature of all or nearly all Australian road tunnels in the past few decades.<sup>499</sup> The IAC considers the relatively low cost for providing for such retrofitting in the context of the Project is a prudent approach to safeguarding potential future needs for emission control.

There was also general agreement that the best way to reduce emissions and improve traffic generated air quality impacts is via improved vehicle emissions. The IAC notes that the Commonwealth Government is considering the introduction of the Euro 6 (light vehicles) and Euro VI (heavy vehicles) standards that were introduced in the European Union in 2015.<sup>500</sup> The introduction of higher standards for vehicles emissions, while outside the scope of the IAC's role, is clearly a highly desirable outcome for human health and the environment and should be pursued.

## **(iii) Findings**

The IAC finds:

- There is no evidence that pollution control equipment on tunnel ventilation systems is required for the Project under current standards.
- Provision for retrofitting of such equipment should be made in the design of the tunnel ventilation stacks.
- Introducing the Euro 6/Euro VI emission standards should be pursued.

### **9.1.5 Construction air quality**

#### **(i) Evidence and submissions**

Technical Report B outlines the key construction air quality impacts, and notes that they are generally considered on a qualitative basis, given that the exact project details are yet to be determined. They are identified primarily as surface works impacts, which can be summarised as:<sup>501</sup>

- dust and other particulates from vehicle movements, spoil handling, wind generated erosion, earthworks and specific construction activities

<sup>498</sup> Document 434, paragraph 484.

<sup>499</sup> The IAC for West Gate Tunnel recommended pollution control equipment be *installed* for that project due to particular air quality issues in the project area; the project was eventually approved with the retrofit provision.

<sup>500</sup> <https://www.infrastructure.gov.au/vehicles/environment/emission/index.aspx>

<sup>501</sup> Technical Report B, Section 8.2

- construction vehicle exhaust emissions
- odour from spoil or other activities such as sewer relocation

Given the scale of operations and length of time for construction, these impacts may be significant at different times; recognising that the impacts on any given area may be transient.

In his evidence, Mr Fler noted that construction air quality impacts will be addressed through the Construction Environment Management Plan (and its suite of subsidiary plans) required for the Project. He identified the types of control measure that would be appropriate in Table 33 in Technical Report B.<sup>502</sup>

In his evidence he also considered that requiring a contractor to meet Euro V emission standards for construction vehicles would be a reasonable approach to reduce the impact from the substantial fleet of construction vehicles.

Dr Cowan did not address dust from construction as he considered it would be adequately managed through monitoring and mitigation.

Mr Sichlau for Carey expressed concern about construction air quality on the Carey playing fields in his written statement. In the Hearing his evidence was that construction air quality (dust) was of more concern than operational impacts.

## **(ii) Discussion**

The potential for significant impacts and reduced air quality from construction activities is very real given the scale of the Project and the proximity of residents in many areas. The IAC heard submissions from, for example, residents near Borlase Reserve, who recounted how air quality (dust) during Level Crossing Removal was very bad for a construction period of only a few months.<sup>503</sup>

The IAC is satisfied that standard construction management techniques are available to minimise the impacts on air quality, but the implementation is always dependent on the quality of the Construction Environmental Management Plan (including the Dust and Air Quality Monitoring and Management Plan), how well contractors comply with it, and the ability for rapid response and mitigation when a problem occurs.

These elements of this Project are all unknown at this early stage of the design and procurement process.

The IAC notes the agreement of Mr Fler in terms of encouraging the use of Euro V emission standards for heavy vehicles. The IAC considers this a practical approach that can result in meaningful emissions avoidance and has supported it through the EPRs.

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<sup>502</sup> At page 75.

<sup>503</sup> Part of the reserve was used as a stockpile/laydown area for the Rosanna Level Crossing Removal Project.

**(iii) Findings**

The IAC finds:

- Construction air quality impacts, particularly dust, have the potential to be very significant impacts given the scale of the Project and the proximity of sensitive receivers along the route.
- Changes are recommended to the EPRs to strengthen reference to maintaining acceptable construction air quality.
- The IAC is satisfied that air quality can be managed to an acceptable level through the development, implementation, monitoring, and enforcement of the measures in the Construction Environment Management Plan.

**9.2 Greenhouse gas**

Greenhouse gas is addressed in Chapter 26 in the EES and Technical Report R prepared by GHD.

The relevant evaluation objective is:

To demonstrate that the project will contribute to the need for an effective, integrated and climate change-resilient transport system that provides a wide range of travel choices for all Victorians.

Evidence was provided by:

- Proponent – Tom Young from GHD (Mr Young was not called to give evidence at the Hearing, and he did not participate in the Air Quality conclave).

The assessment methodology for Greenhouse Gas (GHG) emissions was outlined in Chapter 26.1 of the EES. The legislative and policy framework was listed in Table 4-1 of Technical Report R.

GHG gas emissions from the ventilation stacks are regulated as part of the WAA under the EP Act.

The results of the GHG assessment can be summarised as:<sup>504</sup>

- emissions over a seven-year construction period of 2,020kt CO<sub>2</sub>-e<sup>505</sup>; on an annualised basis approximately 0.25 per cent of Victorian emissions on 2016 figures. The main GHG emissions are embodied energy in the construction materials and electricity used by, for example, the tunnel boring machines.
- operational emissions of 84kt CO<sub>2</sub>-e per year; 96 per cent of which is generated by the tunnel ventilation system
- a marginal reduction in vehicle traffic emissions due to more efficient vehicle movement.

<sup>504</sup> Chapter 26, page 26-12.

<sup>505</sup> Carbon dioxide equivalent; a standard method for measuring a carbon footprint.



### 9.2.1 Key issues

The IAC considers the key issues are:

- whether the GHG methodology and calculations are fit for purpose for the Project
- whether the approval mechanisms for the Project adequately address GHG mitigation.

### 9.2.2 Evidence and submissions

Mr Young's evidence was essentially uncontested, and he was not called to give evidence. In his written statement he responded to submissions, of which nearly 70 raised GHG as an issue.

Mr Young grouped the issues raised in submissions and responses to them as follows:<sup>506</sup>

- incorrect calculation of construction and/or operational emissions (assumptions and methodology)
- further information sought on the calculations of GHG
- concern about the level of GHG emitted
- adequacy of mitigation and reduction measures
- GHG emissions from trucks and heavy machinery during construction
- vegetation removal and GHG emissions
- embodied energy in construction materials
- consideration of alternate transport projects and methods.

Mr Young provided comprehensive written responses to these issues in his evidence statement. His evidence was that the Proponent has already set minimum sustainability objectives and targets for the Project that contractors will be required to meet including:<sup>507</sup>

- Achieve at least a 30% reduction in carbon emissions from the construction of the North East Link against an Infrastructure Sustainability Council of Australia (ISCA) verified base case calculated in accordance with their independent standards.
- Use a minimum of 50% of renewable energy for all electricity used to construct the North East Link.
- Achieve net zero emissions in the operation and maintenance of the North East Link\*. (\*Note this does not include emissions from traffic using the North East Link. Residual emissions would be offset with renewable energy in favour of other offsets to achieve net zero emissions).
- Reduce the amount of Portland Cement content in concrete across the project by a minimum of 30% (against Green Building Council of Australia reference mix design levels subject to durability and strength requirements).

In their submission, the EPA noted that it considered the sustainability requirements in the EPRs too vague and "*specific meaningful targets and actions*" for GHG should be included.<sup>508</sup>

<sup>506</sup> Document 24aa, page 2 onwards.

<sup>507</sup> Document 24aa, page 5.

<sup>508</sup> Document 168, para 127 onwards.

EPA further submitted that as Mr Young had identified more detailed sustainability targets and requirements that the Proponent has committed to for contractors (as shown above), it would be logical to include these as minimum requirements in an EPR.

They also noted that the EPRs for the West Gate Tunnel Project included specific targets from the Infrastructure Council of Australia (ISCA) Infrastructure Sustainability rating tool. They submitted that such an EPR would also be relevant and appropriate.

### **9.2.3 Discussion**

The IAC notes there were many submissions and concerns expressed about the Project's GHG emissions. It is a very large Project and will have very significant GHG emissions, particularly during construction; the exact extent of which will not be known until a final design is prepared and approved.

The IAC does not find it particularly useful to compare the GHG emissions with the whole of Victoria or National emissions as that is not what the evaluation objective requires. However, minimisation of emissions, and offsets where necessary, is obviously something any major Project should be striving for.

Overall the IAC support the approach taken to measurement and assessment of GHG in the EES, noting that as for many other elements of the Project calculated estimates for operational emissions are based fundamentally on the traffic modelling.

The IAC shares the concern of the EPA. The proposed SCC EPRs are very generic in nature, especially compared to other projects such as the West Gate Tunnel. It supports the refinement and strengthening of EPRs to ensure that there are clear targets and objectives for GHG emission reduction and mitigation within the public approval documents to improve transparency.

### **9.2.4 Findings**

The IAC finds:

- The Project will be a significant source of GHG, particularly during construction, from embedded energy in construction materials and from electricity used to power the TBMs.
- The assessment of GHG in the EES is a satisfactory basis for developing avoidance and mitigation measures for GHG emissions.
- The EPRs should be modified generally in accordance with the approach as put by EPA to provide a higher level of transparency and ensure that targets and objectives for GHG mitigation are tied directly to Project approval.

## **9.3 Recommendations**

The IAC has recommended a series of changes to the EPRs in relation to air quality monitoring, the provision of space for retrofitting pollution control equipment and improved sustainability targets.

## 10 Ground movement and groundwater

Ground movement impacts are addressed in the EES in:

- Chapter 21 Ground movement
- Technical Report M Ground Movement

The evaluation objective is:

Land Stability – To avoid or minimise adverse effects on land stability from project activities, including tunnel construction and river and creek crossings

Ground movement can be horizontal or vertical movements due to sub-surface activities such as tunnelling and deep excavation work (associated with the freeway trench and cut and cover tunnelling). Where ground movements are severe enough, buildings, infrastructure and environmental features can be damaged or degraded.

Groundwater impacts are addressed in the EES in:

- Chapter 22 Groundwater
- Technical Report N Groundwater

The evaluation objective is:

To avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments.

This chapter principally focuses on the groundwater modelling while groundwater drawdown and mounding and its potential environmental effects are discussed in Chapter 6.

Table 8 summarises each party's ground movement and groundwater evidence and the expert's principal area of focus.

**Table 8** Ground movement and groundwater experts

Party	Expert	Firm	Principal Area
The Proponent	Stephen Macklin	GHD Pty Ltd.	Ground movement
	Hugh Middlemis	HydroGeoLogic	Groundwater
BBW Councils	Lars Babendererde	BabEng	Tunnelling / Ground movement
Manningham / BBW Councils	Chris Smitt	EHS Support	Groundwater

A Groundwater expert conclave<sup>509</sup> was held on 26 July 2019, however a Ground movement conclave was not required.

The IAC also received independent advice from its Technical Advisor, Craig Barker.<sup>510</sup>

<sup>509</sup> Document 107.

<sup>510</sup> Document 76, Document 77, Document 350 and Document 351.

## 10.1 Ground Movement

Key issues were associated with risk of damage to:

- buildings, assets and heritage structures and the use of condition surveys
- utilities
- native vegetation
- parklands and landscapes
- sporting fields.

### 10.1.1 Evidence and submissions

#### (i) The Proponent

The Proponent identified that the key mechanism for ground movement related to dewatering effects (lowering of the water table), associated predominately with cut and cover tunnels and deep excavation. However, ground settlement from dewatering was unlikely to have a significant impact on sensitive receptors.

Nearby utilities such as water mains would experience settlement of varying degrees, but within acceptable standards.

Ground movement impacts on environmental features and landscapes are predicted to be low. Similarly, residential properties are unlikely to be affected by ground movement, however around the Lower Plenty Road and Bulleen areas, settlement of up to 29 to 36 millimetres had been modelled. This may result in some cosmetic damage causing minor visible effects to nearby properties.

Other structures are generally anticipated to be unaffected however the Helmet Sculpture in Banksia Park may need to be temporarily relocated.

Applying the Project EPRs would minimise ground movement impacts by:

- developing a geotechnical model
- implementing a ground movement plan
- undertaking condition surveys and
- repairing any damage caused from ground movement.

The Proponent relied on the evidence of Mr Macklin<sup>511</sup> In his assessment, the Project's ground movement risks are low to very low residual risk once the appropriate EPRs have been applied. Particularly sensitive areas that will require additional care include:

- Banksia Park near the Bridge Street Portal
- Lower Plenty Road environs
- Banyule swamp.

The assessment indicated:

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<sup>511</sup> Document 24y. Mr Macklin Evidence.

- residential, heritage buildings and utilities are expected to exceed the 'slight' damage risk category
- mature tree root damage is negligible
- landscapes, parklands and sporting grounds may experience movement of less than five to ten mm that would not normally give rise to concern.

Mr Macklin reviewed the EPRs and was generally comfortable, however in light of submissions suggested:

- GM2 – Ground Movement Plan
  - include baseline monitoring for sensitive landscapes, water bodies and vegetation within the Project area
- GM4 – Property and assets impacted by ground movement
  - 'expand properties' to include natural landscape and parklands

## **(ii) Other submissions**

A number of submissions were received concerned with potential property damage and how it would be assessed and ultimately rectified; other submissions focused on adverse environmental impacts.

Heide MOMA were particularly concerned that vibration could potentially damage art work (or require expensive relocation) and other assets.<sup>512</sup>

### **10.1.2 Discussion**

Mr Macklin's evidence was accepted by all parties.

Ground movement is a potential unknown for the community, and many people are concerned about its possible consequences to their property (buildings, sports grounds), natural landscapes and utilities.

The EMF in conjunction with the proposed suite of Ground Movement EPR's appears to strike a balance and ensures condition surveys are undertaken and that any damage caused by Project generated ground movement will be rectified.

The modelling suggests that vegetation, in particular, tree roots would not be adversely affected by ground movement.

### **10.1.3 Findings**

The IAC finds that:

- impacts of the Project's ground movement will be adequately managed by enhanced EPRs.

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<sup>512</sup> Submission 643.

## 10.2 Groundwater

Construction works that intersect the groundwater table, particularly tunnelling can cause significant changes to groundwater levels and reduce groundwater availability to Groundwater Dependent Ecosystems (GDE) (such as the Bolin Bolin Billabong and other vegetation) and existing users (only two private bores have identified).

Changes in groundwater level and flow direction may also cause:

- existing subsurface contamination (possibly from old landfill sites and former land uses) to migrate
- subsidence
- generate acidic groundwater when acid sulfate soil and rock are exposed to air.

As such, it is important to have an understanding of the groundwater conditions to assess the Project potential impacts, risks and mitigation measures.

The key issue is:

- Whether the groundwater modelling is fit for purpose.

### 10.2.1 Evidence and submissions

#### (i) The Proponent

The Proponent relied on Mr Middlemis' evidence in the form of a peer review of the EES groundwater impacts. He identified that the groundwater assessment had been conducted in a manner consistent with best practice and provides clear guidance on Project impacts. He believed that the EPRs are appropriate, however some minor modifications were appropriate, generally around collection of additional data, model updating and independent review and overview by a Statutory Environmental Auditor.

Additional groundwater data collection and modelling had been undertaken since the EES was prepared augmenting earlier work and generally improving model performance, in particular around the Bolin Bolin Billabong. The changes in water levels between groundwater, river and billabongs underwent further data collection and model refinement to allow for more informed assessments to be made.

#### (ii) EPA

The EPA submission<sup>513</sup> outlined its role to protect and improve groundwater quality, in line with SEPP (Waters of Victoria). In this regard, the main risks to the environment posed by the Project were:

- contaminated groundwater plumes expanding/moving
- degradation of groundwater quality.

EPA supports, in consultation:

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<sup>513</sup> Submission 600.

- the development of groundwater model to a Class 2 standard (higher standard model and suitable for sensitive environmental receptors)
- the development of a more fulsome monitoring program (pre and post construction) including base line water level and quality
- groundwater management plans.

EPA proposed several amendments to the EPRs around these issues.

### **(iii) BBW and Manningham Councils**

Councils remained concerned that the relationship between groundwater and GDE and surface water is still unknown and the preparation of a functional model that is fit for purpose should be a prerequisite for approval, not something to be resolved later. Mr Smitt's opinion was the EES does not adequately assess the potential nature and extent of the Project's environmental effects, however with further investigations and model refinement it could achieve an acceptable level of environmental performance.

In particular:

- lack of data compromises the model and led to incorrect assumptions
- model objectives appeared to be more focused on informing construction design parameters as opposed to potential impacts on sensitive receptors
- current and predicted migration of contaminated groundwater has been underestimated
- the risk assessment process should be revised.

### **(iv) Other submissions**

#### **Yarra Riverkeeper Association**

Yarra Riverkeeper endorsed Council's suggested amendments to EPR GW1 but proposed that the groundwater model must be referred to the Technical Advisory Group for its consideration.

#### **Other submissions**

Some submissions flagged the inherent difficulties in endeavouring to model the complex interactions of groundwater bodies and their interactions within the local environment. The majority of submissions were focused on the environmental issues associated with changes to groundwater levels, as opposed to groundwater modelling. These issues are discussed in Chapter 6.

## **10.2.2 Discussion**

The Proponent's groundwater modelling assessment generally meets best practice criteria for a major project. The IAC is comfortable that the modelling is generally fit for purpose in achieving the EES scoping requirements. It is acknowledged that the various experts' assumptions and parameters may differ in the development and refinement of the groundwater model.

The groundwater assessment allows designers, licence issuers and reviewers to establish and ultimately manage key environmental aspects across the Project with a suitable suite of

EPR's for protection of key environs (such as the Bolin Bolin Billabong). Further work has been undertaken and more is planned to gain a greater understanding of the Bolin Bolin Billabong and other GDE which practically aligns more with a Class 2 model. Less critical areas of the Project do not require this level of detail (that is, the northern end of the Project where works are predominately at surface level and the water table is significantly below ground level).

Ongoing groundwater monitoring and groundwater model refinement will occur as Project investigations continue to detailed design. While Councils would like to see this work resolved now rather than at a later date, the IAC accepts the proposed model refinement is one element of an ongoing process and has been further bolstered with the requirement for an independent auditor.

However, overarching the groundwater modelling, there are mature and recognised technologies and ameliorative measures that can be implemented if groundwater levels change and have adverse impacts, such as pumping water into Bolin Bolin Billabong which already occurs, to pumping out groundwater if it rises on the upstream side of tunnel walls. Careful monitoring and management of groundwater dependent trees will need to occur into the future and is covered by the EPRs.

The proposed EMF in conjunction with the propose suite of groundwater EPRs are appropriate to understand and manage groundwater risks.

### **10.2.3 Findings**

The IAC finds:

- The groundwater modelling is fit for purpose, acknowledging that further refinement will occur during Project detailed design.
- The EMF and suite of groundwater EPRs are appropriate to understand and manage groundwater risk.

### **10.3 Recommendations**

The IAC recommends the EPRs be adopted as shown in Appendix G.



## 11 Surface water

The following chapter of the EES and technical reports are relevant to surface water:

- EES Chapter 24 – Surface Water
- Technical Report P – Surface Water

The main EES evaluation objective for surface water is:

To avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments.

The following expert evidence was relevant to surface water:

- Mr Fuller on behalf of the Proponent
- Mr Dunn and Mr Bishop on behalf of BBW and Manningham Councils
- Mr Cawood on behalf of Carey.

A Surface Water conclave report<sup>514</sup> (as corrected by letter dated 1 August 2019) was provided.

The following EPRs are relevant to surface water:

- SW1 – SW14 in respect of surface water

### 11.1 Key issues

The following key issues were presented in the EES and were also the ones that raised most discussion in submissions:

- baseline data and water quality modelling
- realignment of creeks
- construction works within the floodplains
- changes to flood conditions, including impacts on Carey sports grounds
- monitoring and Management of Water Sensitive Urban Design elements.

### 11.2 Evidence and submissions

#### 11.2.1 Baseline data and water quality modelling

The BBW Councils said that the lack of detail in the surface water material of the EES is a significant defect.

Mr Dunn and Ms Giovas raised concerns regarding the baseline water quality monitoring, or lack of, and suggested that the use of data that is seven years old to determine existing conditions is not adequate (for example the water quality data for Banyule Creek).

Mr Dunn, for BBW Councils, highlighted that no water quality data was presented in the EES for the Yando Street Main Drain catchment or the Kempston Street Main Drain catchment.

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<sup>514</sup> Document 119.

Mr Dunn said that without appropriate water quality testing, a direct determination of stormwater performance requirements cannot be quantified.<sup>515</sup>

In his evidence, Mr Dunn stated that there are inconsistencies in the modelling approach undertaken for the different catchment areas. As a consequence, there are flood prone areas that have not been identified by the modelling undertaken and therefore the impacts of the Project are not adequately presented.<sup>516</sup> Mr Dunn's evidence is that the modelling to date highlights that the Reference Design does not achieve appropriate flooding requirements.

The Yarra Riverkeeper Association submitted that the Yarra River environs are a high value environmental asset and require protection. They suggested potential water quality impacts from the Project present a serious risk with a high degree of uncertainty and a precautionary approach is warranted. The Yarra Riverkeeper Association also submitted that a relevant consideration to which the IAC should give considerable weight is that recent legislation has recognised the Yarra River as *one living and integrated natural entity*.<sup>517</sup> They stated:

In respect of the main channel of the Yarra River, the water experts and ecological experts provided the following evidence:

- there will be increased stormwater impacts and flows into the Yarra River, via Koonung Creek, Banyule Creek (drain), and the Plenty River, attributable to increased impervious surfaces associated with the NELP, absent sufficient mitigation measures;
- it is not known with any reasonable degree of precision whether these flows can be managed via Integrated Water Management ('IWM') treatments; and
- flows attributable to the NELP would likely increase contaminant loads in the Yarra River, including road-based toxicants.

These outcomes are inconsistent with planning policy and statutory protections for the Yarra River corridor.<sup>518</sup>

Manningham raised the need for involvement and scrutiny of hydraulic modelling results to ensure effective integration of local stormwater infrastructure and consideration of local flood impacts in line with the proposed Project.

Mr Bishop, BBW and Manningham Councils, stated that there is insufficient information in the EES to demonstrate surface water impacts such as flooding, water quality and impacts to waterways. He did submit that the modelling program used – TUFLOW – is widely used and is Melbourne Water's preferred software that is appropriate for the analysis of overland flows in urban areas. However, he did highlight some deficiencies in the reporting of the outcomes of this model (for example, it is difficult to read the mapping).

Mr Fuller, for the Proponent, stated that the models (including TUFLOW and the industry-standard MUSIC modelling for road runoff) are constrained by the lack of observed local data. Consequently, he explained, recommended default parameters are utilised to

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<sup>515</sup> Document 259, page 6.

<sup>516</sup> Document 259, page 3.

<sup>517</sup> Document 380a, page 14.

<sup>518</sup> Document 380a, page 15.

generate model results. These default parameters have been developed based on experience in the modelling of flood inundation over many studies in urban areas so they provide a level of confidence that the comparison between pre-development and post-development change is appropriate.

However, Mr Fuller suggests that the absolute modelled water levels are subject to error that engineers should take into account and therefore adopt appropriate freeboard in their designs. He states:

As a consequence, it is my understanding that project approval will be dependent on the adoption of EPR SW6 that required amelioration of any substantive change in pre-development to post-development flood risk based on the final configuration and design of the North East Link.<sup>519</sup>

All experts participating in the conclave raised concerns about the level of detail in the EES and supporting documents regarding hydraulic and water quality impacts from the Project. They stated:

At this point it was agreed by the experts that an analysis and discussion of these surface water issues on a site-by-site basis would be a significant undertaking and unlikely to lead to further agreement among the experts.<sup>520</sup>

Mr Dunn stated that because the EES failed to assess water quality mitigation measures at a catchment scale they don't know what the downstream impacts will be on Banyule Creek, Yarra River, Plenty River and Koonung Creek.

Mr Fitzgibbon from Melbourne Water said that the issues raised between the modelling outcomes and the results they produced were '*not deal breakers for this Project*'.

### **11.2.2 Realignment of waterways**

The Reference Design proposes to underground 1.4 kilometres of Banyule Creek and 1.5 kilometres of Koonung Creek. Some of the Koonung Creek is already piped. The EES states in relation to Banyule Creek:

The reference project would result in the Banyule Creek being diverted into a drainage system to either side of the North East Link roadway, between Simpson Barracks and Lower Plenty Road. As a result, the existing flood regime would be significantly altered, with Banyule Creek no longer being a semi natural urban creek through Simpson Barracks. The newly constructed pipes would feed into a series of detention and treatment ponds to the north of Lower Plenty Road. These ponds would be used for treatment and storage of stormwater. The water within the ponds would be directed to the existing culvert under Lower Plenty Road and from this point the creek would follow its existing alignment through the residential area of Viewbank and Rosanna.<sup>521</sup>

And in relation to Koonung Creek:

To allow for the widening of the Eastern Freeway, three sections of Koonung Creek would be diverted from their current course due to the reference project (totalling

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<sup>519</sup> Document 24e, page 2.

<sup>520</sup> Document 119 conclave report page 4.

<sup>521</sup> EES Technical Report P, page 114.

approximately 600 metres). The diversions would involve the installation of a naturalised channel with the shape and invert matching the existing channel and works on the floodplain to provide compensatory flood storage that would be required due to the freeway embankment.<sup>522</sup>

The issue of undergrounding and realignment of creeks includes impacts on geomorphology which is the change to the beds and banks of waterways associated with the construction of the Project and which may affect waterway stability. In Technical Note Number 29, the Proponent stated that:

From a hydrologic perspective a significantly altered flood regime is expected upstream of Lower Plenty Road since open drains and small tributary waterways are expected to be at least in part replaced with underground pipes such that a portion of the total flow is likely to be routed in faster flowing underground drainage. Additional storage is proposed upstream of Lower Plenty Road to offset any loss of attenuation and thus avoid any adverse downstream effects as required by EPR SW6.

The footprint of the reference project at Banyule Creek and the associated changes to the hydrological regime would significantly change the environment north of Lower Plenty Road.<sup>523</sup>

The Proponent also suggested that the potential undergrounding of Koonung Creek is effectively an upstream extension to an existing culvert and would by itself have little impact. Mr Bishop's evidence states that the undergrounding of waterways is contrary to Melbourne Water's current best practice. Many submissions expressed similar views.

Mr Fuller acknowledged submissions that raise concerns about undergrounding of Banyule and Koonung Creeks and suggested that WSUD principles be used to minimise the need to underground where possible.

### 11.2.3 Construction works within floodplains

The EES assessed the potential for construction activities to increase flood risk due to the temporary placement of construction structures or materials within the floodplain. Melbourne Water is the relevant floodplain management authority under the *Water Act 1989*.

The EES states:

Locating these items within the floodplain could have the potential to displace floodwaters in a flood event, increasing the flood frequency and levels at properties within or adjacent to the existing floodplain.<sup>524</sup>

Further, the EES describes the construction compounds within floodplains as follows:

Given the proximity of the project to the Banyule Creek, Yarra River and Koonung Creek floodplains, temporary construction compounds intersect with existing flood extents. Although structures, equipment and materials would be kept out of flood-prone areas wherever possible, it is inevitable that temporary placement within the floodplain would be necessary in a number of areas which may displace flood water

<sup>522</sup> EES Technical Report P, page 117.

<sup>523</sup> Document 63, page 2.

<sup>524</sup> EES Technical Report P, page v.

and increase flood risk. The level and location of flooding risk may vary between sites and construction phases. Increased flooding could materialise as an increase in flood frequency or an increase in flood levels, and if not mitigated may affect properties within or adjacent to the existing floodplain. Staging of construction works to reduce flooding risks would be considered when planning construction sequences.<sup>525</sup>

The EES suggests that the implementation of a Surface Water Management Plan will manage the potential impacts of temporary construction works within the floodplain.

Carey is concerned about the potential negative impacts likely to be experienced during the construction period from Yarra River and Koonung Creek flooding. Mr Cawood, surface water expert for Carey, stated that construction compounds located in flood prone areas will reduce flood storage and conveyance capacity which will impact negatively on flood frequency and levels. He said that none of the modelling in the EES has included the construction compounds.

The Proponent stated in Part A submissions that the location of infrastructure within the urban reaches of the Yarra River catchment and within floodplains associated with different water courses<sup>526</sup> will require management having regard to flood risk and water quality issues. This will require the localised modification of certain waterways in and around the Project's alignment.<sup>527</sup>

Councils stated that a range of policy and planning controls establish that, where works are to be undertaken on a floodplain there must be no loss of flood storage; there must be no increase in flood levels; there must be no increase in flow depths or velocity; and the existing flood hazard must not be increased. Loss of open space to accommodate stormwater infrastructure was also an issue raised by Councils.

Mr Bishop, for BBW Councils, stated that you would have to be 'unlucky' to get a significant storm event during construction the phase and he notes these are temporary works, rather than permanent barriers to surface water flow.

In submissions to the Hearings, when the IAC asked Mr Fitzgibbon from Melbourne Water about his opinion on having construction compounds in the floodplain, he replied that "*flood is a risk game and that ideally you would not put objects into the way of where a flood may happen*" and also stated that it is Melbourne Water's policy to "*do no harm*".

#### **11.2.4 Changes to flood levels, flows and velocities**

The EES explains that the Project increases the amount of paved surface area through the creation of many new roads and ramps, carparks and shared use paths. Connectivity of stormwater runoff from roads to the drains and waterways would be increased, as well as the risk of increasing peak inflows to drains and waterways, which has the potential to affect the ecological and geomorphic conditions of receiving waterways. New roads for North East

<sup>525</sup> EES Technical Report, page 111.

<sup>526</sup> Including potentially large construction compound on Marcellin College's grounds.

<sup>527</sup> Document 34a, paragraph 15, page 7.

Link would require new drainage networks to cater for stormwater runoff along the alignment.

The EES states:

The stormwater treatment system would be integrated into the design in accordance with the *EPA Victoria Best Practice Environmental Management Guidelines for Urban Stormwater*. Permanent works must not have any adverse impacts on flow velocities, and any change to the flow regime must satisfy Melbourne Water and adhere to its requirements.<sup>528</sup>

The Proponent stated in its Part A submissions that:

The tunnelling and trenching components of the Project have the potential to result in ground movement and to affect local hydrogeological conditions (including in proximity to the Yarra River) if not properly managed...<sup>529</sup>

Councils are concerned that the Project will lead to significant increases in flood depths at various locations and the EES is difficult to understand where and what properties will be affected.

The EES<sup>530</sup> notes the intention to use passive measures such as flood walls and road embankments (geometry) as well as active measures such as flood gates to provide protection for large flood events. A flood wall is typically an engineered structure such as a concrete, masonry, glass or sheet pile wall that provides a barrier to flood waters.

As part of his evidence, Mr Fuller reinforced that substantive changes in flood inundation or frequency are not permitted as recognised in EPR SW6.

Mr Fuller's evidence stated:

The results of the modelling along with the adopted EPRs were in my opinion sufficient to demonstrate that the flood impacts arising from the development could be managed in consultation with relevant authorities during more detailed design stage(s). Specifically, EPR B3 requires minimising and remedying damage or impacts on third party property and infrastructure; SW6 requires the Project to minimise the risk from changes to flood levels, flows and velocities; and SW7 requires flood emergency management plans to be developed.<sup>531</sup>

Mr Bishop's evidence was that the levels of unmitigated afflux predicted by the hydraulic model are significant, up to 500 millimetres. He stated that the results of the EES do not identify and quantify flood hazards and safety issues, both for existing and development scenarios.

The combined Councils suggested there is inadequate information provided on how any increase in flood levels or loss of flood storage will be addressed and much reliance by the Proponent on EPR SW6 that impacts will be mitigated at a later stage. They submitted that there is no evidence that the proposed flood management measures can feasibility be

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<sup>528</sup> EES Technical Report P, page vii.

<sup>529</sup> Document 34a, page 6.

<sup>530</sup> EES Chapter 24-Surface water pages 24-44.

<sup>531</sup> Mr Fuller evidence page 5.

implemented at the locations that they are required, for example Eram Park, Borlase Reserve and at AK Lines Reserve, all former landfill sites.

Melbourne Water stated that they were satisfied with the proposed flood storage locations and the modelling undertaken. Mr Fitzgibbon emphasised that Melbourne Water's policy of 'do no harm' should be implemented. His submissions to the IAC was that while a number of flood issues are acknowledged these are to be resolved by the Project in detailed design.

### **11.2.5 Carey Baptist Grammar School**

The key issues raised by Carey in regard to flooding is not whether there is potential for the site to flood as a consequence of the Project but by how much. It was concerned about changes to the characteristics of the flooding of the Yarra River and Koonung Creek, particularly during smaller more frequent events, which result in some or all of their sports grounds being inundated. Carey was also concerned that the proposed access road will adversely affect localised flood conditions.

Mr Cawood, on behalf of Carey, acknowledged that the final design may mitigate or remove these concerns.

Mr Grutzner, Principal of Carey stated in submissions:

Carey has always understood that the area of the CSC was subject to flooding. This was understood when CBGS acquired the site in 1959. Various provisions are made for the possibility of flooding such as designing the buildings to be raised above the flood level. There is also a Flood Evacuation Plan to be implemented when all occupants will need to leave the site.

So, the issue is not whether the site will flood or not, it is whether as a result of the Project, the flooding occurrence and severity is going to be more exaggerated than previously experienced.<sup>532</sup>

Mr Cawood explained that:

It is acknowledged that impacts on the Bulleen campus as a result to changes to the Yarra River flooding regime are unlikely to be substantial under ultimate (operational) conditions. However, modelling does show an increase in flood levels across the campus. This remains as a negative impact on Campus availability and annual average damage costs.<sup>533</sup>

Mr Fuller, acknowledged the issues raised by Mr Cawood and agreed that more detailed Project modelling during detail design will be required before the exact impact on the Carey's Bulleen campus can be fully quantified.<sup>534</sup>

### **11.2.6 Monitoring and management of Water Sensitive Urban Design**

The surface water experts stated that WSUD is largely focused on the management and treatment of flows and water quality. Amenity and environmental values are considered as

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<sup>532</sup> Document 170, page 4.

<sup>533</sup> Document 136b, page 4.

<sup>534</sup> Document 147, page 13.

part of WSUD but are less prominent and may be lost during engineering design stages without integration with the UDS and other policies and requirements.<sup>535</sup>

The experts recommended that consideration be given to an integrated plan for the Project that addresses social, environmental and performance needs when designing WSUD solutions for the Project. During the course of his evidence, Counsel for the Proponent directed Mr Fuller to section 18.1 of the UDS where he confirmed that in his opinion, this directive adequately addressed the matters raised by the conclave in this respect.

The joint surface water expert's conclave proposed a new EPR pertaining to Integrated Water Management:

By its very nature, WSUD requires a trade-off between development and preservation, design and functionality, mitigation and rehabilitation, and between practicality and the available footprint for works and measures. The key is to undertake a process focussing on the issues and how the need for trade-offs can be avoided where possible. This process is necessarily multi-disciplinary and starts from considering existing conditions, plans, and strategies and the impacts of the proposed development. It is a process that necessarily involves a range of stakeholders.

In my opinion the EES does contemplate the development of the Project in terms of WSUD and sensitivity to existing plans, infrastructure and activities. However, this element of the EES is less clear, and the process for implementation is perhaps less transparent, than might otherwise be the case.

Mr Bishop, for Manningham, suggested that the spill management system designed in accordance with Austroads requirement is appropriate.

In regard to the treatment of water from the tunnels, Mr Bishop stated that the proposed water treatment plant to manage and treat the water collected in the tunnels before discharge into receiving waters is appropriate. He recommended that as part of EPR SW12, the quality of the water supply is to be of an equivalent standard to that available to the relevant stakeholder's pre-development.

In terms of ongoing monitoring of the water storage and retention ponds, Mr Fuller suggested (in response to EPA's submission) that *"the monitoring program should seek to assess the performance of WSUD elements via the combined use of continuous and spot sampling and integrated water quantity and quality modelling"*. In questioning from the IAC, Mr Fuller agreed that this be reflected in EPR SW4 'monitor water quality'. Mr Bishop also agreed with this approach.

The existing flood regime of the Banyule Creek would be significantly altered. Storage ponds near Lower Plenty Road have been included in the design to mitigate potential downstream flood risks resulting from potential loss of attenuation.

The conclave agreed that the ongoing maintenance of the Project's stormwater assets (such as the WSUD elements) is important to ensure that Project it continues to perform satisfactorily.

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<sup>535</sup> Document 119 conclave report page 3.



Ownership and transfer of WSUD assets is unclear and may vary across the Project. Experts recommended that the ultimate asset owners are involved in the design process with the aim of reaching agreement on the transfer and maintenance of assets in the longer term. This should be made clear in an EPR.

## **11.3 Discussion**

### **11.3.1 Baseline data and water quality modelling**

Water quality and hydrology are important to the health and sustainability of Melbourne's urban creeks, river systems and floodplains. It is important that the Project is designed to minimise threats to the health of surface water ecosystems and maintain floodplain functionality.

The IAC agrees with the experts that the EES has minimal baseline or conditions data and it is difficult to understand how impacts of the Project have been determined, what these will be and how WSUD and other mitigation measures have been designed.

Although the experts agreed that the EES was inadequate in terms of its presentation of the modelling outcomes and more details may have been useful in understanding the flooding extent, they relied upon implementing a suite of surface water EPRs to provide for further modelling to inform detailed design and mitigate potential impacts, in particular EPR SW6.

### **11.3.2 Construction works within floodplains**

As Melbourne Water suggested in submissions, the construction of large buildings and the stockpiling of spoil should not occur within floodplains wherever possible.

Prior to construction, the flood risks should be properly assessed using modelling in consultation with Melbourne Water and other relevant authorities as necessary for temporary works, given that 'temporary works' could be up to seven years. Modelling for construction compounds seems to have been omitted from the modelling undertaken for the EES.

### **11.3.3 Changes to flood levels, flows and velocities**

The IAC notes the commentary on the EES provided by the Proponent:

Although the design and the subsequent modelling are still being refined, the surface water risks have been defined (refer Table 7-1) and a set of Environmental Performance Requirements (EPRs) (refer Table 12-1) have been drafted to effectively manage these potential issues. With the application of these EPRs, the residual surface water risks are substantially reduced. Further discussions with stakeholders, refinement of the design and modelling assessment of the design's performance is expected to demonstrate that application of the EPRs would result in a project with acceptable surface water construction risks and long-term outcomes during operation.<sup>536</sup>

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<sup>536</sup> EES Technical Report P, page vii.

The IAC agrees with the experts that the EES lacks sufficient data and refined mapping of potential flooding impacts. There will be changes to the water regime as a result of the Project. The exact amount of change (impact) is not known however the experts and Melbourne Water suggest the changes will not be major and that these potential impacts could be mitigated appropriately through the EPRs, in particular EPR SW6 – Minimise risk from changes to flood levels, flows and velocities.

The IAC also relies upon the key asset manager, Melbourne Water, which also suggests that the impacts are not of major concern and can be appropriately mitigated through detailed design in consultation with the relevant authorities.

Notwithstanding the above issues raised, the surface water experts had a relatively high degree of consensus on the issues and agreed they could largely be managed through EPRs.

#### **11.3.4 Carey Baptist Grammar School**

There will be impacts to Carey during construction and potentially changes to water flows and flooding across the site once the Project is operational. As Mr Grutzner acknowledged, the site is within a floodplain and the school knew that when it purchased it and has planned its sporting facilities accordingly.

The IAC agrees with Carey's expert Mr Cawood that further modelling be undertaken as part of the EPRs (in particular EPR SW6) to determine the detailed design required to minimise the risk of flooding over Carey's land.

#### **11.3.5 Monitoring and management of Water Sensitive Urban Design**

The IAC agrees with the Councils that it is difficult to assess the proposed mitigation measures (for example WSUDs) and have certainty about the surface water impacts when such impacts are left to the post approval stage through detailed design. The IAC relies on Melbourne Water and its submission that what is proposed is satisfactory to it as the relevant authority.

The EPRs have been strengthened during the course of the Hearing to ensure more monitoring and involvement of the ultimate asset owners is included in the detailed design of the WSUD measures. EPR SW6 has been revised to reflect the need to consult with the drainage authority.

In developing the detailed design of the WSUD features (wetlands, bioretention ponds, and subsurface storages), the EES mapping indicates location and possible size only and there has been no detail presented as to whether these concepts are possible, especially within the Project boundary.

Mr Bishop stated in evidence that there are significant constraints highlighting the need for concept designs to demonstrate feasibility. He said there is no question that WSUD can be designed to treat water from roadways – the challenge is trying to fit these in the space available in the Reference Design.

Overall, Mr Fuller raised a number of issues in his evidence, namely:

- a need for more detailed information regarding the design of the works and mitigation of flood risk

- potential flood impacts on private property or existing infrastructure
- safety and operation of the southern portal design
- integrated water management and WSUD
- water quality impacts during construction.

However, the Surface Water conclave was satisfied that the EPRs are sufficient to account for each of these matters.

The IAC agrees with the experts that although the EES would have benefited from more baseline data and an accurate understanding of impacts, the EPRs are sufficient to ensure proper engineering solutions will be captured for the WSUD features.

The IAC also recognises that there is ongoing involvement of regulatory and approval agencies such as Melbourne Water and the EPA on many of these matters; and there are future stages of more detailed engineering design planned for the Project.

## 11.4 Findings

The IAC generally finds for most of the key issues raised, the experts agreed that further modelling to inform detailed design of the final Project will mitigate matters arising from insufficient information or data on baseline water quality, potential flooding and the details around proposed drainage basins and WSUDs.

The IAC finds that it is premature to make a finding as to whether the EES evaluation objective has been met which states that the Project should avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments. However, it accepts the evidence of experts and advice of Melbourne Water that these impacts can be designed and managed to an acceptable level.

In regard to construction compounds within floodplains, the IAC agrees with Melbourne Water and Marcellin that spoil should not be stockpiled within these areas if possible and that proposed structures must not increase the potential for flooding or altered flows to occur. The IAC has included the words 'Prior to construction' in front of SW6 of the Proponents Version 5 EPRs<sup>537</sup> so that it reads:

- *Prior to construction* flood risk should be appropriately assessed using modelling of the design of permanent and temporary works to demonstrate the resultant flood levels and risk profile in accordance with Melbourne Water Standards for Infrastructure Projects in Flood-Prone Areas (2019).

The Proponent has generally incorporated most other proposed conclave changes into the revised version of the EPRs<sup>538</sup>; the IAC supports these conclave changes.

## 11.5 Recommendations

The IAC has recommended that the revised IAC version of EPRs at Appendix G be adopted.

<sup>537</sup> Document 411.

<sup>538</sup> Document 411.



## 12 Solid waste and contamination

Solid waste and contamination impacts are addressed in the EES in:

- Chapter 23 Contamination and soil
- Technical report O Contamination and soil.

Contamination can also have groundwater impacts which are discussed elsewhere.

The draft evaluation objective of the Scoping Requirements in relation to contamination and soil in Table 4.1 of the EES is:

Waste Management – To manage excavated spoil and other waste streams generated by the project in accordance with the waste hierarchy and relevant best practice principles.

The following evidence was called in relation to solid waste and contamination:

- Proponent – Dr Peter Nadebaum from GHD
- Carey – Peter Oxnam from Greencap

The IAC also received three independent reports from its Technical Advisor, Craig Barker.<sup>539</sup> A conclave was not held.

The BBW and Manningham Councils submission was confined to recommending amendments to the EPR relating to contaminated land and groundwater contamination.

Comments regarding changes to the EPR related to soil contamination were also received from Carey, Friends of Banyule and Warringal Conservation Society.

### 12.1 Key issues

The IAC considers the key issues are:

- the adequacy of investigations to date
- interactions between the Project and contaminants found in former landfills and other industrial sites
- potential mobilisation of contaminated groundwater
- the management of excavated spoil.

### 12.2 Investigations to date

#### 12.2.1 Evidence and submissions

Mr Barker advised that the preliminary desk top investigation reported in the EES was extensive and that additional intrusive investigations made between 10 January 2018 to 8 August 2018 provided additional information which better informed the EES. However, it

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<sup>539</sup> Documents 10,78 and 352.

was his opinion that *“a considerable amount of additional investigation across soils for the project area will need to be undertaken before any project construction may commence...”*<sup>540</sup>

Dr Nadebaum’s evidence was that the assessment performed in the EES was appropriate and the results of further intrusive investigations performed after the publication of the EES did not materially alter the findings in the EES.<sup>541</sup>

Mr Oxnam considered that investigations made to date were not sufficient as there was limited understanding of subsurface soil characterisation and waste composition within Bulleen Oval, as well as insufficient groundwater monitoring. Under cross examination by the Proponent, Mr Oxnam conceded he wasn’t aware of the additional bore samples and investigations undertaken since the publication of the EES. Mr Oxnam’s supplementary submission recommended the appointment of a statutory auditor to oversee all EPRs governing soil contamination.<sup>542</sup>

BBW Councils’ written submission also stated that investigations around the Bulleen Oval were inadequate and that further detailed assessments would be required around the former landfill at Eram Park.<sup>543</sup>

Under cross examination by Mr Peake for BBW Councils, Dr Nadebaum acknowledged that investigations so far would be described as preliminary. In response to questions from the IAC, Dr Nadebaum considered that the investigations to date were sufficient for the preparation of the EES and to inform the EPR. Dr Nadebaum saw no need for the EPR relating to contamination and soil to specifically contain a reference to an independent auditor and considered that the requirement to meet EPA regulations would suffice.

Mr Chessell advised on behalf of the Proponent that investigations along the road alignment were still ongoing and would continue to a point of transition to the contractor.

### **12.2.2 Discussion**

EPR CL1 directs the implementation of a spoil management plan and requires the completion of a detailed site investigation including sampling prior to the excavation of any potentially contaminated areas. Mr Barker advised that the EPRs were generally robust and well constructed.

Carey’s initial concerns about a lack of adequate intrusive investigations in the preparation of the EES may have been mitigated by the additional sampling performed subsequent to the publication of the EES. Mr Oxnam’s supplementary submission made no reference or recommendations for further investigations, instead making recommendations that all EPRs for contaminated land include a requirement for the appointment of a statutory auditor.

EPR CL1 makes no specific reference to an environmental auditor. It was Dr Nadebaum’s view that an audit would be required under EPA regulations. However, the IAC understands

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<sup>540</sup> Document 78 page 29 and Document 352 page 32.

<sup>541</sup> Document 24x.

<sup>542</sup> Document 377b.

<sup>543</sup> Submission 716.

that the requirement for an environmental auditor is dependent on how the contaminated spoil is categorised, so there is no certainty of an environmental auditor being involved.

Although BBW Councils considered the investigations to date as preliminary, their recommended changes to EPR CL1 are not concerned with requirements for any additional sampling.

The IAC accepts Dr Nadebaum's evidence that the work performed to date is sufficient for informing the EPR and that ongoing assessment including sampling will be required as part of the preparation of a soil management plan.

The IAC also accepts Mr Oxnam's recommendation that the EPR requires reference to a statutory environmental auditor.

### **12.2.3 Findings**

The IAC finds that:

- The requirement for additional investigations included in EPR CL1 will be sufficient to ensure that appropriate intrusive investigations are completed.
- The EPR must include reference to a statutory environmental auditor.

## **12.3 Management of potential contaminants**

The proposed road alignment will cross a number of former landfill sites including:

- Greensborough Landfill
- AK Lines reserve
- Yallambie landfill/Borlase Reserve
- Bulleen Oval
- Freeway Golf Course
- Camberwell Municipal Landfill
- Greythorn Landfill
- Koonung Creek linear park

Existing and former fuel stations have also been identified at:

- Yallambie Road and Greensborough Road, Greensborough
- Bulleen Road/Manningham interchange area

Other potential areas of contaminated land include dry cleaning facilities in the BIP.

The Simpson Barracks has also been identified as a site which may have been used for fuel storage, landfill and waste disposal for Department of Defence operations.

### **12.3.1 Evidence and submissions**

Mr Barker advised that contaminants associated with landfill sites included Landfill Gas (LFG) other ground gasses, odours and asbestos. Other industrial areas and existing and former fuel station sites could potentially release petroleum hydrocarbons, chlorinated hydrocarbons, and volatile organic compounds. PFAS (Per- and poly- fluoroalkyl substances) was detected in soil samples at the former Bulleen Drive In site as well as dissolved in groundwater at the BIP/Bulleen Drive In area.

Dr Nadebaum advised that the nature and level of contamination associated with former landfills and industrial uses along the alignment was not unusual and did not pose high risks. Dr Nadebaum considered that standard practices for the management of such contaminants including PFAS could apply and that the proposed EPR would set an appropriate framework to manage risks.

The landfill gas assessment performed at Bulleen Oval did not detect any landfill gas and only low levels of carbon monoxide and methane. It was Dr Nadebaum's opinion that the landfill gas assessment results indicated that risk associated with landfill gas would be low.

### **12.3.2 Discussion**

Potential risks associated with soil contaminants including acid sulfate soils and vapour and gases would be managed by EPRs CL2, CL3, CL4, CL5.

The combined Councils and EPA made no changes to these EPR, suggesting that the proposed EPRs are capable of adequately managing potential impacts arising from the interaction of the Project with contaminants along the alignment to their satisfaction.

### **12.3.3 Findings**

The IAC finds that the proposed EPRs for managing potential contamination risks is satisfactory.

## **12.4 Mobilisation of contaminated groundwater**

### **12.4.1 Evidence and submissions**

Potential groundwater contamination from the Project have been raised by many submitters. Particular areas of risk include petroleum hydrocarbon impacted groundwater at the existing fuel station in Greensborough being drawn into the Project trench. There is a possibility of contaminated groundwater in the Simpson Barracks area. The Project may draw in existing dissolved PFAS impacted groundwater in the BIP area

Dr Nadebaum acknowledged that there was potential for construction works to result in drawdown of groundwater and affect the migration of groundwater contamination.

The BBW Councils expressed concerns about PFAS being in groundwater in the Bulleen Drive In site and the ramifications of tunnelling below this location, suggesting that drawdown and dewatering in the area could lead to cross-contamination of aquifers.<sup>544</sup>

Dr Nadebaum suggested that this was unlikely to occur and that in fact the Project may have some beneficial effects. He stated that PFAS in the groundwater may already be discharging into the Yarra River and that future construction works in the Bulleen precinct would likely intercept some of the natural groundwater thereby stopping its flow to the river. Further

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<sup>544</sup> Submission 716.



contaminated water in the construction site or extracted for dewatering would be treated or disposed of resulting in the removal of PFAS from the environment.

The EPA raised concerns with the dislocation of delineated contamination plumes and suggested that EPR GW2 be amended to require “delineation” rather than “identification” of existing contaminant plumes. Dr Nadebaum stated he had no objection to this amendment.

Dr Nadebaum was of the opinion that the main considerations in relation to groundwater contamination was the handling and management of extracted groundwater and confirming no migration of contaminants to sensitive receptors.

It was his view that EPRs developed for the Project would adequately manage these factors.

### **12.4.2 Discussion**

The EES concluded that widespread groundwater contamination along the Project alignment had not been identified although the extent of the assessment to date is preliminary. Where potentially contaminated groundwater has been identified, the EES concluded that although construction activities in these areas could encounter groundwater, contamination risks would be adequately managed by the EPRs for contaminated land and for groundwater. Dr Nadebaum agreed with this proposition.

Although Dr Nadebaum agreed with the EPA’s proposed change to EPR GW2 in regard to delineation of groundwater plumes, this amendment was not adopted by the Proponent.

The IAC agrees that risks associated with groundwater contamination can be adequately managed by appropriate EPRs.

### **12.4.3 Findings**

The IAC finds that the proposed suite of EPRs with the inclusion of the amendments suggested by the EPA can adequately manage risks associated with groundwater contamination.

## **12.5 Spoil management**

### **12.5.1 Evidence and submissions**

The Project is anticipated to generate over 6 million m<sup>3</sup> of spoil from construction works. Preliminary investigations to date indicate over half of the material would be classified as Fill Material with the remainder being Prescribed Industrial Waste (PIW) and Waste Acid Sulfate Soils (WASS). Most of the PIW is associated with former landfill sites. The management of PIW is regulated by the EPA and this material cannot be reused without treatment and EPA agreement.

Many submissions raised concerns in relation to the management of spoil and increased truck traffic associated with the haulage of spoil.

Dr Nadebaum gave evidence that spoil management had been adequately covered in the EES and that proposed EPR CL1 requires a Spoil Management Plan to be developed by the contractor. It was his evidence that the EPR included the necessary directives to ensure best practice and low risk.

Dr Nadebaum confirmed that the landfill capacity assessment indicated enough availability of disposal options but acknowledged that further work was required to confirm waste estimates.

The EPA submitted that it expected further work would be required to identify potentially contaminated land and was satisfied by Dr Nadebaum's acknowledgement of the need for this work.

The EPA expressed concern that opportunities for re-use of spoil may not be fully investigated and proposed modifications to EPR CL1 to ensure consideration of re use would be explicitly required.

It was Mr Barker's advice that the soil management strategy adopted for this Project is suitable but there needs to be greater understanding of industry landfill capacity. He also recommended that a Statutory EPA Appointed Auditor rather than an Independent Environmental Auditor should be involved.

A number of submitters expressed concerns about stockpiling contaminated material close to residential dwellings. Marcellin raised concerns about stockpiling such material in flood prone areas. Dr Nadebaum was of the opinion that the Spoil Management Strategy<sup>545</sup> and EPR CL1 which direct the contractor to develop a Soil Management Plan in consultation with the EPA will mitigate any potential risks. Further, additional EPRs direct methods for handling other hazardous wastes which will also assist in providing protection to sensitive areas.

Two submitters<sup>546</sup> raised alternative methods for the transport of soil including the use of rail and slurry pipes. Dr Nadebaum suggested that these methods are not precluded by EPR CL1 and that ultimately the EPA will approve the proposed Soil Management Plan.

Many submitters in the vicinity of construction compounds were concerned with the high volumes of trucks required to transport spoil material especially if these trucks were to use Rosanna Road. Dr Nadebaum responded that spoil transport would be managed by EPR T2 which requires identification of haulage routes and minimisation of construction haulage during peak times. Dr Nadebaum also stated that transportation of contaminated waste was also regulated by EPA guidelines.

The combined Councils submitted a number of minor amendments to EPR CL1 relating to the how the Soil Management Plan should be developed and including the input of public land managers and relevant road authorities in respect to the transport of spoil.

Nagambie Resources Limited<sup>547</sup> suggested that the proposed management of WASS is not consistent with legislated policies and guidelines and that proposed WASS management practices for this Project will have negative environmental impacts.<sup>548</sup> It submitted it has a

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<sup>545</sup> Appendix G of Technical Appendix O.

<sup>546</sup> Submitter 61 and 275.

<sup>547</sup> Submitter 383.

<sup>548</sup> Document 293 Nagambie Resources presentation.

facility that could prevent oxidation by placing excavated WASS in an anaerobic environment and consider this to be best practice.

Dr Nadebaum responded to this submission stating that he did not agree that the spoil management strategy for WASS was inconsistent with guidelines and regulations. Further he stated that the relevant EPR did not preclude facilities such as those as Nagambie Resources Limited from being involved in the spoil management procedure for the Project.

### **12.5.2 Discussion**

The amount of spoil associated with this Project is significant and is much greater than the spoil anticipated to be generated by other major infrastructure projects occurring in Melbourne including West Gate Tunnel and Melbourne Metro Rail Projects.

The recommended amendment to EPR CL1 in relation to the re use of spoil material suggested by the EPA has been adopted by the Proponent and included in the Version 5 EPR.

The IAC is satisfied that the proposed framework for development of the Spoil Management Plan and the suite of EPRs covering contamination issues can satisfactorily mitigate risks. The IAC accepts Mr Barker's recommendation that a statutory auditor rather than independent auditor needs to be involved. This is further discussed in Chapter 15 of this report.

The IAC accepts Dr Nadebaum's evidence regarding the availability of landfill capacity to accommodate this and other concurrent projects but considers Mr Barker's suggestion of improving on the current industry landfill capacity across this Project's lifecycle to be warranted.

The IAC can see merit in disposing and treating of WASS at facilities such as Nagambie Resources and notes that the EPR does not preclude this method of management.

### **12.5.3 Findings**

The IAC finds:

- The inclusion of a Statutory EPA Appointed Auditor in the Environmental Management Framework and EPR is warranted.
- The proposed EPR related to the implementation of a Spoil Management Plan with amendments suggested by BBW and Manningham Councils can satisfactorily mitigate risks associated with spoil management, reuse and disposal.

## **12.6 Recommendations**

The IAC has recommended changes to the EPR as shown in Appendix G.



## 13 Cultural heritage

The EES addresses cultural heritage effects of the Project in Chapters 19 (Historical Heritage) and 20 (Aboriginal Cultural Heritage). Supporting documentation includes Technical Report K (Historical heritage) prepared by Lovell Chen and Technical Report L (Aboriginal cultural heritage) prepared by Andrew Long and Associates.

The evaluation objective for cultural heritage in the EES is:

To avoid or minimise adverse effects on Aboriginal and historical cultural heritage values.

The Proponent relied on evidence from the following experts in historical heritage and Aboriginal cultural heritage respectively:

- Kate Gray, Historian, of Lovell Chen
- Jonathan Howell-Meurs, Archaeologist, of Andrew Long and Associates.

### 13.1 Key issues

The IAC has considered the nature and extent of historical and Aboriginal cultural heritage values in the Project area together with the potential effects of the Project as outlined in the EES and evidence to form a view as to whether they would be avoided or suitably minimised.

No party sought to cross examine either expert witness. The IAC requested Mr Howell-Meurs attend the Hearing to respond to questions it posed in respect of Aboriginal cultural heritage.<sup>549</sup> The IAC also provided questions in writing for Ms Gray which were addressed in Document 255a.

Key issues raised in submissions and at the Hearing were:

- whether the Aboriginal CHMP and the relevant EPR will provide a suitable basis for identification, protection and management of these assets
- the adequacy of the assessment of potential impacts on other structures and places of cultural heritage value and whether suitable minimisation or mitigation measures have been identified for the Project.

### 13.2 Historical heritage

#### 13.2.1 Issues

There are a number of discrete heritage places throughout the Project area. A high proportion are recognised in local Heritage Overlay provisions under the relevant planning schemes as identified in the EES. These range from historic buildings and plantings to culturally significant heritage places. Commonwealth Land included within the Project boundary also includes Department of Defence memorials of potential cultural heritage significance.

<sup>549</sup> At that stage, Manningham also asked a few questions of this witness.

Key issues relate to:

- whether cultural heritage values associated with the Heide MOMA complex will be suitably protected, including outdoor sculptures in surrounding parkland
- the inherent values and potential need for protection of the River Red Gum tree at the Caltex petrol station site at Bridge Road near the proposed Manningham Road interchange
- the extent of potential disturbance to heritage values associated with Department of Defence memorials at Simpson Barracks
- the historical heritage values of Stage 1 of the Eastern Freeway and Fairlea Womens Prison and potential impacts of the Project.

### 13.2.2 Evidence and submissions

Ms Gray gave expert evidence on behalf of the Proponent, summarising her findings that there are relatively few locations where Project works would intersect with or have the potential to impact historical heritage places or values.<sup>550</sup> No impacts (either direct or indirect) were identified for any places on the Victorian Heritage Register subject to comments below.

This was reflective of a strategy by the Proponent targeted at avoiding impacts to cultural heritage in line with the EES scoping requirement.

#### (i) Heide MOMA

The EES refers to the inclusion of Heide I (original farmhouse) and Heide II (modernist 1960s building) on the Victorian Heritage Register. Prior to this, the site was a significant Wurundjeri gathering place.

Heide MOMA delivered a written and oral submission to the IAC. It emphasised the significant assets on its site and the contribution it makes to Victorian culture, heritage and tourism. It also advised that its reputation as a prominent museum could be compromised unless proper management was put in place to protect its assets through the Project delivery phase.

Heide MOMA was also concerned to maintain the integrity of its parkland setting unaffected by Project infrastructure and to ensure the suitable storage and reinstatement of public art that may be impacted by Project works. This would include the prominent Helmet sculpture (by Tanya Court and Cassandra Chilton, 2007) on the mound in Banksia Park near the existing Manningham Road and Bridge Street intersection. It also considered that the impacts of vibration had not been confirmed as suitably minimised to protect its significant buildings and artwork.

The National Trust also made comparable submissions, calling for protection of artwork including outdoor public sculptures. It also considered that the Sentinel sculpture at the

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<sup>550</sup> Potential impacts of ground movement, groundwater drawdown and vibration were also considered, deferring to specialist technical reports.

Doncaster Road exit to the Eastern Freeway (by Inge King, 2000) had cultural heritage significance and that its relocation should be planned systematically.

Ms Gray was of the view that the EPRs proposed would ensure suitable protection of these assets.

**(ii) River Red Gum**

The Proponent submitted that the River Red Gum on Bridge Street in Bulleen is principally significant for its cultural heritage value.

Ms Gray observed that this tree is subject to the Heritage Overlay under the Manningham Planning Scheme.<sup>551</sup> She acknowledged the extent of community and social attachment to it and its status as a local landmark. She expressed a preference for its retention and protection from a heritage perspective, observing that its removal would otherwise result in the loss of all values.

**(iii) Simpson Barracks memorials**

Simpson Barracks is a Commonwealth Department of Defence site with a frontage to Greensborough Road that will be impacted directly by the Reference Design.

IAC Members had the benefit of an inspection of Simpson Barracks with the base manager. They were shown various memorials within the Project boundary that were likely to be affected by the works as shown on the Reference Design.

These included a cross memorial near the secure entrance facility which was described as not being in use, a squadron memorial including a flagpole and plaques and an open-air memorial used for ANZAC Day ceremonies comprising a small mound, flagpole, and two planted trees with plaques.<sup>552</sup>

**(iv) Eastern Freeway**

The IAC was informed partway through the Hearing that two applications<sup>553</sup> had been made to nominate Stage 1 of the Eastern Freeway<sup>554</sup> for the Victorian Heritage Register.

Ms Gray regarded this freeway and its associated setting of sufficient heritage value to justify its inclusion in the Victorian Heritage Register.<sup>555</sup> This reflects its design qualities which include a sequence of distinctive concrete bridges and its focus on an aesthetic integrated freeway setting, including naturalistic roadside cuttings with landscaping and tall lighting masts.

She noted that Project works within the freeway reserve would be extensive to facilitate substantial road widening, especially further east. However, she concluded that key freeway

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<sup>551</sup> HO24.

<sup>552</sup> These are described further in Document 302.

<sup>553</sup> A third was lodged post Hearing in relation to Fairlea.

<sup>554</sup> Between Hoddle Street, Clifton Hill/Collingwood and Bulleen Road, Balwyn North.

<sup>555</sup> Criterion A, D and E, following further consideration after Technical Report K was prepared.

attributes could be largely maintained by adherence to principles in the UDS and EPRs (LV1 and HH1), with the original freeway design likely to remain legible.

**(v) Fairlea Womens Prison**

This site is included in the Victorian Heritage Register.<sup>556</sup> The Reference Design indicates that proposed upgrades and extensions to shared pathways are proposed within the frontage of this property. The EES indicates that there is potential for archaeological artefacts within this area, possibly in connection with burial grounds at the former Yarra Bend Lunatic Asylum on that property.

Ms Gray was of the opinion that the heritage values of that site would be suitably maintained through the regime proposed by the EPRs, including the use of an Archaeological Management Plan if relevant.

Post-Hearing a nomination was received by Heritage Victoria as discussed in Chapter 2.8.4.

### **13.2.3 Discussion**

The historical heritage values of places within the Project area are generally well recognised and documented in the EES. For the most part, the IAC accepts that the Project area (and in particular, the alignment depicted in the Reference Design) is likely to avoid direct disturbance to key elements of identified historical heritage significance.

**(i) Heide MOMA and sculptural works**

Heide MOMA is a substantial cultural and historical asset of State significance.

Particular care needs to be taken to manage the effects of vibration on buildings, artwork and outdoor sculptures at Heide MOMA and this is addressed in greater detail in Chapter 8.4 (Noise and Vibration) and in EPR NV4. EPR HH3 would supplement this by requiring pre-construction surveys, detailed monitoring and post-construction surveys for operations with the potential to affect the structural integrity of heritage places.

A number of valued sculptures in the public domain along roadways and within parklands would be displaced by the Project, either temporarily or permanently, including Sentinel and Helmet. The IAC considers that these sculptures have at least local heritage significance and that the regime proposed in EPRs HH1 (Design and construct to minimise impacts on heritage) and HH3 (Monitor condition of heritage sites) would extend to their protection and relocation, which should be undertaken with input from the original artist/fabricator, the relevant council and historians (if relevant).

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<sup>556</sup> Its values are described in Technical Report K, Appendix C and impacts on the heritage place considered at pages 111-112.



In some instances, the physical setting of sculptures such as the Helmet sculpture in Banksia Park will substantially change as a result of the Project.<sup>557</sup> Consultation with affected stakeholders will be paramount to provide for their storage and re-erection or relocation to ensure acceptable outcomes. The IAC considers that the EPRs will also ensure that the relationship between these sculptures and their setting is considered and appropriately responded to.

### **(ii) River Red Gum**

Many submissions emphasised the local heritage status of the River Red Gum in the Manningham Planning Scheme, as well as its recent status as National Trust's Victorian Tree of the Year 2019. Significant numbers of residents, supported by Manningham, petitioned for its retention as a mandatory aspect of the design to be approved.

Ms Gray documented an element of the River Red Gum's significance as its connection with the pre-contact (pre-European) landscape. Mr Howell-Meurs explained that he had sought the views of Traditional Owners who confirmed that the River Red Gum was not a culturally modified tree and that it did not form part of Aboriginal song lines. Notwithstanding, both experts and the Registered Aboriginal Party, the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation, expressed a clear preference for the tree to be retained.

The IAC addresses the significance of the River Red Gum as a local community icon and landmark in Chapter 5.8 (Social). However, it does not consider that this tree is principally significant for cultural heritage value. That said, its cultural heritage value as a prominent, isolated remnant native tree in the urban landscape provides further support for the Proponent to be required to make every effort to preserve it.

### **(iii) Memorials at Simpson Barracks**

At this stage, based on the Reference Design, it is likely that some memorials at Simpsons Barracks would need to be relocated including certain plaques and flagpoles.<sup>558</sup> The Commonwealth Department of Defence's position is not known in this regard, but it appears that there would be potential for these to be re-sited elsewhere on the site if required to maintain a potentially comparable role in ceremonies and events.

### **(iv) Eastern Freeway**

The nature of works proposed to the freeway as part of the Project are extensive, including substantial road widening, changes to landscaping and topography and replacement of bridges. It is unclear at this stage whether notable features such as the central lighting masts could be retained or suitably relocated.

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<sup>557</sup> For example, the Helmet structure located on the edge of Banksia Park has a physical relationship with the Manningham Road/Bridge Street intersection, including the River Red Gum that can be viewed opposite. Its mounded setting is also central to its appreciation from the public domain.

<sup>558</sup> The IAC has recommended elsewhere for ecological reasons there should be no impacts on Simpson Barracks. This would also remove any impacts on memorials.

The UDS provides detailed guidance about which elements of the freeway are regarded as significant from both a heritage and character perspective and how the Project should be designed to respond.<sup>559</sup> Ms Gray reviewed this in more detail following further historic investigation of the values of this asset and has confirmed its appropriateness in conjunction with EPR HH1 (Design and construct to minimise impacts on heritage).

The IAC agrees. It considers this mechanism appropriate to guide suitably responsive development and to prioritise the retention of key elements of freeway infrastructure, although it notes that the freeway environment is likely to be impacted to a greater extent.

If Stage 1 of the freeway was included in the Victorian Heritage Register, additional permission would be required for certain Project works and it is likely a Conservation Management Plan would be prepared. This would represent a separate but complementary regime that could potentially be accommodated in parallel with the permissions being considered by the IAC for the purpose of the EES and PSA. Ultimately, the works to be approved under the Incorporated Document would need to meet the requirements of the *Heritage Act 2017*.

#### **(v) Fairlea Womens Prison**

The Project boundary intrudes only minimally into the frontage of this heritage place and works are likely to be confined to minor, largely surface works. In these circumstances, the IAC regards the management measures set out in the EPRs including HH2 (Implement an Archaeological Management Plan) as appropriate to mitigate impacts on any heritage assets together with any requirements that may be imposed by Heritage Victoria.

#### **(vi) Conclusion**

For the most part, the IAC concludes that the surface Project boundaries provide an acceptable starting point to avoid or minimise impacts on historical heritage. Residual effects are likely to be managed suitably by EPRs such as HH1 that require detailed design to minimise impacts where practicable, with input from local councils or Heritage Victoria as applicable.

Importantly, where there is a genuine risk, protective measures will need to be developed and implemented in consultation with the relevant heritage authority. In appropriate circumstances, HH2 will be invoked to require a targeted, Place-specific Archaeological Management Plan. The EPRs also suitably involve participation by Heritage Victoria for places on the Victorian Heritage Register in the event further permission may be required.

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<sup>559</sup> Reiterated in Table 1 of Document 255a. This includes consideration in corridor wide characterisations and discussion in the Yarra River Valley Area. Place-specific requirements are proposed, and a number of detailed requirements and benchmarks would apply.

### 13.2.4 Findings

The IAC finds:

- Provided the consolidated recommendations from this report are followed in respect of measures to protect structures from vibration and groundwater drawdown, their historical heritage values are likely to be suitably protected by the EPRs.
- Particular care needs to be taken when storing and reinstating public artwork, especially in Banksia Park, Heide MOMA and along freeways (if required). Stakeholder and expert input should be sought to achieve best outcomes.
- The cultural heritage value of the River Red Gum provides further support for greater efforts to be taken to preserve it. This will necessitate further consideration of suitable layout and grading of works within the Manningham Interchange.
- Works in Simpson Barracks have confined potential to affect historical heritage values.
- The UDS and EPRs provide a suitable framework for works to the Eastern Freeway (Stage 1) and Fairlea Womens Prison, but there is potential for the need for further permissions to be required if the Eastern Freeway is included in the Victorian Heritage Register during the final design or construction of the Project.

## 13.3 Aboriginal cultural heritage

### 13.3.1 Issues

The Project area has a rich Aboriginal cultural heritage. It encompasses many significant waterways and natural ecosystems, including the highly significant Yarra River and its tributaries. The Bolin Bolin Billabong and the Yarra River Flats also form part of a continuous Aboriginal cultural landscape.

The IAC was advised that the Proponent and its consultants have engaged in genuine and extensive, early engagement with the Registered Aboriginal Party, Aboriginal Corporation and Traditional Owner Groups (collectively referred to as Aboriginal parties) and in seeking to identify heritage values, impacts and mitigation measures. Notwithstanding, the EES is far from comprehensive in identifying these values.

For the most part, the EES seeks to defer to a CHMP<sup>560</sup> prepared under the *Aboriginal Heritage Act 2006* which would require approval before works could commence (excluding certain preparatory works identified in the Incorporated Document).

Key issues are:

- the extent and nature of Aboriginal engagement
- whether a CHMP would provide an effective mechanism to protect Aboriginal cultural heritage values throughout the Project area and broader areas that may be affected

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<sup>560</sup> A CHMP is compulsory for any project requiring an EES.

- how the risk analysis was undertaken
- potential impacts of the Project on registered Aboriginal cultural heritage places within the Simpson Barracks
- concerns about possible impacts to sensitive areas including waterways and billabongs, especially the Bolin Bolin Billabong
- the need to integrate and reflect Aboriginal cultural heritage values and identity in the UDS in a meaningful, ongoing way.

### **13.3.2 Evidence and submissions**

#### **(i) Extent and nature of engagement**

Overall, submissions emphasised the need to meaningfully engage with the Wurundjeri Woi-wurrung people at all stages of the Project and to minimise effects on Aboriginal cultural heritage. The importance of the Bolin Bolin Billabong was emphasised by many submitters including environmental groups.

The Wurundjeri Woi-wurrung Aboriginal Heritage Corporation explained that its people make no distinction between cultural and natural values; they are one and the same. It advised:

A Cultural Values assessment report is currently in preparation for the North East Link project area. This project runs parallel with a Cultural Heritage Management Plan. The aim of the cultural values assessment is to identify and report on the tangible and intangible values associated with the North East Link alignment. The results and recommendations from the assessment will then inform the cultural heritage elements of an Urban Design Strategy.<sup>561</sup>

The Birrarung Council confirmed that work by the Proponent and its consultants to date had been productive but urged the IAC to take a broader view of the need to protect the Yarra River as an integrated, living entity. It considered that EES objectives should aim higher than to just minimise effects on the Yarra River; rather they should seek to improve its values. Mr Howell-Meurs confirmed that Yarra Bend Park, for example, was not expected to undergo any impact to its cultural heritage aside from the existing road reserve for the Eastern Freeway.

Mr Axford was concerned to ensure that Wurundjeri Woi-wurrung values were suitably incorporated in the design of the Project. He pointed to aspects of the UDS seeking collaboration with Aboriginal parties and queried how their input and partnership could be assured.

The Proponent explained that it had a dedicated partnership with Traditional Owners and related entities and that it would continue to provide support for their participation to refine the design and ensure suitable delivery of the Project.

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<sup>561</sup> Submission 700.

**(ii) Cultural Heritage Management Plan**

Mr Howell-Meurs confirmed that the CHMP currently under preparation as a parallel process covers the entire Project area (including relevant areas of the Simpson Barracks) in addition to a 300 metre buffer in all areas.<sup>562</sup> Based on investigations to date that revealed further artefacts but no 'higher order' heritage places, he was of the view that it was not necessary to change the Project alignment to suitably protect Aboriginal cultural heritage values. He also considered there was scope for mitigation such as raising natural ground levels (or avoiding ground disturbance) in certain construction compounds.

**(iii) EES risk analysis**

In response to questions by the IAC, Mr Howell-Meurs confirmed that the works would have the potential for significant impacts on places such as Banksia Park and assumed cultural heritage values and although this was unavoidable, it was manageable through detailed requirements to be documented in the CHMP.

The Wurundjeri Woi-wurrung Aboriginal Heritage Corporation explained:

It is...necessary to include a process that considers and responds to the potential risks of relocating artefact bearing soils that are excavated during the construction phase of the project. Beyond this, it is important to be aware that tangible and intangible cultural heritage values and connection to place may be maintained for areas that have been previously impacted by development; this is particularly true for Traditional Owners.<sup>563</sup>

Considering this and other potential impacts, Mr Howell-Meurs was asked to explain his risk analysis, whereby no risks to Aboriginal cultural heritage were rated greater than 'medium'. He explained that although disturbance to Aboriginal cultural heritage was likely throughout the Project, it was highly unlikely that unique aspects such as burial places would be found or disturbed in the Project area. This was based on extensive exploration to date comprising both standard and complex assessments that had essentially located only isolated artefact deposits (including within a small reserve south of the Lower Plenty Road intersection).

Mr Howell-Meurs also confirmed that impacts of vibration in connection with Project works were unlikely to impact cultural heritage artefacts given the broad underlying geography. In any event, he considered physical management techniques were available to suitably mitigate these impacts.

**(iv) Values in Simpson Barracks**

Some submitters were concerned that the Project would result in two registered scar trees being de-identified as indicated in the EES. Mr Howell-Meurs confirmed in his evidence that the reason for the proposed de-registration was that, on further review, the Wurundjeri

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<sup>562</sup> Document 182 confirms the areas that are under further investigation as part of this process in response to questions by the IAC.

<sup>563</sup> Submission 700.

Woi-wurrung had confirmed that these had been incorrectly identified as scar trees so this was simply a necessary correction.

**(v) Bolin Bolin Billabong**

The Bolin Bolin Billabong is an important natural feature adjacent to the Project area as represented in Figure 34. It has been identified in the Map Book as a “conditional no go zone”. It consists of a permanent pool with extensive wet/dry ‘arms’ in a vegetated setting and is one of very few remaining billabongs in the Middle Yarra environs.

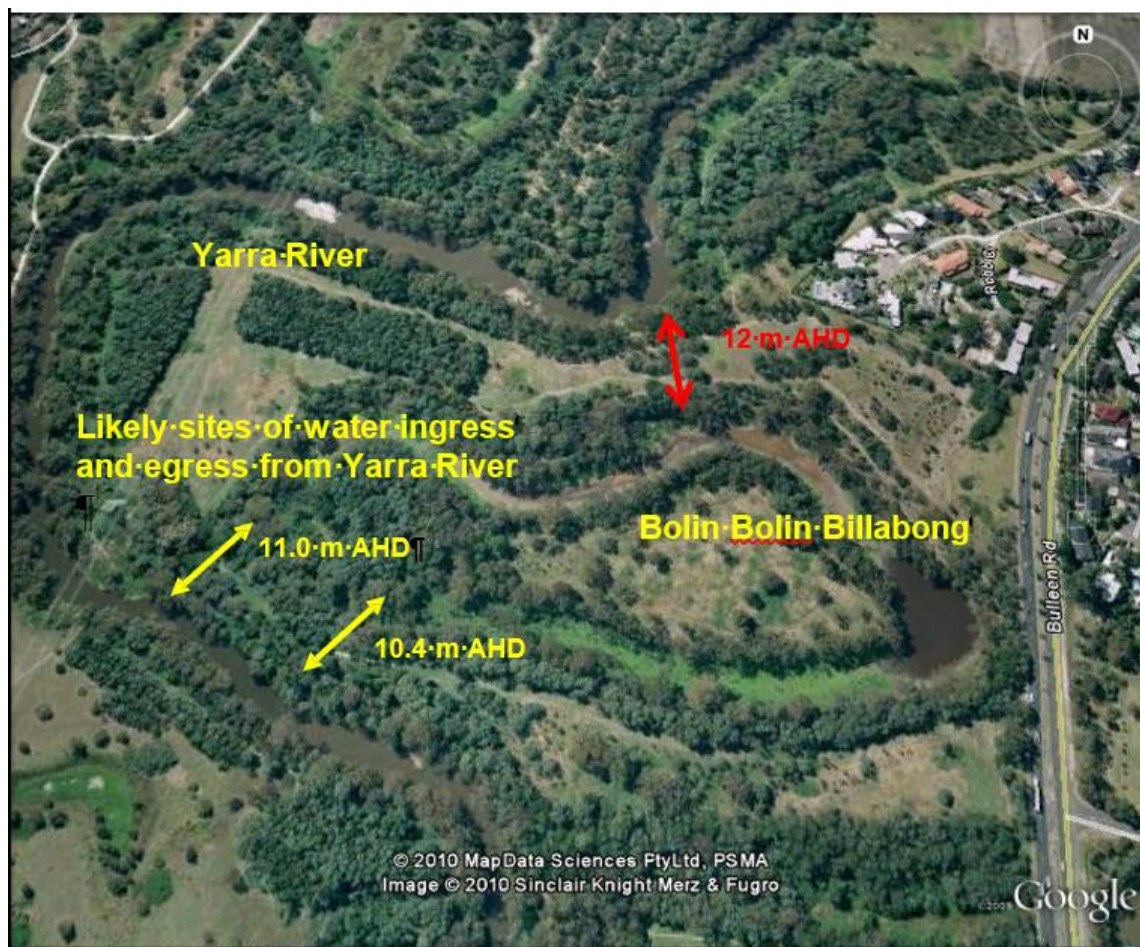


Figure 34 Aerial photo of Bolin Bolin Billabong<sup>564</sup>

The values of the Bolin Bolin Billabong were not fully documented as part of the EES or in expert witness reports although it is understood that this was a significant destination for Aboriginal people used for multiple camp sites, hunting and fishing (including eel and fish harvesting). Technical Note 50 was subsequently prepared on behalf of the Proponent to provide further information from the Historical Place Record on the Victorian Aboriginal

<sup>564</sup> Tabled document 150, Figure 3.2, page 15.

Heritage Register.<sup>565</sup> It confirmed records of Aboriginal use of the billabong and surrounds in the 1840s.

In response to questions at the Hearing, Mr Howell-Meurs appeared to accept that the vegetated setting of the place contributes to its overall cultural heritage significance, in addition to the values directly attributed to areas covered by water. However, he deferred to other experts in identifying whether the likely impacts of groundwater drawdown could be managed suitably.

### **13.3.3 Discussion**

It is clear from the EES risk assessment as confirmed by Mr Howell-Meur's evidence that places of Aboriginal Heritage significance (both known and unknown) would be affected by the Project. The IAC is unable to be confident about the extent of this impact at this point in time. Notwithstanding, it is satisfied that the process for preparing and approving the CHMP, together with legislative protection of Aboriginal cultural heritage, is adequate to address and manage the effects of the Project.

In particular, the CHMP process is far more structured and comprehensive for the activity area (including the entirety of the Project area and a 300-metre buffer beyond it) than comparatively preliminary research undertaken as part of the EES process. It is also well equipped to deal with both anticipated and unforeseen disturbances to Aboriginal cultural heritage in conformity with current legislative requirements.

The Proponent confirmed that no substantive works (even preparatory works) can pre-date the approval of the CHMP by the Registered Aboriginal Party, except for investigative works that are exempt under relevant legislation. This constitutes an appropriate protective measure.

The IAC is satisfied that the UDS makes suitable provision for collaboration with Aboriginal parties when developing design themes and key features of Project infrastructure. It will also be important for the proponent to continue to support Aboriginal parties to participate fully in these initiatives, including the UDAP.

The values associated with the Yarra River are of primary importance to the Aboriginal and broader community. For the most part, the proposed alignment seeks to avoid works that may physically affect the riparian environment. Even so, much of the broader setting is influenced by the values and physical influence of the Yarra River and its tributaries.

It is not entirely clear to the IAC whether the YRP Act applies to the Project given the operation of the MTPF Act. Irrespective, the IAC recommends that its objectives be more transparently incorporated into the UDS to ensure that Aboriginal cultural heritage values and broader values are suitably respected and addressed in all elements of the Project.

The Bolin Bolin Billabong is a highly significant Aboriginal cultural heritage place. It requires the utmost care to ensure that its values are retained and enhanced where possible. This

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<sup>565</sup> Document 218.

includes all elements that contribute to this place, including its waterway values, vegetation and broader setting. Provided all recommendations seeking to prevent groundwater drawdown effects are implemented fully as per Chapter 10.2 (Groundwater) in perpetuity in combination with the currently designated “conditional no go zone” for the purpose of these restorative works, the IAC considers it is likely that these values will remain intact.

### **13.3.4 Findings**

The IAC finds:

- The Project will result in impacts to Aboriginal cultural heritage, most likely to currently unidentified artefacts. This is best addressed through the CHMP that is required for the Project and associated works in conjunction with legislative requirements.
- Overall, the IAC accepts the evidence on behalf of the Proponent that compliance with EPR AH1 that would require adherence to and implementation of an approved CHMP would suitably minimise impacts on Aboriginal cultural heritage.
- At this stage, the Project is not expected to have any negative effects on any confirmed culturally modified scar trees.
- Subject to refinement to include reference to the objectives of the YRP Act, the UDS provides an appropriate framework to recognise and incorporate Aboriginal cultural heritage values.
- Impacts on the Yarra River and its tributaries, both direct and indirect, warrant particular attention in the UDS and EPRs. One element is to ensure that groundwater drawdown effects are managed reliably and competently to avoid potential impacts on vegetation that is an important element contributing to significance of the place.

### **13.4 Recommendations**

The IAC recommends that a number of Project impacts on the River Red Gum, Simpson Barracks need to be avoided. The IAC has also recommended that Aboriginal cultural heritage be protected, and the ongoing involvement of the Wurundjeri Woi-wurrung be supported.



## 14 Health and wellbeing

Health is addressed in Chapter 18 in the EES and Technical Report J prepared by EnRisks.

The relevant evaluation objective for health amenity and environmental quality is:

To minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the project.

The EES also identified that the evaluation objective for social, business, land use and infrastructure is also relevant:

To manage effects of the project on land use and the social fabric of the community with regard to wellbeing, community cohesion, business functionality and access to goods, services and facilities.

The following evidence was called in relation to Health:

- Proponent - Dr Jackie Wright from EnRisks
- Friends of Banyule – Dr Jason Thompson from the University of Melbourne
- Friends of Banyule – Dr Vicki Kotsirilos from Dunstan Dental and Medical (Dr Kotsirilos prepared an expert statement but did not attend the Hearing)

A conclave was held via teleconference on 30 July 2019. Participants were Dr Wright and Dr Thompson.<sup>566</sup> Mr Benjamin Edokpolo from EPA attended as an observer. Dr Kotsirilos also attended but declined to contribute to the meeting report.

The EES identified the following potential health impacts from the Project:<sup>567</sup>

- changes in noise and vibrations
- changes in air quality from tunnel ventilation
- changes in air quality from surface roads
- in tunnel air quality from vehicle emissions
- exposure to contaminated land
- health implications from social changes.

The health impact assessment (HIA) attempted to compare the Project's impacts with a 'no Project' scenario; that is assessing the incremental impacts of the Project rather than assessing health impacts from first principles. The assessment was undertaken using guidelines where available for measurable impacts such as noise, vibration and air quality and a risk assessment for more qualitative elements of the assessment.

In this sense the HIA is derivative of other specialised studies, particularly in relation to air quality and noise. As those studies generally found that standards should be able to be met; the overall health impacts are consequently found to be acceptable.

<sup>566</sup> Document 123.

<sup>567</sup> EES Chapter 18.

A summary of the outcomes of the HIA are shown in Table 12.1 of Technical Report J.<sup>568</sup> The HIA concluded for construction that mitigation measures through EPRs will manage the impacts of dust, noise and vibration. Temporary loss of green space during construction can be mitigated through access to existing or alternative sporting facilities.

For operation, the HIA concluded that there will be a redistribution of health impacts as a result of air quality but overall there should not be a significant or measurable impact on human health.

With the exception of construction, the overall noise impacts are expected to reduce as a result of the Project, and where there are predicted increases or mitigation proposed there will be no significant health impact.

The HIA documented that other positive impacts such as faster travel times should result and other negative impacts such as increased stress and anxiety levels, can be managed through EPRs such that there would be no significant health impacts.

## 14.1 Key issues

The IAC considers the key issues are:

- whether the methodology of the HIA and its results are appropriate
- whether the Project adequately proposes to mitigate predicted health impacts.

## 14.2 Evidence and submissions

Dr Wright's evidence for the Proponent was consistent with her work in Technical Report J. She reviewed approximately 150 submissions which raised health impacts as an issue and provided a response in Section 6.3 of her statement.<sup>569</sup> The review of submissions and responses did not lead her to recommend any changes to the EPRs relevant to her area of expertise.

Dr Thompson was called to give evidence by the Friends of Banyule. His evidence focused on the three following areas:<sup>570</sup>

- Road trauma; increasing the number of high-speed roads will likely result in higher levels of road trauma.
- General health and wellbeing around the development; suggesting that the area traversed by the Project (as a middle suburbia or urban fringe area) is an area likely to have the lowest levels of perceived general health, and the highest levels of overweight and obesity among all areas studied in Melbourne. His evidence was that such areas are associated with poorer perception of life satisfaction, mental health, more time spent driving and feeling less safe after dark.
- Whether the rapidly changing technology of autonomous vehicles will render the financial case for the Project redundant.

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<sup>568</sup> Page 191.

<sup>569</sup> Document 24I.

<sup>570</sup> Document 26a.

Dr Kotsirilos also prepared an expert witness statement for Friends of Banyule<sup>571</sup> but did not appear at the Hearing. Her evidence went to the issue of air pollution from vehicle emissions. Dr Kotsirilos' concerns with the Project went to:

- Does the Project adequately respond to the latest science on air pollution and health?
- Is there evidence the Project will have local air quality health impacts on residents and workers?
- Have the air pollution health concerns been adequately addressed in the EES?
- Have residents within 250 metres of the Project been adequately informed of emissions and health impacts?

Her evidence drew upon a number of sources, including the EPA submission<sup>572</sup> to support the contention that there is no safe lower limit for air pollution.

The Department of Health and Human Services submitted<sup>573</sup> that EPA had been closely involved in Project development and that the Project was not likely to result in '*significant or measurable*' impacts on community health if EPRs are implemented. The Department emphasised the need to protect and promote health during construction and operation.

In the conclave, Dr Wright and Dr Thompson agreed that road trauma needed to be considered; with Dr Wright noting that while traffic crashes had been considered in the HIA and should be reduced on the new roadway, the nature of higher speed crashes specifically had not been considered.

There was partial agreement on the two other matters raised by Dr Thompson, with disagreement remaining largely due to differences in view on the scope of the HIA to consider the Project as opposed to broader transport and community health issues.

The DoT<sup>574</sup> submitted that freeways, when compared to arterial roads are:

- approximately 25 times safer to drive from a casualty crash perspective
- four times safer from a fatality crash perspective.

Many individual submitters along the route of the Project were concerned in relation to health impacts, particularly in the areas of noise and air quality. Many submissions also raised the broader issues of health impacts of loss of open space and green areas. The impacts on active open space and environmental values of the Project are discussed elsewhere in this report.

Individual submitters and groups such as Residents United Against North East Link Option A (RUANELA).<sup>575</sup> highlighted the importance of quality open space in areas such as along the Koonung Creek and other parts of the Project area for walking, socialising, exercising, dog walking and just being outdoors.

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<sup>571</sup> Document 26c.

<sup>572</sup> Submission 600.

<sup>573</sup> Submission 754.

<sup>574</sup> Document 177, paragraph 4.

<sup>575</sup> Submission 480.

The Planning Institute of Australia provided a submission on a range of planning and infrastructure issues.<sup>576</sup> In the Hearing it provided a copy of the *Healthy Spaces and Places Guide*.<sup>577</sup> One of the elements of this guide is the importance of green space and activity for both physical and mental health. For example:

There is growing evidence that attractive well-designed public open space is restorative, reducing mental fatigue and stress.<sup>578</sup>

And:

Current research shows strong links between people's overall health (mental and physical) and regular physical activity.<sup>579</sup>

Dr Lindsay for the Yarra Riverkeeper tabled a press release from the Victorian Government from April 2017 titled *Victorian Memorandum for Health and Nature*.<sup>580</sup> The Memorandum identified a range of Government policies aimed at the relationship between health and open space. It stated:

Our parks and other open spaces provide critical settings that enhance our wellbeing and liveability by providing places for physical exercise, relaxation, play, learning and discovery. We know that being in nature enriches our minds and bodies, making us feel energised and alive.

### 14.3 Discussion and conclusion

In closing, the Proponent encouraged the IAC to adopt the conclusions of the West Gate Tunnel IAC in that the HIA (also undertaken by Dr Wright) was reasonable and provides an acceptable approach to considering health impacts; and EPRs can manage any residual impacts to an acceptable level.<sup>581</sup>

As per that Project assessment, this IAC considers that in-principle, the methodology is sound and follows that adopted for other recent major projects. Where the health impacts derive from measurable standards such as for air quality and noise, the IAC accepts that the health impacts can be managed to an acceptable level if the technical and design measures to reduce those impacts to within the applicable standard are implemented. The impact of noise and night-time noise limits is discussed in Chapter 8.

The IAC also notes and accepts the general evidence of Dr Kotsirilos in relation to air pollution that there is no safe lower limit for health impacts of air pollution. As she quoted, the EPA also acknowledged this in its original submission and in the Hearing,<sup>582</sup> submitting that there are adverse health impacts below current air quality standards.

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<sup>576</sup> Submission 674.

<sup>577</sup> Document 357c.

<sup>578</sup> Document 357c, page 4.

<sup>579</sup> Document 357c, page 4.

<sup>580</sup> Document 155.

<sup>581</sup> Document 434, paragraph 499.

<sup>582</sup> Document 168, paragraph 59.

Air quality standards, which have been tightening for decades and are likely to continue to do so, are not designed for there to be no health or environmental impacts; they are designed to reduce the overall impact to a level society deems ‘acceptable’. The Project is not required to either address existing air quality impacts, nor produce zero air quality impact, but rather to show that it can meet the applicable standards and not contribute unacceptably to worsening health impacts. As discussed in the air quality chapter the IAC considers it can do so.

Logically it would seem moving heavy vehicles and significant light vehicle traffic loads on to the freeway network will have improved road traffic accident and trauma outcomes; certainly if measured on a per kilometre basis and in absolute terms.

The IAC acknowledges Dr Thompson’s evidence on road trauma. Submissions from others such as the DoT that freeway standard roads are inherently safer per kilometre travelled and the removal of much heavy vehicle traffic from arterials such as Rosanna Road perhaps should be balanced against Dr Thompson’s higher speed road = higher speed crash = more severe road trauma argument.

In relation to social impacts on health in the EES, the IAC notes that Dr Wright in Technical Report J recognises the difficulty in quantifying impacts:<sup>583</sup>

There are a wide range of complex factors that influence health and wellbeing, specifically mental health. It is not possible to determine any specific outcomes that may occur as a result of a specific project or a number of projects.

Technical Report J noted there are a range of stressors in the urban environment; and recognised that while there may be operational benefits to social impact, there will need to be long term management of social impact from construction.

The IAC notes that the risk assessment<sup>584</sup> for construction – social concludes that risk is low for both changes from altered access or connectivity (HE05) and the temporary loss of green space (HE06).<sup>585</sup> Given the duration of construction and very significant detrimental impacts to green spaces along the route the IAC does not understand how a low risk could be allocated when the technical report itself identifies uncertainty in this area.

The mitigation of these impacts is shown in Table 18-5 of Chapter 18 of the EES and essentially includes consultation and engagement to ensure the community is aware of construction activities and the provision of replacement areas; reducing impacts on car parking; providing alternative routes for cycling and walking; providing replacement sports facilities; and the long-term replacement of tree canopy.

The IAC understands that this is a technical assessment, but it does very little to appreciate the deep understanding and affection that submitters have for the green spaces along the route. This includes the areas along the Eastern Freeway (north and south side), impacts on

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<sup>583</sup> Technical Report J, page 179.

<sup>584</sup> The IAC has been critical of the Project risk assessment elsewhere in this report.

<sup>585</sup> Chapter 18, Table 18-4.

the Bulleen Parklands and other green areas. Removing these areas the community values are considered to be significant health and wellbeing impacts.

Identifying replacement sports fields is important and must be done; this is very different however to the deeper understanding needed of potential health impacts of removing passive, local, attractive open space.

People and communities get very attached to their local parklands, this was evident in the Hearings, acknowledged by the IAC to be very stressful in themselves, where attachment to place was starkly apparent in the depth and emotion of submissions.

The IAC considers the health impacts of this element have not been managed to any significant degree, and the Reference Design approach has left little opportunity for realistic and definite mitigation proposals to be brought forward to provide some degree of comfort for those most affected.

There are no specific EPRs for health and wellbeing, but the IAC recommends significant alterations to EPRs which have an impact in this area.

#### **14.4 Findings**

The IAC finds:

- Overall, the HIA is fit for purpose and for most elements the identified risks can be managed including:
  - Air quality (tunnel ventilation, road-based emissions, combined and during construction)
  - Noise and vibration
  - Exposure to contamination.
- For those items identified above, the IAC has recommended changes to EPRs as appropriate.
- The degree of health effects from social impacts, and particularly medium-term loss of access to green and community space, are uncertain and thus a conservative approach to managing these effects should be taken; additional EPRs are recommended to be applied.

#### **14.5 Recommendations**

The IAC recommends that revisions be made to EPRs in the areas of air quality, noise, and others with the potential to impact on human health and wellbeing. Significant changes to EPRs for Flora and Fauna, Landscape and Visual and Social and Community are proposed by the IAC to further mitigate potential impacts on health and wellbeing.

## **PART C: PROJECT IMPLEMENTATION**





## 15 Environmental Management Framework

The EMF including the exhibited EPRs is addressed in Chapter 27 of Volume 4 of the EES Main Document. The EMF, along with the UDS, are components of the Proponents Environmental Management System (EMS).<sup>586</sup>

Section 3.6 of the EES Scoping Requirements<sup>587</sup> states that:

...the EMF in the EES should provide a transparent framework with clear accountabilities for mitigation, managing and monitoring the environmental effects and hazards associated with the construction and operational phases irrespective of the final form of the ultimate design to be implemented for the project.

The EES Scoping Requirements also state<sup>588</sup>:

An important aspect of the EMF is governance, continuous improvement and complaints management.

The purpose of the EMF is to provide a transparent framework to manage the environmental effects identified in the North East Link EES in order to meet statutory requirements, protect environmental values and sustain stakeholder confidence. As part of the EMF, EPRs are prepared as a suite of performance-based environmental standards and outcomes that apply to the design, construction and operation of the Project.<sup>589</sup> Exhibited EPR EMF numbers EMF1 to EMF3 specifically deal with matters relating to the EMF.

Clause 31 of the Terms of Reference requires the IAC to make recommendations in relation to:

- (g) the structure and content of the proposed EMF; and
- (h) any changes to the proposed EPRs.

In understanding the role of the EMF, it is important to understand its relationship with the EES.

### 15.1 The role of the EES

The Public Works Order made under section 3(1) of the EE Act by the Minister for Planning on 2 February 2018 sets out the matters to be investigated in the EES. The Scoping Requirements replicate these matters and specifically state:<sup>590</sup>

The EES will address the significant effects of all components and stages of the project upon the environment – being the physical, biological, heritage, cultural, social, health, safety and economic aspects of human surroundings, including the wider ecological and physical systems within which humans live.

<sup>586</sup> EES Volume 4 Chapter 27, Figure 27-2, page 27-10

<sup>587</sup> Scoping Requirements for North East Link Project EES June 2018.

<sup>588</sup> Scoping Requirements section 3.6 page 9.

<sup>589</sup> EES Volume 4 Chapter 27, page 27-1.

<sup>590</sup> Scoping Requirements section 3.1 page 7.

Preparation of the EES and the necessary investigations should be consistent with the principles of a systems approach, so that each effect is also assessed for its interaction with other parts of the environment. Moreover, the EES approach should be risk-based, so that a greater level of effort is directed at investigating and addressing those matters that pose relatively higher risk of adverse effects.

The EES should put forward a sound rationale for the level of assessment and analysis undertaken for any particular environmental effect or combination of environmental effects arising from construction and operational stages of the project.

## 15.2 Key issues

### 15.2.1 The exhibited EMF and EPRs

Beyond this, there were no substantial submissions made in respect of the EMF; rather most of the issues related to the wording of the EPRs.

#### (i) EMF

A matter that arose through the course of the Hearing was whether there was a need to include ‘statutory’ environmental auditors in the governance and review process embedded in the EMF to satisfy the Independent Environmental Auditor (IEA) role. The EPA submitted that it supports a requirement for a statutory auditor to be included as a member of the IEA, rather than include the statutory auditor within various EPRs (such as determining “Unavoidable Works” (EPR NV4), groundwater modelling (EPRs GW1 and GW2), and the spoil management plan (EPR CL1).<sup>591</sup>

The EPA also requested that the EMF and the instruments issued pursuant to it be updated to respond to the new legislative regime with the impending *Environmental Protection (Amendment) Act 2018* (EP (Amendment) Act). The Proponent advised the IAC that these changes would be included in a revised EMF to be prepared for Ministerial approval under the Incorporated Document.

#### (ii) Scope of the EPRs

According to the EES, the exhibited EPRs are described as defining the minimum environmental outcomes that must be achieved during project design and delivery. They are not the impact assessment itself.

In respect to the scope of the EPRs, the Proponent suggested the following criteria provide a useful framework to guide the IAC’s assessment:

- (a) First, does the EPR properly describe the environmental impact that is to be managed?
- (b) Second, does the EPR establish an appropriate benchmark in respect of delivery of the Project?
- (c) Third, does the EPR properly provide for the preparation and implementation of appropriate management plans where necessary?

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<sup>591</sup> Document 395, paragraphs 16-21.

- (d) Fourth, does the EPR properly provide for, or sit in a framework which, properly provides for consultation with stakeholders and affected persons?
- (e) Fifth, is the EPR sufficiently robust to account for alternative design options from the reference project and within the project boundary?
- (f) Sixth, does the EPR properly acknowledge its relationship with other EPRs?<sup>592</sup>

Mr Townshend QC said that the use of EPRs in Victoria is now well advanced for major infrastructure projects and could be well understood in a context that is established practice.

The Birrarung Council raised concerns with the scope of the EPRs and that they “*will be too narrowly focussed on minimising impact on the current state of the Yarra. The Council believes that such a low bar is totally unacceptable for what is probably by far the biggest infrastructure project within the Greater Yarra Urban Parkland and Yarra River lands in a generation*”.<sup>593</sup>

There were many issues raised by submitters regarding particular EPRs and proposed changes to them, especially those relating to arboriculture, business, biodiversity, groundwater, land use planning, noise, social and community, and surface water. Issues regarding particular EPRs are addressed in individual chapters of this report and summarised in the findings below (17.5).

In regard to EPRs relating to the EMF (EMF1 – EMF3) the IAC asked a number of experts whether a statutory auditor should be included within EMF3 as part of the IEA role. There was a mixed response, depending on whether the expert thought that the IEA already included such a person. As stated above, the EPA submitted that this matter should be reinforced within a revised EMF rather than the EPRs.

Issues of governance, reporting, compliance and complaints were also raised in submissions. The IAC asked the Proponent whether a new EPR EMF4 should be included to provide for a complaints management system, like other major infrastructure project EPRs. Its response was that it did not consider it necessary to have a separate EPR, as this is already addressed in EPR SC2.

## 15.3 Discussion

### 15.3.1 EMF and EPRs

The IAC finds that the EMF provides a sound basis to establish the ongoing management and monitoring of the environmental performance of a major infrastructure project such as this.

As noted in other Committee reports for major State infrastructure projects, there are no set rules that govern what must or must not be included in EPRs. A judgement is required as to the level of detail and information required in association with the particular project and EPR topic. The IAC agrees with the EPA’s suggested changes regarding governance and updated reference to the new legislation and notes that these will be included in the final EMF for

<sup>592</sup> Document 34a, paragraph 37.

<sup>593</sup> Submission 742.

Ministerial approval. Section 27.2 'Roles and responsibilities of the exhibited EMF' will also need to be amended prior to approval by the Minister to reflect the role of the statutory auditor within the role of the IEA.

The EPRs will be given prominence in the Incorporated Document via clause 4.5. That provision sets out the requirement for the EMF, including approval of the EMF by the Minister for Planning. At clause 4.5.1, the EMF must include EPRs and at clause 4.5.2 the EMF must set out the process and timing for development of the Construction Environmental Management Plan (CEMP), Site Environmental Management Plan (SEMP) and other plans and procedures called for in the EPRs. The IAC does not consider it necessary for the Minister for Planning to approve these other plans, however audit reports of compliance with the EMF, CEMP, Operational Environmental Management Plan (OEMP) and SEMP from the IEA will need to be made publicly available on a regular basis under the EPRs.

The IAC has made suggested changes to the Incorporated Document to ensure the EPRs do in fact monitor and manage the environmental effects of the Project for all components of the Project where relevant. This includes for the establishment of construction compounds and the categories of permitted works to ensure that environment effects are minimised as far as possible and appropriate consultation with stakeholders occurs.

Submissions from Council and other parties to the Hearing on EPRs suggested changes that in some areas were quite detailed and prescriptive. Where relevant and agreed to by the IAC, changes that reflect the overall intent of the detail have been made. For example, the Proponents EPR AR3 Tree Canopy Replacement Plan and Councils proposed new AR4 'understorey replacement plan' have been reworded as one revised EPR AR3 covering both trees and understorey planting.

The IAC asked the Proponent to clarify who will be ultimately responsible for delivering the EPRs. Mr Morris QC responded that the State of Victoria is the legal entity, which can sue and be sued.<sup>594</sup> Mr Peake, for the BBW Councils, said that the entity needs to be the DoT and Mr Watters for Manningham suggested it needs to be one person within the DoT, such as the Secretary, that can coordinate the implementation and enforcement of EPRs. It is particularly relevant in relation to, for example, identifying who is responsible for ensuring like-for-like replacement of open space.

In respect of EMF, the IAC does not propose any significant changes. The matters raised by Friends of Banyule are covered by the need for an EMS as described in Chapter 27 of the EES.

Key changes proposed by the IAC in response to submissions from Councils and other submitters including Friends of Banyule, Warringal Conservation Society, Ms Giovas and the Yarra Riverkeeper Association to EPRs concerning the EMF are:

- EMF2 – changes to reflect the issues raised by Councils for EMF3. Includes the need to consult with stakeholders such as Councils, DELWP, EPA, Melbourne Water and Parks

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<sup>594</sup> Document 343, page 3.

Victoria in the preparation of relevant plans, rather than include an additional review board as proposed by Councils for EMF3.

- EMF3 – Councils expressed a view for statutory auditors to be included in the IEA. A number of Proponent and Council experts also expressed the desire to have statutory auditors review certain plans called up under the various EPRs (such as groundwater and contamination). The Proponent responded by submitting that the EMF will be revised to include a statutory auditor as part of the IEA. The IAC sees no reason why this should not be made more apparent in the EPR itself so that there is a transparent process for contractors and stakeholders.
- EMF3 - some submitters proposed a ten-year timeframe (instead of two) for audit reports to be made public. IAC agrees with these parties that given the duration of the Project and the proposed impacts; two years is not reasonable. The IAC has recommended a five-year audit timeframe.
- New EMF4 – Environmental Complaints Management. The IAC notes the Proponent’s submission that it believes such an EPR is not warranted because there is a complaints process within EPR SC2, however the purpose of the EMF EPRs are to provide guidance for the overall EPRs and it is important that a complaints management system applies across all relevant areas and not only embedded within “social and community engagement”. This is also a requirement of an EMS and the risk assessment process within the Australian Standard (*31000: 2009 and 2018*).

## 15.4 Conclusions

The IAC concludes that, like other EES’ in the past decade, the EMF (including the EPRs) is generally a sound and robust framework for managing the environmental effects of the Project during its detailed design, construction and operational stages. The Minister for Planning must approve the EMF and the IAC is comfortable that the Incorporated Document (subject to IAC’s changes at Appendix F) provides the transparency and certainty to manage environmental effects of the Project.

Strengthening the role of the IEA to include a statutory auditor also provides the IAC with a level of certainty that various plans called up under the EPRs will have some transparency as well as being reviewed by experts.

The IAC notes that the Proponent has responded to requests for some changes to the EPRs during the course of the Hearings and is commended for doing so. However, a number of changes from submitters such as Councils, environmental groups such as Friends of Banyule, Warringal Conservation Society, Yarra Riverkeeper Association and submitters including Ms Giovas, as well as through expert evidence have been included where the IAC thinks they are warranted. The IAC has also acted as an independent arbiter when changes were recommended by experts called by the Proponent, but the Proponent has not supported these changes in full.

Appendix G presents the IAC’s recommended changes to the EPRs compared to the ‘final draft’ circulated by the Proponent (Document 411). The IAC recommends that the Minister for Planning adopt the IAC’s version.

## 15.5 Findings

The IAC makes the following findings in relation to the proposed EMF:

- The EMF (including the EPRs) is generally a sound and robust framework for managing the environmental effects of the Project during its detailed design, construction and operational stages.
- The use of EPRs as the primary means of setting the framework for avoiding, monitoring and mitigating environmental risks associated with the Project is supported.

### 15.5.1 Summary of IAC assessment of EPRs

The IACs assessment of the EPRs is summarised as follows:

- Chapter 3 deals with transport and traffic and connectivity and proposes minor changes to the traffic EPRs
- Chapter 4 addresses business impacts and includes substantial changes to EPRs BNEW2, BNEW3, B4 to introduce individual business plans and individual employee plans.
- Chapter 5 addresses social impacts and includes minor changes to EPRs SC1, SCNEW2 and substantial changes to SCNEW1, SC2 and SC4 to enhance requirements around acquisition, social and amenity impacts, the Community and Consultation Engagement Plan and a new Facilities Relocation Plan (SC4).
- Chapter 6 deals with impacts on biodiversity and arboriculture and recommends changes to biodiversity EPRs AR1 to include retention of the River Red Gum (Caltex Tree) where practicable; EPR AR3 to include further requirements for the Tree Canopy Replacement Plan including understory plantings; FF1 has been amended to include a requirement for a Kangaroo Management Plan; FF2 includes Simpson Barracks and trees at Macleod Station (to protect habitat for Swift Parrot) as no-go zones; and FF6 to enhance groundwater monitoring of the Bolin Bolin Billabong.
- Chapter 7 addresses visual, landscape and urban design impacts of the Project and recommends changes to landscape EPRs LV1 to enhance the UDS; LV2 to include a Construction Compound Plan; LV3 and LV4 to provide further requirements for lighting and other matters. A new EPR CC1 (Construction Compound Management Plan) has also been recommended by the IAC.
- Chapter 8 deals with noise and vibration and recommends changes to EPRs NV1 to include requirements for night time noise; new NV for open space and school recreation grounds; some changes to NV3; NV4 includes changes to the CNVMP; and inclusion of a new NV EPR for monitoring of ongoing performance of operational traffic noise mitigation measures.
- Chapter 9 addresses the impacts of air quality and proposes changes to EPRs to incorporate the EPA's comments as well as including a provision for retrofitting of tunnel ventilation pollution control equipment if required.
- Chapter 10 addresses the impacts of ground movement and groundwater and some minor changes have been made to GW2 and GW4.
- Chapter 11 addresses issues relating to surface water and recommends minor changes to EPR SW6.
- Chapter 12 addresses soils and contaminated land and makes minor changes to EPRs CL1 and CL6.

- Chapter 13 deals with cultural heritage and recommends minor changes to EPRs HH2 and HH3.
- Chapter 14 addresses health and wellbeing and these EPRs are covered by others such as noise, air quality and social.
- Chapter 15 addresses the EMF and proposes changes to EMF3 to include a statutory auditor and a new EMF4 that introduces a complaints management system.

The IACs preferred version of the EPRs is as shown in Appendix G.

## **15.6 Recommendations**

The IAC has recommended that the EMF and EPRs be approved subject to changes recommended in this report.





## 16 Planning scheme amendment

Draft PSA GC98 is contained in Appendix V to the EES. It was publicly exhibited together with the EES.<sup>595</sup> Matters relating to land use impacts and relevant planning policies are distributed throughout the EES, including Technical Report E.

The IAC's Advisory Committee role also encompasses a review of draft PSA GC98 prepared to facilitate the Project, together with relevant public submissions. The IAC is requested to advise whether this suite of documents contains provisions and controls appropriate for the Project and whether changes are recommended.

Key components include:

- applying the schedule to the SCO in Clause 45.12 in the Banyule, Manningham, Boroondara, Yarra, Whitehorse, Whittlesea and Manningham Planning Schemes to give effect to the North East Link Project Incorporated Document (Incorporated Document).<sup>596</sup> Its provisions would override other requirements of these planning schemes including most requirements for a planning permit for buildings and works
- introducing schedules to the DDO in Clause 43.02 of the Banyule and Manningham Planning Schemes to protect the structural integrity of the proposed tunnels and portal infrastructure.
- amendment to Clause 72.01 of relevant planning schemes to make the Minister for Planning the responsible authority for the SCO and all provisions of the planning scheme applying to the use or development of land for the Project.
- updating the schedule to Clause 66.04 pertaining to referral authorities to include the Secretary of the DoT until 31 December 2030 and the Roads Corporation after that time.
- associated mapping changes.

### 16.1 Key issues

Planning scheme amendments often introduce a specific incorporated document to facilitate State-significant public infrastructure projects.<sup>597</sup> Parties did not fundamentally challenge the use of this mechanism to facilitate the Project.

However, some parties including BBW and Manningham Councils were concerned that underlying deficiencies within the Project as provided in the EES meant that planning

<sup>595</sup> Accompanying material included a draft Explanatory Report assessing relevant policies and Ministerial Directions, templates including proposed mapping and an outline of existing planning provisions and planning scheme amendment options. Relevant policy provisions were addressed in various expert reports including Mr Barlow, Mr Wyatt and Mr Schutt.

<sup>596</sup> The Incorporated Document would be included in the schedule to Clause 72.04 of relevant planning schemes.

<sup>597</sup> This was formerly achieved through the use of the Specific Sites and Exclusions Provision in Clause 52.03 together with the Incorporated Documents provision in Clause 81.01. These provisions have been changed by State-wide Amendment VC148 and include the additional requirement to map the extent of the Special Controls Overlay. In substance, Clause 45.12 has similar effect to clause 52.03 which is to be phased out.

scheme objectives including Clause 71.02-1 pertaining to net community benefit and sustainable development could not be evaluated or ensured with the level of detail necessary to warrant Ministerial approval.

Alternatively, they submitted that if the Project was approved, more detailed controls were needed in the Incorporated Document to ensure acceptable outcomes. They emphasised that the Reference Design does not have any formal or binding status and that the system of planning approvals for the Project would be limited to the provisions of the Incorporated Document and its accompanying requirement for adherence to an EMF including EPRs.

It is common practice in Victoria for DDOs to be applied to land beneath which tunnel infrastructure is to be provided. However, some submitters also expressed concern that the application of the DDO was unnecessarily restrictive in terms of opportunities to develop their land.

Some submitters regarded the extent of the proposed mapping of the SCO as excessive and called for it to be refined. This raised the question of how the SCO was intended to align with the Project Boundary.

Key issues are:

- Is the Incorporated Document ‘fit for purpose’ and drafted appropriately?
- Is the schedule to the DDO justified?
- How should mapping of the SCO be undertaken for the Project?

## 16.2 Evidence and submissions

### (i) Is the Incorporated Document ‘fit for purpose’ and drafted appropriately?<sup>598</sup>

The Proponent and the Councils differed in terms of the approach to be taken to drafting controls for the Project. In summary, BBW Councils submitted that where an infrastructure project lacks specification as to the precise nature and scope of the works, it is important for controls for the Project to be detailed to achieve more certain outcomes.

The Proponent responded that the EPRs for a project of this type must “*comprehensively address the range of potential impacts that may arise*” and “*identify and secure the environmental outcomes to be achieved without unnecessarily prescribing or limiting the means by which those outcomes should be achieved*”.<sup>599</sup>

The EPA requested alteration to the Incorporated Document to make reference to the emerging legislative regime contained within the EP (Amendment) Act to confirm its application to the Project. An important element of this was to recognise the new general environmental duty that would apply in addition to Project controls. This was accepted by the Proponent in principle.

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<sup>598</sup> Detailed mark-ups to the draft document or comments were provided by a number of parties including the Proponent at Document 411, the Councils at Document 424 and Marcellin College at Document 430b.

<sup>599</sup> Paragraph 679 of closing submissions, Document 434.

Parties agreed that it would be appropriate to amend the description of preparatory works to include works to electricity transmission towers as contemplated for Watsonia, for example.

Marcellin suggested changes to the Incorporated Document it regarded as necessary, including those relating to the siting and control of construction compounds. It also submitted that the extent of works identified as 'preparatory' that could proceed before relevant approvals was unjustified. It requested the inclusion of additional controls, such as a process for amending the EPRs and the composition of UDAP.

The Councils expanded on this, requesting that 'key' plans for approval be referenced directly in the Incorporated Document. Significantly, they suggested that the IAC should specify key design elements it considered necessary in the document to provide overarching parameters for further plans to be approved.

The Councils and a number of other stakeholders were also concerned that the Incorporated Document as drafted did not provide a direct mechanism for notice of proposals to approve final plans to those who may be impacted. They requested for this to be enhanced as a matter of fair process, given the nature and extent of works likely to be in close proximity to sensitive uses.

Other Council concerns related to the inclusive definition of Project works and the lack of clarity about the ability for the EMF to be implemented in stages.

**(ii) Is the schedule to the Design and Development Overlay justified?**

Some submitters were concerned that the imposition of the DDO on their land would either devalue their land or would place unnecessary restrictions on its future development.<sup>600</sup> They raised the prospect of further permits being required for works such as the construction of sheds or conventional house extensions.

**(iii) How should mapping of the Specific Controls Overlay be managed for the Project?**

The Proponent confirmed<sup>601</sup> that the SCO and the Project boundary were intended to mirror each other although there were a few minor deviations as mapped in Document 48. Mr Morris explained that the extent of the Project boundary would become known once detailed plans had been prepared and tenders had been let.<sup>602</sup> At that stage, a further planning scheme Amendment was expected to refine the SCO area to match the (final) Project boundary.

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<sup>600</sup> A proportion of these submitters were also concerned about the safety impacts of tunnelling under residential land, although these concerns are addressed in Chapter 10.1 (Ground Movement).

<sup>601</sup> Document 346.

<sup>602</sup> It was expected that the combined width of the SCO and DDO for the tunnel would be 120 metres wide.

Ms Reifschneider<sup>603</sup> and a number of other submitters including ALH Group Property Holdings Pty Ltd considered it was not appropriate to include such significant swathes of land in the vicinity of the Project within the SCO mapping (especially privately owned land in the area of the proposed tunnels) without further justification.<sup>604</sup> Ms Reifschneider explained that it was unsettling for land owners to live with uncertainty as to whether tunnelling would occur under their properties. These submitters urged the IAC to consider a mechanism whereby surplus land could be released from the SCO once the ultimate tunnel location and Project boundary had been confirmed.

Marcellin highlighted the potential need to pare back the boundary of the SCO to reflect an anticipated agreement between it and the Proponent to reduce the extent of impact on its sports ovals.

In response to questions by the IAC, Mr Barlow explained that it would either be possible to include a requirement in the Incorporated Document to require revision of the SCO boundary or to provide a suitable expiry date.

## **16.3 Discussion**

### **(i) Content of the Incorporated Document**

The Incorporated Document would facilitate extensive infrastructure and related works without further planning permission. It would operate together with the EPRs which commonly require further plans to be prepared, approved and implemented. It is important to ensure that both work together to address key elements of the Project in a transparent way.

The IAC is not persuaded that the proposed inclusive drafting of the definition of Project works is inappropriate. A wide range of direct and ancillary activities will be necessary, and it is not reasonable to seek to catalogue these precisely in advance of detailed construction tendering. The intent of the document has been communicated from the outset, that it is intended to replace the need for conventional planning scheme permissions for each element of the Project.

Likewise, the express opportunity to respond to the EMF and urban design and landscape plans in stages is conventional and appropriate for a Project of this scale, complexity and timeline. The essence of the requirement is for relevant approvals to be obtained at the requisite time.

The IAC does not recommend that all relevant approvals be specified in the Incorporated Document, such as detailed provisions relating to replanting amenity trees or those relating to the management of construction noise and vibration or communications and community engagement. This is only regarded as necessary for certain guideline approvals that need to

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<sup>603</sup> Submitter 181.

<sup>604</sup> She estimated that the SCO covered some 2,000 residential properties, with an east-west distance of approximately 1.7km despite the likely tunnel width being 30-40 metres.

be established upfront to set a framework for the preparation of subsequent plans or approvals that are otherwise suitably covered by the EPRs, noting that the Incorporated Document suitably requires the Project to be in accordance with the EMF and its constituent EPRs.

That said, Marcellin's proposal to document the process for amendment of the EPRs and the minimum composition of UDAP in the Incorporated Document is useful and appropriate, subject to minor refinement.

The EPA's suggested additions in respect of the EP (Amendment) Act are supported. The Project will need to meet emerging legislative and policy requirements and it is appropriate for this to be confirmed in the Incorporated Document.

### **Preparatory works**

The IAC is particularly concerned about the proposed extent of what are defined as 'preparatory works' in Clause 4.9 of the draft Incorporated Document that could be carried out before key plans for the Project are approved. These are drafted to include the creation of construction access points and site establishment works such as hardstand areas prior to noise management and community engagement plans for example.

The Proponent informed the IAC and parties during the Hearing that an early works contract had been awarded. It is not entirely clear what the scope of works are under this contract and whether they align with the definition of 'preparatory works' under the Incorporated Document. Regardless, in principle, the IAC considers it important to limit preparatory buildings and works that may be carried out without further approvals to those that are genuinely in the nature of low impact investigation works to facilitate further plans and approvals. These would include works to determine land suitability and property condition surveys. It is also reasonable to allow works for the Project that would ordinarily be exempt from a planning permit. Likewise, once a CHMP is approved, salvage and relocation works could occur within the detailed framework established.

However, beyond this, the IAC is strongly of the view that it would not be reasonable for most other categories of works to progress the Project in the absence of approved plans. A wide range of even "preparatory" works for the Project are likely to endure for years rather than months and may have an extensive footprint with high potential for local impacts.

The requirement for plans to be prepared and approved provides an important safeguard to the community including a very large number of landowners and occupiers, such that priority should be given to ensure suitable plans are approved and operative before substantive works are undertaken. The IAC also notes that there is capacity to prepare various plans in stages, such that they could address issues such as Project set up if needed.

### **Approval of construction compounds**

In Chapter 5.7.1 (Social) the IAC explained why it was necessary to carefully control the location of construction compounds and categories of permissible activities for this Project. The IAC considers this requirement should be translated into the Incorporated Document to require Ministerial approval given the sensitivity of this issue and the numerous countervailing considerations involved.

## Public notice of plans

Draft Clause 4.7.4 would require Urban Design and Landscape Plans to be made available for public inspection and comment on a Project website for 15 business days and for a notice to be published in a local newspaper. The IAC understands this was intended to provide a confined period for public consultation, recognising the likely time constraints for elements of the Project. Clause 4.7.5 would require the outcomes of this consultation to be summarised for the Minister when a request is made to approve plans.

However, having regard to the inherent sensitivities within this established corridor and the close interfaces with residential properties and other private land, the IAC recommends that the clause be expanded to provide a requirement for direct notice to be given to owners and occupiers of adjacent land in addition to those who are likely to be materially affected. It does not generally support the extent of notice proposed by Marcellin College to all properties adjacent to the Project corridor since this has the potential to become unworkable in practise.

A further (albeit limited) opportunity for direct public participation is justified especially given the use of a Reference Design to test the impacts of the Project. This further process will be important to enable community input about the height, form and materials of structures including noise walls and proposed bridges, the design of ventilation structures, the location and extent of landscaping and other key enduring elements of the Project.

## Key components of plans

Throughout this report, the IAC has outlined its concerns about the use of the Reference Design to evaluate the environmental (physical, biological, heritage, cultural, social, health, safety and economic)<sup>605</sup> effects of the Project. While it has predominantly been able to arrive at sufficient findings about the potential effects of the Project as documented in the EES, it has identified key interchanges, activity centres and interfaces that require a far greater synthesis in terms of traffic engineering and other multi-disciplinary inputs to ensure acceptable integrated outcomes. For example, the IAC has emphasised the need to reduce the footprint of some of these interchanges to achieve a suitable balance with other environmental objectives.

In the absence of a further form of 'master planning' for these areas, the IAC is not satisfied that the EPRs requiring the Project footprint to be minimised can or will realistically be achieved.<sup>606</sup> In the IAC's view, the implications associated with these key interchanges are too significant to facilitate their resolution through the tender process alone, even with input from UDAP.

Instead, as outlined in Chapter 7 (Visual impact, urban design and landscape) it recommends that Urban Design Framework Plans or similar be prepared, involving consultation with

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<sup>605</sup> Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978 (DSE, 2006), page 2. Defines 'environment'.

<sup>606</sup> This concern was reinforced by submissions for the Proponent at paragraphs 196 of its closing submissions for example.

councils, public authorities and key stakeholders with assessment by UDAP, with approval by the Minister as a pre-requisite to the approval of more detailed plans. In submitting a request for the approval of detailed urban design and landscape plans, a further requirement should be to document how the design responds to the constraints and opportunities provided in the relevant Urban Design Framework Plan.

While this recommendation adds a further 'step' in the process, the IAC considers that this is a critical forward-planning step to ensure that the layout and design of key interchanges and interfaces are based on sound Place-specific urban design parameters as well as traffic engineering requirements.

## **(ii) Draft Design and Development Overlay provisions**

The IAC is aware that the DDO is likely to generate a new or further requirement for a planning permit for certain types of residential development. However, it regards the application of the DDO in this instance as reasonable and necessary given the broader imperative to ensure the integrity of the tunnels and associated infrastructure and the capacity of even residential scale infrastructure to generate impacts.<sup>607</sup> This is confirmed by a geotechnical assessment which accompanied the draft PSA, documenting how relevant depth and distance parameters were arrived at for the DDO mapping.<sup>608</sup>

However, the IAC considers there is scope to tighten the wording of its draft design objectives while maintaining their intent.<sup>609</sup> Although the application requirements may appear onerous, they are generally comparable to the level of detail required for a building permit, with the exception perhaps of requiring specification of adjoining roads and infrastructure (including underground services and utilities). This could potentially be refined to refer to material readily available in the public domain.

It is also appropriate that a new referral requirement be created for this schedule as proposed to enable specialist input about potential effects on the Project. The associated exemption from notice and review rights would suitably streamline the permit application process.

## **(iii) Extent of the Specific Control Overlay**

The IAC generally accepts the Proponent's intention for the SCO boundary to reflect the Project Boundary.

There may be some instances where existing planning scheme exemptions may be sufficient to provide for proposed infrastructure in the absence of the SCO (such as suggested by Marcellin College for the sewer to be constructed on its land). Notwithstanding, the IAC supports the retention of the SCO for the full Project boundary at this stage given the scale

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<sup>607</sup> It is relevant that the schedules do not require a planning permit for subdivision since this action does not of itself have potential to prejudice works below ground.

<sup>608</sup> Appendix C to Appendix V – Technical analysis for infrastructure protection.

<sup>609</sup> For example, dot points 3 and 4 in Clause 1.0 could be streamlined and consolidated.

and complexity of the Project in circumstances where detailed infrastructure requirements are not yet confirmed or documented (and consequently, planning permissions cannot be fully identified).

The need for certainty for the Project must also be balanced with the effect of extending the SCO more than may be needed, especially on private land. The broad powers that are provided for buildings and works under the Incorporated Document give rise to at least planning uncertainty for owners and occupiers with potential for devaluation or, at worst, somewhat of a planning blight.

It will be important for the extent of the SCO to be confined once final design plans are approved, to apply only to land that may reasonably be required for Project works. The IAC considers that express provision should be made to this effect in the Incorporated Document rather than a specific expiry period which would be less certain.<sup>610</sup> It has provided a recommended form of wording in the IAC's recommended version of the Incorporated Document that would require the extent of the SCO to be refined once final design plans are approved.

Further refinement is also likely to be appropriate once Project works are completed, to exclude construction compounds and to confirm areas of open space affected on a permanent basis.

#### **Further beneficial opportunities to replace public open space**

At the Hearing, the IAC queried whether land identified for replacement or upgraded open space facilities should be included within the Project Boundary and SCO. This was intended to provide a potential beneficial mechanism to acquire the land for public open space and to potentially fast-track works on such land to offset the effects of the Project. Otherwise, it is not clear that conventional planning scheme exemptions would apply to works such as the development of new football or soccer pitches, pavilions and the like.<sup>611</sup> This could lead to significant time delays in providing much needed replacement infrastructure which would deliver a clear community benefit on land identified for public open space. Parties did not express a concluded position in response.

In the absence of identifying clear powers under other enabling legislation, the IAC recommends the Minister for Planning consider extending the SCO to land identified for replacement or upgraded open space facilities but to clarify in the Incorporated Document that only works to upgrade public open space can be carried out on that land (as opposed to

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<sup>610</sup> This could conceivably be achieved under section 20(4) of the PE Act if it were to only reduce the extent of the advertised SCO. If new land were included, this would most likely require both a change to the Project Area and the SCO and may warrant consideration of further notification. The IAC notes that the Incorporated Document already proposes a standard expiry provision that is likely to be extended by the Minister for Planning for the practical duration of the Project. In these circumstances, it would be potentially confusing to provide a separate expiry provision pertaining to mapping of the SCO.

<sup>611</sup> Especially since the zoning and overlay controls for this land varies and in some instances the works may not be carried out by or on behalf of the land manager, the works will often exceed the \$1 million threshold and may not be carried out by a municipality (referencing Clause 62.02 for example).



general works for the Project).<sup>612</sup> Commencement of these works on such land could be expressed to be contingent on consultation with the relevant municipal council or land manager in connection with development plans for such land. The nature of works not requiring a permit should be confined to specific types of development or parameters similar to those in the current DDO (Schedule 2) within the Manningham Planning Scheme which are specifically targeted for sites within the PAO and are within the Yarra River corridor.

The IAC recommends that land identified for replacement public open space and replacement facilities be identified in mapping for the SCO as a separate schedule. The mapping of the SCO should comprise separate schedules to distinguish between land required for construction of the Project and land which is required for the purpose of replacement public open space and replacement facilities. The IAC's recommended Incorporated Document specifies that only works to upgrade public open space can be carried out on the replacement public open space land (as opposed to works associated with construction of the Project).

In Chapter 5.7.1 (Social), the IAC also expressed concern about the location of proposed construction compounds on areas of parkland, open space and in proximity to schools and residences.<sup>613</sup> Chapter 11 (Surface water) also expressed concern about construction compounds proposed in floodplains. It became apparent at the Hearing that there are substantial, well located sites within the PAO with land uses that are proposing to cease in the short to medium term. These include the Greenery Garden Centre on Manningham Road and the Yarra Valley Country Club on Templestowe Road.<sup>614</sup>

The IAC encourages the Proponent to consider the suitability of less sensitive, accessible parts of these sites for alternative construction compounds. While they may entail less direct road access, the benefits of using such land for storage, car parking and other potentially suitable uses has capacity to outweigh the detriment that would be caused by activating more proximate land identified for construction compounds. If alternatives eventuate, an extension to the SCO should be considered (potentially with limited works to be permitted on such sites, to be nominated in the Incorporated Document).

## 16.4 Findings

The IAC finds:

- The planning controls in draft PSA GC98 constitute an appropriate mechanism to facilitate the Project, including the use of an Incorporated Document, introduction of schedules to the DDO and the use of targeted referral provisions.
- The Incorporated Document should specify a requirement for a future planning scheme amendment to confine the mapping of the SCO to land identified for works for the Project as soon as practicable after final design plans are approved. Further

<sup>612</sup> This may also provide a more explicit connection for the purpose of section 114 of the MTPF Act.

<sup>613</sup> As identified in yellow marking over extensive areas in the Map Book as part of the Reference Design. This was elaborated on in Document 166.

<sup>614</sup> Documents 384 and Document 394.

refinement should be considered once Project works are complete, to exclude construction compounds and to confirm areas of open space affected on a permanent basis.

- The Incorporated Document should define the base composition of the Urban Design Advisory Panel and provide an additional requirement for approval of an Urban Design Framework Plan or similar for the key locations and interfaces by the Minister for Planning before more detailed plans can be approved.
- The Incorporated Document should include a requirement for Ministerial approval of the location and categories of activities to occur on construction compounds.
- The definition of 'preparatory works' in the Incorporated Document should be confined to low impact investigative works to facilitate further plans and approvals.
- The requirement for notice before urban design and landscape plans are submitted for approval should be expanded to include direct notice to properties which stand to be most affected.
- The SCO should be extended to land identified for replacement or upgraded public open space facilities by the imposition of a separate schedule to the SCO. The Incorporated Document should specify that only works to upgrade public open space can be carried out on that land (as opposed to works associated with construction of the Project).
- That the extent of the SCO should be revisited and refined once final design plans are approved.

## **16.5 Recommendations**

The IAC recommends the Incorporated Document as shown in Appendix F be applied to the Project and consideration be given to including the development of land acquired for open space in the SCO to allow for replacement and enhancement of community infrastructure.

## **PART D: INTEGRATED ASSESSMENT**



## 17 Integrated assessment

This chapter provides the integrated assessment of environmental effects and provides a summary response to the IAC's Terms of Reference.

### 17.1 EES evaluation objectives

The table below provides the IAC's integrated assessment of the Project against each of the Evaluation Objectives in the Scoping Requirements for the EES.

**Table 9** Assessment against evaluation objectives

#### Transport capacity, connectivity and traffic management (Chapter 3)

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 legislation: TIA, PE Act, Road Management Act 2004

#### IAC assessment

The Project, once constructed, will provide a valuable freeway standard road link between the M80 Ring Road and Eastern Freeway connecting Melbourne's north and southeast, for both the freight movement task and passenger vehicles with significant benefits.

Traffic modelling predicts that the Project will have positive traffic reductions on many arterial roads in the north east, and particularly a reduction in heavy vehicles on Rosanna Road.

Significant traffic increases due to the Project are predicted on the Eastern Freeway east of Bulleen Road. The expansion of this Freeway is necessary in the Reference Design to accommodate that increase; with significant non-traffic effects.

Some increases in traffic are predicted as a result of the Project; particularly the north-south roads south of the Eastern Freeway.

The Project includes a number of improvements to Public Transport, primarily providing a dedicated bus lane on the Eastern Freeway. The anticipated redistribution of traffic from the local and arterial road network onto the Project should result in improved public transport services on these roads.

Active transport improvements are also proposed via upgraded bicycle and walking paths.

The IAC concludes that from a transport and traffic perspective the Project satisfactorily meets the evaluation objective.

#### Health, amenity and environmental quality (Chapters 8,9)

To minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the Project.

Key legislation: TIA, PE Act, EP Act, Public Health and Wellbeing 2008

#### IAC assessment

Air quality modelling for Project operation has been undertaken on a conservative basis and the IAC is satisfied that the environmental effects in terms of air pollution should be acceptable within the bounds of relevant legislative and subsidiary instruments. Many areas should receive a small improvement in traffic and road-based emissions and a few locations to receive marginal decreases

in air quality.

Detailed design of elements such as the tunnel ventilation stacks can be addressed through the Works Approval and Licensing process. Consistent with recent major tunnel projects the IAC has recommended that provision be made for retrofitting tunnel ventilation pollution control systems.

Air quality during construction, particularly from dust, will be a major potential environmental effect given the scale of construction, the duration of works over many years and the proximity of sensitive receptors (including residences, schools, commercial areas) along many parts of the route. This should be capable of management through normal construction techniques but will require development and implementation of a comprehensive environmental management regime.

The Project's operational noise effects should be able to be managed with acoustic barriers and in a small number of cases at-property mitigation. As with other recent road projects the IAC has expressed concern with the traffic noise policy used in Victoria and has recommended a mandatory night time noise limit and application of limits to the upper storeys of habitable dwellings.

The Projects vibration impacts should be capable of being managed through assessment and monitoring, including dilapidation surveys.

Overall the IAC concludes that the health and amenity effects of the Project should be able to be managed to an acceptable level through the application of the EPRs.

One exception to this is the use of Borlase Reserve for a TBM launch/retrieval site. The IAC considers that the residential nature of this area and the scale, proximity and duration of works required in this location should preclude its use for this purpose on noise, dust and other amenity grounds and spoil haulage.

## Social, business, land use and infrastructure (Chapters 4,5)

To manage effects of the Project on land use and the social fabric of the community with regard to wellbeing, community cohesion, business functionality and access to goods, services and facilities.

Key legislation: PE Act, LACA Act

### IAC assessment

The IAC considers the business and social impacts of the Project are very significant.

#### Business

The Project will have significant effects on business along the route. This impact will be felt most keenly with the removal of the Bulleen Industrial Precinct (BIP) and the displacement of approximately 80 businesses and the estimated direct loss of 770 jobs; with significant uncertainty as to whether these businesses can relocate, and employment be re-established. Direct financial losses for land and business owners should be able to be addressed through normal compensation provisions. The broader social and employment impacts are more difficult to manage, as are land use impacts in the City of Manningham.

The IAC has recommended that a significant effort needs to be made to mitigate the environmental effects to an acceptable level.

One potential mitigation option for the loss of part of the BIP is the rezoning and development of a parcel of land in Templestowe. This is potentially problematic as it is outside the Urban Growth Boundary; nevertheless the IAC supports the proposal given the extenuating circumstances and limited capacity for impact on broader strategic planning objectives.

The Project is also predicted to have a significant impact on the Watsonia Neighbourhood Activity Centre; principally through loss of trade due to construction impacts. The adoption of a longer tunnel option past Watsonia, which the IAC has recommended be considered, would significantly

reduce Project impacts in the Watsonia area and along the extended tunnel route.

The IAC also considers there are significant opportunities in Watsonia (and at other places along the route) to use the Project as a significant catalyst for further planning and development; as is appropriate for a city-shaping Project.

### **Social**

The social impacts of the Project will be felt along the route and beyond, and include impacts on parkland, open space, and sport and recreation facilities. The impact of a widened Eastern Freeway in particular will have a significant short- and long-term negative impact on the community. Impacts on schools and clubs will also be significant, particularly during construction where there will be considerable disruption through relocation of sports facilities. The EES also identifies other risks from impacts on attractiveness and liveability, often for many years given the long construction time. Other social impacts will be experienced by specific owners and occupiers both through compulsory acquisition and for those who may wish to be acquired and cannot countenance living near the Project during construction or operation.

Conversely, the IAC considers the Project also offers opportunities; for example as the catalyst to bring into public ownership land parcels along the Yarra River long identified for public acquisition for use by clubs and sporting facilities displaced by the Project and to enhance open space linkages. The IAC recommends the replacement of all open space lost as a result of the Project on a like-for-like basis to ameliorate social effects.

### **Summary**

Overall the IAC considers the business and social impacts of the Project are some of the most significant environmental effects. The Reference Design approach taken to assessment has introduced uncertainty for the community and the IAC that has made it difficult for the IAC to conclude whether these effects can be suitably mitigated.

On balance, the IAC concludes that the effects should be able to be addressed subject to potentially significant Project modifications being undertaken, such as a longer tunnel in the north and a reduced Eastern Freeway footprint; if achievable.

Successful mitigation of these impacts will require considerably more definitive measures than have been proposed to date. The IAC has recommended significant modifications to the EPRs and made additional recommendations for the State Government it considers would be needed to meet the Evaluation Objective.

## **Landscape, visual and recreational values (Chapters 5,7)**

To minimise adverse effects on landscape values, visual amenity, recreational and open space values and to maximise the enhancement of these values where opportunities exist.

Key legislation: PE Act.

### **IAC assessment**

Given the lack of a resolved design, the consideration of urban design and visual impact has been one of the more challenging areas of the assessment. The environmental effects are potentially very significant from Project elements such as large closer noise walls, ventilation structures, viaducts, extensive new and expanded road infrastructure (operation) and large landscape impacts from vegetation removal, land reshaping and extensive construction compounds (construction).

The Urban Design Strategy is central to guiding eventual Project design elements that might mitigate the visual and landscape impact of the Project. The IAC has recommended a number of changes to the UDS and the Incorporated Document to provide a stronger role for input by

stakeholders and greater certainty of ultimate Project outcomes.

In addition, the IAC considers there are a number of areas of the Project where the visual and landscape environmental effects of the Project warrant significant reconsideration of the footprint and design including a longer tunnel option to reduce impacts on Borlase Reserve and the area north to Grimshaw Street, the Manningham Road interchange, and particularly along the Eastern Freeway where the IAC is not satisfied an acceptable balance between traffic functionality and environmental impact has been achieved at this time.

It is difficult to conclude whether the Evaluation Objective has been achieved in the absence of a more resolved design to test whether these impacts have been minimised to an acceptable level. The IAC is also not clear on whether enhancements to landscape, amenity and open space have been maximised; this will only be able to be assessed once a detailed design is available.

In principle, the IAC considers there is potential for acceptable outcomes to be achieved through the Project approval framework including the UDS and EPRs. However, this is subject to changes recommended in this report. The tension between road design aspirations for the Project and broader environmental effects is as yet unresolved through the Reference Design for parts of the Project.

The IAC also commends the Proponent's partnership with the Wurundjeri Woi-Wurrung Aboriginal Heritage Corporation and supports ongoing input by Aboriginal parties in the design and delivery of the Project.

## Habitat and biodiversity (Chapter 6)

To avoid or minimise adverse effects on vegetation (including remnant, planted and regenerated) listed rare and threatened species and ecological communities, habitat for listed threatened species, listed migratory species and other protected flora and fauna, and address offset requirements for residual environmental effects, consistent with relevant State policies.

Key legislation: PE Act, FFG Act

### IAC assessment

The Project has a very large footprint as can be expected for a city-shaping transport Project. The potential environmental effects on vegetation and habitat are significant; with up to 52 hectares of native vegetation to be removed and potentially nearly 30,000 canopy trees (including native and exotic). As was recently observed in the Minister's Assessment for the Mordialloc Bypass, remnant vegetation within the metropolitan boundary is a scarce and valuable resource.

The approach using a Reference Design for the Project has resulted in relevant State policy not being met, which includes an overarching approach to avoid then minimise native vegetation removal. Instead the Project has assumed full removal of all native vegetation within the Project boundary and impacts to all canopy trees, seeking to offset its impacts or replace canopy where space is available. The IAC has substantial concerns with this approach and finds that the need to avoid adverse effects on vegetation and habitat has not been suitably demonstrated. Likewise, it is not in a position to find that the approach proposed to minimisation of residual impacts is sufficient in light of the likely effects.

The IAC recognises and commends the significant tunnelling under the Yarra River and Banyule Flats; this has avoided potentially very significant impacts on these waterways that could have occurred from surface roads or viaducts.

Notwithstanding, the Reference Design will have a severe environmental effect on Simpsons Barracks which is of high biodiversity significance given existing populations of Matted Flax-lily and



Studley Park Gums which would be directly affected. There is no evidence that the Project could achieve acceptable outcomes for this vegetation. For this reason, the IAC concludes that the Simpson Barracks should also be declared a “no go zone” and alternative methodologies explored for this area such as bored tunnelling. This is consistent with other IAC findings that a longer tunnel option north to Grimshaw Street should be explored.

### Cultural heritage (Chapter 13)

To avoid or minimise adverse effects on Aboriginal and historical cultural heritage values.

Key legislation: Heritage Act, AH Act

#### IAC assessment

The Project has the potential to directly and indirectly affect cultural heritage assets. The Project setting is rich in Aboriginal history and heritage, particularly along the Yarra River and its tributaries. Investigations to date indicate that the statutory requirement to prepare and approve a Cultural Heritage Management Plan for the Project should provide detailed direction for the protection of Aboriginal cultural. It will also be vital to ensure that IAC recommendations pertaining to groundwater are adhered to so the natural values of the Bolin Bolin Billabong are maintained for the life of the Project and beyond.

Historical cultural heritage is present along the Project alignment at a number of locations including for example the Heide MOMA. The IAC is satisfied that impacts on historical cultural heritage can be managed through the EPRs and provisions of the *Heritage Act 2017* (as relevant) subject to other recommendations in this report pertaining to protection of structures from vibration effects of the works. Essentially the IAC considers the evaluation objective should be able to be achieved.

### Land stability (Chapter 10)

To avoid or minimise adverse effects on land stability from Project activities, including tunnel construction and river and creek crossings.

Key legislation: Water Act, PE Act

#### IAC assessment

The potential impacts from land stability are common to any large infrastructure project. The IAC is satisfied that any impacts to the environment or property can be mitigated through application of the EPRs and detailed Project design.

The evaluation objective can feasibly be achieved.

### Waste management (Chapter 12)

To manage excavated spoil and other waste streams generated by the Project in accordance with the waste hierarchy and relevant best practice principles.

Key legislation: EP Act

#### IAC assessment

The Project will generate a very significant amount of spoil from tunnelling and trenching; a small proportion of which may be contaminated and require disposal at a licensed disposal facility. Where spoil (clean or contaminated) can be disposed of remains unclear; especially in light of cumulative demands from other Victorian infrastructure projects.

The IAC is satisfied that environment effects of spoil removal can be adequately mitigated via the requirement for a spoil management plan in EPRs.

### Catchment values (Chapters 10,11)

To avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments.

Key legislation: CALP Act, Water Act

#### IAC assessment

The IAC accepts that the Proponent's groundwater model is fit for purpose and reasonable for this stage of the Project. Further refinement and additional modelling will be required as a detailed design is progressed, particularly in relation to groundwater drawdown impacts on groundwater dependent ecosystems.

Surface water impacts have been difficult to determine given the lack of a detailed design showing the location and extent for example, of stormwater retaining basins and how they might treat and regulate stormwater flows from the Project. This is another function of the consideration of the Reference Design as opposed to a detailed resolved design. Uncertainty also persists at present for elements such as structures and construction compounds on floodplains which would require more detailed consideration in preparing the detailed design.

In general, having regard to the hydraulic modelling and the characteristics of the local environment, the IAC is satisfied that the environmental effects on water catchments and floodplains could be mitigated to an acceptable level through the EPRs. However, as for many Project elements the *how and where* of Project delivery are not apparent at this time.

An exception to this is where further waterway 'barrelling' is proposed; this is clearly inconsistent with policy on waterway protection and management and the effects cannot be effectively mitigated.

Therefore the IAC considers the EES evaluation objective can be met for most catchment values once the engineering designs are determined but not all.

### Greenhouse gases (Chapter 9)

To demonstrate that the Project will contribute to the need for an effective, integrated and climate change resilient transport system that provides a wide range of travel choices for all Victorians.

Key legislation: EP Act, Climate Change Act

#### IAC assessment

Greenhouse gas emissions from the Project, particularly from construction materials, will be significant. The IAC recommends revisions to the EPRs to promote better sustainability outcomes by setting more specific targets for greenhouse gas emission mitigation. The IAC concludes that subject to the application of these revised EPRs, the environmental effects of the Project can be mitigated to an acceptable degree.

## 17.2 Overall assessment and response to Terms of Reference

Under the Terms of Reference, the IAC is required to report to the Minister for Planning on.<sup>615</sup>

- a. findings with respect to the environmental effects of the Project
- b. findings as to the capacity for the Project to achieve acceptable environmental outcomes having regard to legislation, policy, best practice and the principles and objectives of ecologically sustainable development
- c. recommendations as to any feasible modifications to the alignment or design of the Project that would offer beneficial outcomes
- d. recommendations and/or specific measures that it considers necessary and appropriate to prevent, mitigate or offset adverse environmental effects having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development
- e. recommendations for any appropriate conditions that may be lawfully imposed on any approval for the Project, or changes that should be made to the draft PSA in order to ensure that the environmental effects of the Project are acceptable having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development
- f. recommendations for changes to the proposed Urban Design Strategy
- g. recommendations as to the structure and content of the proposed environmental management framework
- h. recommendations as to any changes to the proposed environmental performance requirements; and
- i. recommendations with respect to the structure and content of the draft PSA.

An overall response to these requirements is provided below.

### (i) Findings with respect to the environmental effects of the Project

The findings on specific environmental effects are contained in the issues chapters in Part B of this report and summarised against the evaluation objectives above.

For some issues the IAC is satisfied that the environmental effects, even based on the uncertainty of a Reference Design, are capable of being managed to an acceptable degree. Air quality and tunnel ventilation emissions for example fit into this category as the results of modelling are unlikely to change significantly even with a different design to the Reference Design; or systems such as ventilation stack locations can be modified to achieve acceptable standards.

For other environmental effects such as ecology, landscape and visual, business and social, the situation is less clear as the Reference Design approach relies on many assumptions which cannot be verified until a detailed design is progressed. The extent of native

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<sup>615</sup> At paragraph 31.

vegetation clearance is an example of one such uncertainty, as is the lack of certainty around the ability to mitigate impacts of the removal of the Bulleen Industrial Precinct.

**(ii) Findings as to the capacity for the Project to achieve acceptable environmental outcomes having regard to legislation, policy, best practice and the principles and objectives of ecologically sustainable development**

The IAC has had regard to the overarching policy aspiration in Clause 71.02-3 of the Victorian Planning Provisions to seek to integrate the range of relevant planning policies and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations.

These are key touchstones for assessment of this Project which relies on a planning scheme amendment to provide integrated permissions. These principles are especially relevant for a 'legacy project' such as this that will affect present and future generations both positively and negatively.

At this point in time, it is evident that the Project would achieve a high level of compliance with policies pertaining to transport and connectivity, including those in the *Transport Integration Act*. There are also clear State-wide policy benefits that would flow from the provision of increased accessibility, employment and housing opportunities. Collectively, these benefits should not be understated.

However, there remain clear deficiencies in the way that the Project as currently expressed would respond to other policies such as those seeking to protect and enhance certain components of the environment, liveability, a viable local economy and thriving communities. These are equally relevant to the Project, being prominent in relevant planning schemes (reflected in current zoning and overlays across the Project alignment) and legislation such as the *Transport Integration Act* and *Yarra River Protection (Willip-gin Birrarung Murrn) Act 2017*.

Overall, the IAC considers that there is reasonable potential for the Project in its final form to achieve acceptable environmental outcomes in the context of legislation, policy, best practice and the principles of ecologically sustainable development.

However, at this point in time this has not been demonstrated, with satisfaction contingent on:

- the ultimate detailed Project design, including the extent to which it has been designed to avoid particular areas of high sensitivity and to minimise the Project footprint
- the effectiveness and extent of specific mitigation proposed for the detailed design
- the quality and integrated nature of specific urban design solutions
- detailed measures for implementation of the detailed Project design.

The IAC considers the actual likelihood and acceptability of environmental outcomes for the Project as a whole will not be properly known until such time as the above has occurred.

**(iii) Recommendations as to any feasible modifications to the alignment or design of the Project that would offer beneficial outcomes**

It will be important for the Project to demonstrate a superior design optimising *all* inputs for it to achieve acceptable outcomes for the State of Victoria that will also achieve fair outcomes for local communities while protecting environmental values.

The Reference Design was put forward as a feasible option which could be designed, constructed and operated. It was not put forward as the optimum design for the Project. Notwithstanding, the IAC supports concerns from submitters that the design for numerous interchanges and interfaces would result in unacceptable environmental outcomes overall.

Before and during the Hearing a number of alternatives were put forward by the Proponent (and others) including:

- an alternative design for the area around the southern tunnel portals (the “Bullen Switch”)
- an alternative for the Lower Plenty Road interchange
- several alternatives for the Manningham Road interchange
- alternatives for the Watsonia Neighbourhood Activity Centre
- the alternative Bulleen Road interchange with the Eastern Freeway put forward by Mr O’Brien
- a number of longer tunnel options north of Lower Plenty Road including BabEng and SMART Design.

In general, many of the alternatives put forward had superior elements to the Reference Design, but none have the full status of having been through the EES investigation process with a consequent detailed consideration of environmental effects as the Reference Design has; despite the weaknesses of that process as discussed in this report by the IAC.

The IAC has recommended in some instances that those alternatives be provided to the tenderers to be considered in the development of the detailed design.

In broad terms, the IAC recommends that there are some elements that should be seriously considered in further assessment and detailed design in an attempt to balance issues of Project functionality while suitably minimising detrimental impacts. These include:

**A longer bored tunnel north**, perhaps as far as Grimshaw Street to avoid impacts on Simpson Barracks, residential areas along Greensborough Road and Watsonia Neighbourhood Activity Centre.

The IAC acknowledges the extra cost of this option, but does not consider that the feasibility in a technical sense was questioned. For a project with a 100 year design life the additional cost is seriously worth considering.

**The avoidance of using Borlase Reserve for a TBM launch/retrieval site and the minimisation of impact from a redesigned Lower Plenty Road interchange.**

This is a highly urbanised environment which is not suitable for a major interchange or TBM site.

**Alternative designs that minimise the long-term land take at the Manningham Road interchange.**

This should be guided by a need to minimise the extent of the Bulleen Industrial Precinct to be acquired and to maximise residual land and post-development access. It should also seek to retain the River Red Gum and provide opportunities to BAAG to continue operating if possible.

#### **Further investigation and minimisation of footprint along the Eastern Freeway.**

Recognition and protection of the open space values along this part of the Project corridor may justify particular consideration of how a less intrusive roadway could be developed in this sensitive, constrained setting.

#### **(iv) Recommendations and/or specific measures that it considers necessary and appropriate to prevent, mitigate or offset adverse environmental effects having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development**

The IAC has recommended a number of changes and specific measures in the EPRs as shown in Appendix G.

Some of the EPRs foreshadow the need for more considered, less impactful design, for example LP1 which requires the design footprint to be minimised. The IAC recommends that this be supplemented by additional requirements in the Incorporated Document and Urban Design Strategy to provide a more detailed framework for the layout and operation of key interchanges and interfaces given current uncertainties.

There are also some areas such as the Bulleen Industrial Precinct where the IAC has recommended additional measures to mitigate the impact on those areas. There the IAC has recommended specific business and employee support beyond the EPRs, and that consideration be given to rezoning the Council green waste site in Templestowe and altering the Urban Growth Boundary accordingly.

The IAC has also recommended other measures such as facilitating the purchase of land included in the Public Acquisition Overlay along the Yarra River to facilitate sports field relocations and to provide a long-term benefit to the community as a part of Project implementation.

#### **(v) Recommendations for any appropriate conditions that may be lawfully imposed on any approval for the Project, or changes that should be made to the draft PSA in order to ensure that the environmental effects of the Project are acceptable having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development**

The IAC recommends changes to the approval documentation including the Incorporated Document in the planning scheme amendment and the Environmental Performance Requirements for the Project to improve Project and environmental outcomes.

Other approvals such as for native vegetation offsets, works on waterways, removal of listed flora and fauna on Crown land under the Flora and Fauna Guarantee Act, for example will be applied at the time a specific design is put forward. The EPA Works Approval will be determined by the EPA following the outcome of the Minister's Assessment.

The IAC understands that a Cultural Heritage Management Plan under the Aboriginal Heritage Act will also follow a separate approval process.

Given the extent and potential impacts of construction compounds within open space areas and adjacent to sensitive uses and in areas of environmental susceptibility, the IAC recommends the Minister for Planning approve the location of construction compounds and categories of works that would be permissible.

**(vi) Recommendations for changes to the proposed Urban Design Strategy**

In Chapter 7.3.3 the IAC recommends a series of high-level design principles be developed to guide the application of the UDS. These principles will provide greater guidance for how to resolve some of the difficult competing issues in such a large Project as this.

In addition, the IAC recommends a more comprehensive process for implementing the UDS including greater transparency around Urban Design and Landscape Plans and a higher-level approval process for these set through the Incorporated Document. The IAC considers this is critical, given the amount of design work on the Project that is being deferred to some point in future beyond evaluation of the EES and conventional opportunities for public participation.

**(vii) Recommendations as to the structure and content of the proposed Environmental Management Framework**

The IAC has concluded that the EMF is generally suitable as proposed. Additional requirements for statutory environmental auditors have been recommended in some instances.

**(viii) Recommendations as to any changes to the proposed Environmental Performance Requirements**

The IAC has recommended significant changes to most of the EPRs in response to submissions to the Hearing and as a result of its detailed consideration of the issues raised. Many of the changes reflect concerns held by the IAC that the exhibited EPRs were generic and placed very limited responsibility for action or measurable performance outcomes on the Proponent. Given that a resolved design is not available, the IAC does not consider such a generic approach reasonable. A recommended set of EPRs is attached at Appendix G.

**(ix) Recommendations with respect to the structure and content of the draft PSA.**

The IAC has recommended a number of changes to the draft Planning Scheme Amendment, and specifically the Incorporated Document which is the main delivery mechanism for the Project. The Incorporated Document avoids the need for individual planning permissions for Project works and integrates in a statutory sense (under the *Planning and Environment Act 1987*) with the EMF and EPRs.

Recommended changes to the Incorporated Document include:

- Expansion of Project works to include buildings and works for replacement or upgraded public open space and sporting or recreation facilities without a planning permit provided certain conditions are met

- Requirement to update Environmental Management Framework to meet provisions of *Environment Protection (Amendment) Act 2018*
- Confirmation of process for amendment of Environmental Performance Requirements
- Modifications to be undertaken to the Urban Design Strategy before adoption
- Confirmation of the composition of the Urban Design Advisory Panel
- Introduction of a requirement for preparation and approval of Urban Design Framework Plans before more detailed plans can be approved for nominated interchanges, activity centres and interfaces.
- Expansion of extent of notice required of applications for approval of Urban Design and Landscape Plans
- Confinement of preparatory works that can be undertaken before certain approvals are given
- Inclusion of a requirement for approval of construction compound locations and categories of works or activity
- Requirement to confine extent of Specific Controls Overlay once detailed plans are approved and once construction works for the Project are complete.

The recommended Incorporated Document is attached at Appendix F.

### 17.3 Recommendation by chapter

In accordance with clause 32c of the Terms of Reference, the following table contains the IAC recommendations cross-referenced to the relevant chapters within the report.

**Table 10** Response to Clause 32c in Terms of Reference

IAC recommendation	Relevant chapter
1a	16, Appendix F
1b	15
1c	15, Appendix G
1d	16
2	16, Appendix f
3	9
4a	6
4b	4,5,6,7,8,9
5	3,8,9
6a	3,4,5,6,7,8,9
6b	3,4,5,6,7,8,9
7a	4,5
7b	3,4,5
7c	5,6
8	3
9a	3
9b	3
10	3
11	4,5
12	4
13	5
14	5,7
15	6
16	6
17	6



IAC recommendation	Relevant chapter
18	7
19	7
20	7
21	7
22	7
23	7
24	6,10
25	13
26	13
27	1.5.1
28	1.5.2
29	1.5.3



## Appendix A: Legislative and policy context

The legislative and policy framework for assessing the Project is complex.<sup>616</sup>

The Australian Government's Minister for Environment and Energy has determined that the Project is a 'controlled action' under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC 2018/8142). There are potential adverse impacts on matters of national environmental significance and on the environment of Commonwealth land, requiring assessment and approval under the EPBC Act.

Commonwealth assessment of impacts is being undertaken via a separate approvals process.

### Environmental assessment

The *Environment Effects Act 1978* provides for the integrated assessment of works with the potential for significant environmental effects. The IAC's report will inform the Minister for Planning's Assessment of the Project.

### Major Project approvals

#### (i) Planning Scheme Amendment

Draft Planning Scheme Amendment C98 (PSA) was prepared under the *Planning and Environment Act 1987* and exhibited jointly with the EES (Attachment V). The PSA is outlined in Chapter 16.

#### (ii) Cultural Heritage Management Plan

Many areas and a number of individual sites within the Project boundary are of identified cultural heritage significance under criteria established in the *Aboriginal Heritage Act 2006*. The Project will involve significant ground disturbance and therefore requires an approved Cultural Heritage Management Plan (CHMP) under that Act and the associated *Aboriginal Heritage Regulations 2018*. As required by Section 49 of that Act, prescribed works for the Project assessed in the EES cannot commence until the CHMP has been approved.

Technical report L contains an Aboriginal heritage impact assessment describing the Project's potential impact on Aboriginal cultural heritage (refer also to Chapter 20 of the EES). The IAC was advised that the Proponent is preparing a CHMP in consultation with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation – the Registered Aboriginal Party (RAP) for the Project Activity Area – and Aboriginal Victoria (who is responsible for evaluating the CHMP for a small section of the Project area where there is no RAP). When the CHMP has been finalised, it will be submitted to the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation and Aboriginal Victoria for approval.

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<sup>616</sup> All references are to Victorian legislation unless otherwise stated.

### **(iii) Works Approval**

Works Approval is required in accordance with the *Environment Protection Act 1970* and the *Environment Protection (Scheduled Premises) Regulations 2007* for the construction and installation of the freeway tunnel ventilation systems. Works Approval Application No. SO100269 was exhibited in accordance with section 20AA of the EP Act in conjunction with the EES (Attachment VI). The works approval application is supported by the following technical reports: Technical report B – Air quality assessment; Technical report C – Surface noise and vibration assessment and Technical report R – Greenhouse gas assessment.

The IAC has been tasked with making relevant recommendations to the EPA regarding the Works Approval.

The Project will require a discharge licence from the EPA before these ventilation systems can be commissioned.

## **Other Project approvals**

### **(i) Heritage Act 2017**

The *Heritage Act 2017* regulates the protection and conservation of places of heritage significance listed on the Victorian Heritage Register and archaeological sites and relics listed on the Victorian Heritage Inventory.

Under the Heritage Act, permits for impacts to places on the Victorian Heritage Register are required under section 102 of the Act, and consents for impacts to places on the Victorian Heritage Inventory under section 124 of the Act are required.

### **(ii) Crown Land (Reserves) Act 1978**

The Project will affect Crown land reserves such as the Bolin Bolin Billabong and the Yarra River in Bulleen. Under section 8 of that Act, reserves must not be sold, leased or the subject of a licence without permission under that Act or another authorising Act.<sup>617</sup>

### **(iii) Land Act 1958**

The use of unreserved Crown land within the declared Project area would require a separate order under the *Major Transport Projects Facilitation Act 2009* (Vic) for use for the Project.

### **(iv) Road Management Act 2004**

This provides the statutory framework for the Department of Transport (DoT), local government and other road authorities to manage the Victorian road network and reserves for declared roadways, pathways and infrastructure.

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<sup>617</sup> The identified Committee of Management or the Secretary, a body corporate established under the *Conservation, Forests and Land Act 1987* has the power to grant licences to enter and occupy reserved land, erect buildings, undertake works (see s 17B).

DoT is responsible for the management of freeways and arterial roads declared under the Act, while local councils are responsible for non-arterial and municipal roads (section 36 of this Act). For the Project, consent may be required under the Act for works on these roads.

After commissioning, the Project will be declared a freeway and DoT is expected to take responsibility for its care and management as the coordinating road authority (section 14 of this Act), with local councils continuing to be responsible for municipal roads and non-arterial roads.

**(v) Flora and Fauna Guarantee Act 1988**

This Act provides a framework for biodiversity conservation in Victoria. It facilitates the listing of threatened species, communities of flora and fauna and potentially threatening processes. A permit will be required under this Act for activities that could harm listed threatened species and communities of flora and fauna within the Project area.

**(vi) Wildlife Act 1975**

The Act establishes procedures for the protection and conservation of wildlife. The Act includes procedures to prohibit and regulate the conduct of activities concerning or related to wildlife. An authorisation under section 28A of this Act will be required where fauna habitat is required to be translocated for the Project.

**(vii) Water Act 1989**

The Act guides the conservation, management and sustainable use of water resources for the benefit of present and future Victorians. The Project would require the following approvals under this Act:

- a licence to construct, alter, operate or decommission works on, over or under the Merri Creek, Yarra River, Banyule Creek or Koonung Creek (from Melbourne Water).
- a licence to construct groundwater bores for monitoring, dewatering or reinjection (from Southern Rural Water).
- a licence to extract groundwater or for aquifer recharge (from Southern Rural Water).<sup>618</sup>

## **Project implementation**

**(i) Major Transport Projects Facilitation Act 2009**

The MTPF Act facilitates the assessment and delivery of major transport projects in Victoria. Projects may be declared under this Act for assessment or delivery powers (or both). The Project has been declared under the MTPF Act for the purpose of Project delivery. The Project delivery provisions would facilitate land acquisition and occupation, road construction, deviation, closure and management and the relocation of utilities.

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<sup>618</sup> EES Chapter 3, Legislative framework, page 3-14.

**(ii) Transport Integration Act 2010**

While not a specific statutory approval requirement, the TIA establishes a framework for an integrated and sustainable transport system in Victoria. The TIA requires transport and interface bodies to consider the transport system objectives<sup>619</sup> and decision-making principles<sup>620</sup> when making decisions which are relevant to the transport system. The Project should be consistent with the transport system objectives contained in the TIA. The TIA must also be considered in the draft PSA.<sup>621</sup>

**High level policy context****(i) Plan Melbourne**

Plan Melbourne 2017-2050 is a metropolitan planning strategy that defines the future shape of Melbourne and Victoria for the next 35 years. According to the EES, relevant responses to Plan Melbourne include:

- strengthening the connection to regional Victoria by improving movements between the M80 Ring Road and Eastern Freeway
- improving the connection between business precincts and residential areas, better connecting workers to employment
- shifting traffic from local and arterial roads to North East Link, improving amenity and safety for residents, local businesses and pedestrians and cyclists
- reducing congestion and enhancing the resilience of the road network to reduce business and personal costs of travel
- enhancing the network for freight and vehicles involved in the delivery of goods, creating benefits for businesses, consumers and the wider Victorian economy
- providing enhanced pedestrian and cycling paths through neighbourhoods and along strategic cycling corridors to facilitate direct active transport links across Melbourne
- improving public transport by providing the Eastern Freeway Busway.<sup>622</sup>

**(ii) Victoria's 30-year Infrastructure Strategy**

The Victorian Government established Infrastructure Victoria in 2015. It is an independent statutory authority that provides advice on the State's infrastructure. Infrastructure

<sup>619</sup> See sections 24 and 25. The transport system objectives are: Social and economic inclusion, economic prosperity, environmental sustainability, efficiency, coordination and reliability, integration of transport and land use, safety health and wellbeing.

<sup>620</sup> The decision making principles are: Integrated decision making, triple bottom line assessment, equity, transport user perspective, the precautionary principle, stakeholder engagement and community participation and transparency.

<sup>621</sup> This is required by Ministerial Direction 11 under the P&E Act 'Strategic Assessment of Amendments', Clause 3(i).

<sup>622</sup> EES Chapter 2, Project Rationale page 2-17.

Victoria's 30 Year Infrastructure Strategy (December 2016) identified the Project as a high priority infrastructure project for Victoria in the short to medium term.

In response to the Infrastructure Strategy, the Victorian Government developed the Victorian Infrastructure Plan, of which the Project is confirmed as one of several 'catalyst' and State-shaping infrastructure projects.

**(iii) Victorian Freight Plan: Delivering the goods**

The Victorian Freight Plan supports industries involved in the movement of goods, and provides short, medium and long-term priorities to support freight and logistics systems. The Project is consistent with the Plan in the following ways:

- Commercial vehicle trips between industrial precincts in the north-eastern corridor (in particular Latrobe, Epping and Broadmeadows) are likely to benefit.
- The Project seeks to address the lack of High Productivity Freight Vehicles (HPFV) access along the north-east corridor.
- Without the Project and with a growing population and economy, further congestion to the West Gate Bridge and M1 is likely to result, along with reduced landslide access for the Port of Melbourne.
- The Project will provide industrial and warehousing precincts in the north with improved access with the north, east and south-east. Improved transport links will allow for logistics businesses to improve their costs.

**(iv) National Infrastructure Plan (Cth)**

The National Infrastructure Plan (2016) (Cth) developed by Infrastructure Australia provides an investment 'roadmap' for Australia. It sets out challenges, opportunities and solutions for the next 15 years to address projected population growth. It has the following aspirations:

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

The Infrastructure Priority List, released in March 2018, provides decision-makers with a prioritised list of potential projects and initiatives.

The Project is identified as a 'priority initiative' to improve "*connectivity between the M80 Ring Road and Eastlink in outer north-eastern Melbourne*"<sup>623</sup>. Mr Barlow informed the IAC that the Project's business case had been evaluated by Infrastructure Australia and rated as a High Priority Project.<sup>624</sup>

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<sup>623</sup> EES Chapter 2-9.

<sup>624</sup> Evidence of Michael Barlow, Document 24(v) at [9].

**(v) Smart Cities Plan**

In April 2016, the Australian Government released its Smart Cities Plan as a guiding framework for Australian cities. The plan includes three pillars: smart investment, smart policy and smart technology. The Project will contribute to achieving the following objectives contained within the plan:

- Improving labour and capital productivity, through increasing accessibility to jobs and reducing congestion
- Improving the efficiency of urban infrastructure by linking and increasing the capacity of major components of the existing road network and using 'smart systems to manage traffic'...
- Increasing the resilience of the road network
- Improving amenity in Melbourne's north-eastern suburbs by shifting heavy vehicles to the freeway network.<sup>625</sup>

**(vi) Heavy Vehicle Road Reform**

The Heavy Vehicle Road Reform is an initiative of the Transport and Infrastructure Council. It aims to turn the provision of heavy vehicle road infrastructure into an economic service where feasible. The Council identifies the M80 Ring Road and Eastern Freeway, in 'Key Freight Routes: Road Expenditure and Investment Plans 2016-17 to 2019-20 Victoria (2017)' as national 'key freight routes'.

**(vii) Principles and objectives of ecologically sustainable development**

The Ministerial guidelines for assessment of environmental effects under the *Environment Effects Act 1978* specify the objective:

...to provide for the transparent assessment of potential environmental effects of the proposed project, in the context of applicable legislation and policy, including the principles and objectives of ecologically sustainable development.

Ecologically sustainable developed is defined under these guidelines as:

...development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends".<sup>626</sup>

Ecologically sustainable development has been integrated into the assessment of the Project through the scoping requirements. The principles and objectives have been considered in the development of the evaluation objectives for assessment of the EES.

<sup>625</sup> EES Chapter 2, Project Rationale page 2-10.

<sup>626</sup> *Ministerial Guidelines for the assessment of environmental effects in Victoria under the Environment Effects Act 1978* at page 3 and *Victorian Commissioner for Environmental Sustainability Act 2003, section 4*.



## Appendix B: Terms of Reference

### Terms of Reference

#### North East Link Project – Inquiry and Advisory Committee

The North East Link Inquiry and Advisory Committee (the IAC) is appointed to inquire into, and report on, the North East Link Project (Project) in accordance with these terms of reference.

The IAC is appointed pursuant to both:

- section 9(1) of the *Environment Effects Act 1978* (EE Act) as an inquiry; and
- part 7, section 151 of the *Planning and Environment Act 1987* (P&E Act) as an advisory committee.

The IAC will also provide advice that can be used to inform the Environment Protection Authority's consideration of the works approval application (WAA) prepared by the proponent for the Project.

#### Role of the IAC

1. The IAC is appointed by the Minister for Planning under section 9(1) of the EE Act 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 P&E Act 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.

#### IAC members

3. The IAC members should have the following skills:
  - a. road transport modelling, road design and traffic management;
  - b. social impact;
  - c. urban design and visual impact; and
  - d. statutory planning.
4. The IAC may seek additional specialist expert advice to assist it in undertaking its role.
5. The IAC will comprise an appointed chair (IAC Chair), a deputy chair and other members.

## Background

### *Project outline*

6. The Project proposes to connect Melbourne's freeway network between the M80 Ring Road and the Eastern Freeway, which will be upgraded and include a new busway. In summary, the Project proposes the following sections of works:
  - a. M80 Ring Road to Lower Plenty Road – a mixture of above, below and at surface road sections, a ventilation facility near Blamey Road, and new road interchanges at the M80 Ring Road, Grimshaw Street and Lower Plenty Road.
  - b. Tunnels – twin tunnels under residential areas, the Banyule Flats and the Yarra River to south of Manningham Road.
  - c. Bridge Street to Eastern Freeway – a cut and cover tunnel and a mined tunnel, with the southern tunnel portal and associated ventilation facility located south of the Veneto Club. This section would also include new interchanges at Manningham Road and the Eastern Freeway.
  - d. Eastern Freeway – widening of the Eastern Freeway, from around Hoddle Street in the west through to Springvale Road in the east to accommodate future traffic volumes, the provision of new dedicated bus lanes for the Doncaster Busway and other associated works.
  - e. Ancillary and temporary works to support construction of the Project.
7. The proponent is the State of Victoria acting through the Major Transport Infrastructure Authority (MTIA), which is an administrative office within the Department of Transport. The North East Link Project (NELP) is the division within MTIA that is responsible for developing and delivering the Project.
8. The proponent is responsible for preparing technical studies, consulting with the public and stakeholders and preparing an EES.

### *EES assessment process*

9. The Project has been declared pursuant to section 3(1) of the EE Act to be 'public works' for the purposes of that act by an order of the Minister for Planning published in the Government Gazette on 2 February 2018. Pursuant to section 4(1) of the EE Act, an EES must be prepared for public works, and submitted to the Minister for Planning, before those works can commence. Procedures and requirements specified in the order are provided in Attachment 1.
10. The EES has been prepared by the proponent in response to the EES scoping requirements issued by the Minister for Planning in June 2018.
11. The EES is to be placed on public exhibition from 10 April 2019 to 7 June 2019, together with the WAA, and draft PSA.

### *Commonwealth assessment process*

12. Because of its potential impacts on matters of national environmental significance, the Project was determined to be a controlled action for the purposes of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) on 13 April 2018. The relevant controlling provisions under the EPBC Act relate to listed threatened species and communities (sections 18 and 18A), listed migratory species (sections 20 and 20A) and environment on Commonwealth lands (sections 26 and 27A).
13. The EPBC Act assessment is to be undertaken through a public environment report. The public environment report is intended to be exhibited concurrently with the EES and will be assessed independently from the IAC by the Commonwealth Department of Environment and Energy. Any submissions on matters of national environmental significance are to be made to the Department of Environment and Energy and consequently, the IAC report is not required to, and should not,

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 Terms of Reference | North East Link Project – Inquiry and Advisory Committee
 

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address impacts on matters of national environmental significance as described in the public environment report.

#### **Planning approval process**

14. The IAC is to consider and provide advice on the draft PSA. The draft PSA proposes planning controls and provisions that will allow for, and facilitate, the use and development of the Project in accordance with an incorporated document which is proposed to be included in the Banyule, Boroondara, Manningham, Nillumbik, Whitehorse, Whittlesea and Yarra planning schemes.
15. The draft PSA proposes that the Project be exempt from any requirement to obtain a planning permit, subject to any conditions set out in the incorporated document. The incorporated document is also proposed to include a requirement for the development of a framework to manage environmental effects associated with both the construction and operational phases of the Project.

#### **Works approval process**

16. A WAA for the Project has been prepared in accordance with the provisions of the *Environment Protection Act 1970* (EP Act). The works approval application will be jointly advertised with the EES, in accordance with section 20AA of the EP Act.
17. Section 19B(3)(b) of the EP Act provides that: *if an application for a works approval is to be jointly advertised under section 20AA with a notice relating to the same proposal under the Environment Effects Act 1978... comments by any person or body interested in the application must be made as a submission on the environment effects statement or be included in any submission on the environment effects statement.* In addition, the Environment Protection Authority can no longer decide under section 19B(6) to hold a section 20B conference.
18. The IAC is to provide advice that can be used to inform the Environment Protection Authority's consideration of the WAA prepared by the proponent. The IAC may request any further information from the proponent that it considers necessary to assist it to provide that advice. The advice should recommend avoidance, mitigation or management measures that the IAC considers are necessary to ensure compliance with any relevant legislation and/or policy.

#### **Other approvals**

19. The Project requires a number of other statutory approvals and/or consents, as outlined in the EES, and which include:
  - a. an approved Cultural Heritage Management Plan under the *Aboriginal Heritage Act 2006* to manage works in areas of cultural heritage sensitivity;
  - b. a permit to remove listed flora and fauna under the *Flora and Fauna Guarantee Act 1988*;
  - c. an authority to take or disturb wildlife under the *Wildlife Act 1975*;
  - d. licences to construct a groundwater bore and subsequently extract groundwater, as well as consents for works on, over or under waterways under the *Water Act 1989*;
  - e. consent for works on freeways and arterial roads declared under the *Road Management Act 2004*; and
  - f. permits for impacts to places identified on the Victorian Heritage Register under the *Heritage Act 2017*.

#### **Public Hearing**

20. The IAC must hold a public hearing and may make other such enquiries as are relevant to undertaking its role.
21. When it conducts a public hearing, the IAC has all the powers of an advisory committee that are specified in section 152(2) of the P&E Act.

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22. The IAC may inform itself in any way it sees fit, but must review and consider:
  - a. the exhibited EES, draft PSA and WAA;
  - b. all public submissions, and all submissions and evidence provided to the IAC by the proponent, state agencies, local councils and the public;
  - c. any information provided by the proponent that responds to submissions; and
  - d. any other relevant information that is provided to, or obtained by, the IAC.
23. Prior to the commencement of the public hearing, the IAC must hold a directions hearing in order to make any directions it considers necessary or appropriate as to the conduct, scope or scheduling of the public hearing.
24. The IAC must conduct its public hearing in accordance with the following principles:
  - a. the public hearing will be conducted in an open, orderly and equitable manner, in accordance with the principles of natural justice, with a minimum of formality and without the necessity for legal representation; and
  - b. the IAC process is to be exploratory and constructive with adversarial behaviour minimised with cross-examination strictly controlled by the IAC Chair.
25. The IAC may limit the time of parties appearing before it.
26. The IAC may, at its discretion, conduct concurrent public hearings as part of the public hearing where it considers it appropriate or efficient to do so, and where, in the opinion of the IAC, submitters participating in the hearing would not be unreasonably disadvantaged by those concurrent hearings.
27. The IAC Chair may direct that a submission or evidence is confidential in nature and the hearing be closed to the public for the purposes of receiving that submission or evidence.
28. The IAC may only conduct a public hearing (including any concurrent public hearing) when there is a quorum of at least two of its members present, one of whom must be the IAC Chair or deputy chair.
29. Recording of the hearing will be managed by Planning Panels Victoria, in accordance with any directions made by the IAC Chair. The audio recording of any hearing sessions will be made publicly available as soon as practicable after the conclusion of each day of the hearing, or otherwise as directed by the IAC Chair.
30. Any other audio or video recording of the hearing by any other person or organisation may only occur with the prior consent of, and strictly in accordance with, the directions of the IAC Chair.

## Report

31. The IAC must produce a written report for the Minister for Planning containing the IAC's:
  - a. findings with respect to the environmental effects of the Project;
  - b. findings as to the capacity for the Project to achieve acceptable environmental outcomes having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development;
  - c. recommendations as to any feasible modifications to the alignment or design of the Project that would offer beneficial outcomes;
  - d. recommendations and/or specific measures that it considers necessary and appropriate to prevent, mitigate or offset adverse environmental effects having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development;

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- e. recommendations for any appropriate conditions that may be lawfully imposed on any approval for the Project, or changes that should be made to the draft PSA in order to ensure that the environmental effects of the Project are acceptable having regard to legislation, policy, best practice, and the principles and objectives of ecologically sustainable development;
  - f. recommendations for changes to the proposed urban design strategy;
  - g. recommendations as to the structure and content of the proposed environmental management framework;
  - h. recommendations as to any changes to the proposed environmental performance requirements; and
  - i. recommendations with respect to the structure and content of the draft PSA.
32. The report should include:
- a. information and analysis in support of the IAC's findings and recommendations;
  - b. a description of the public hearing conducted by the IAC, and a list of those persons consulted with or heard by the IAC;
  - c. a list of all recommendations, including cross-references to relevant discussions in the report; and
  - d. a list of the documents tabled during the public hearing.

### Submissions

33. All submissions on the EES, draft PSA and WAA are to be sent to, and managed by, Planning Panels Victoria in accordance with Planning Panels Victoria's guide to privacy. All written submissions or other supporting documentation should be published on Engage Victoria's website, unless submitters request that their submission not be publicly available, or where the IAC specifically directs that the submission or part of it is to remain confidential.
34. Electronic copies of submissions on the EES, draft PSA and WAA should be provided to the Department of Environment, Land, Water and Planning, Environment Protection Authority and Major Transport Infrastructure Authority.
35. Petitions will be treated as a single submission, and only the first name to appear on the first page of the submission should receive correspondence in relation to the IAC.
36. Any written material or evidence provided to the IAC during the public hearing should be published on Engage Victoria's website, unless the IAC specifically directs that the material is to remain confidential.
37. Planning Panels Victoria will notify submitters of the release of the Minister for Planning's assessment and IAC report.
38. Planning Panels Victoria will retain any written submissions and other documentation provided to the IAC for a period of five years after the time of the appointment of the IAC.

### Timing

39. The IAC must begin its hearings no later than 35 business days from the final date of the exhibition period, or as otherwise agreed by the Minister for Planning.
40. The IAC is required to submit its report in writing to the Minister for Planning within 30 business days from its last hearing date.

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**Fees and Allowances**

41. The members of the IAC will receive the same fees and allowances as a senior sessional panel member appointed under division 1 of part 8 of the P&E Act.
42. All costs of the IAC, including the costs of obtaining any expert advice, technical administration and legal support (including legal counsel if engaged), venue hire, accommodation, recording proceedings and other costs must be met by the MTIA.

**Miscellaneous**

43. The IAC may apply to the Minister for Planning to vary these terms of reference in writing, at any time prior to submission of its report.
44. The IAC may retain legal counsel to assist it in undertaking its role.
45. Planning Panels Victoria is to provide any necessary administrative support to the IAC.
46. The IAC may engage additional technical and administrative support as required.



**Richard Wynne MP  
Minister for Planning**

Date: 11/4/19

Terms of Reference | North East Link Project – Inquiry and Advisory Committee

*The following information does not form part of the Terms of Reference*

**Project manager**

47. For matters regarding the IAC process, please contact Greta Grivas of Planning Panels Victoria, by phone (03) 8392 5123 or email [planning.panels@delwp.vic.gov.au](mailto:planning.panels@delwp.vic.gov.au)
48. For matters regarding the EES process please contact the Impact Assessment Unit in Department of Environment Land Water and Planning (DELWP) by phone (03) 8392 5503 or email [environment.assessment@delwp.vic.gov.au](mailto:environment.assessment@delwp.vic.gov.au).





## Appendix C: Submitters

No.	Submitter	No.	Submitter
1	Glenn Michael	2	Nat Srinivasan
2	Christopher Lee	4	Janet Akeroyd
5	Marcus Coghlan	6	Tobe Ross Aran Cooper
7	Taariq Hassan	8	Eric Ronge
9	Jodie Burns	10	Robert Sterland
11	Jon Sedawie	12	John Webster Hatty
13	David Lindsay Hassett	14	Maria Thomas
15	Stephen Degiorgio	16	Daniel Carrafa
17	Martina Johnson	18	Elizabeth Riordan
19	Susanne Ross	20	Bill Barakia
21	Greg Palazzolo	22	Paul Schofield
23	Richard John Johnson	24	Nicholas Szwed
25	Athena Marissa Sikiotis	26	Denise Fernando
27	YU SUN	28	David Farrington
29	Peter Carter	30	Michelle Wills
31	Nicole Prior	32	Troy Searle
33	Glen Cockerell	34	Ben Tosetto
35	John Smith	36	Tamara Koelmeyer
37	Tim Leech	38	Splosht International
39	Leanne Mason	40	Mehrnaz Tabrizi
41	Joanna guess	42	Neil Martins
43	Robert Bruce JAMES	44	Philip McIntyre
45	Alan Tonkin	46	Megan Davidson
47	Robert MacDonald	48	Giselle Victoria Alice May James
49	Julia Blunden	50	Ilija Lijovic
51	Sebastian Leeder	52	Anna Wu
53	Ziad Nehme	54	Sharon Drieberg
55	Robert Persico	56	Kay Elizabeth Bailey
57	Chuong Vo	58	Karen Lim
59	Ken Self	60	Barry Watson

No.	Submitter	No.	Submitter
61	Lionel Cunningham	62	Frank and Giovanna Crupi
63	Fatima Salinas	64	Shi Yi Jiang
65	Saliya Hewagama	66	Hui Chuan Wang
67	Steven Marasea	68	Megan Williams
69	Dr Dominique Hes	70	Ken Benzie
71	Michael Burns	72	Oliver Romanes
73	Tomi Redman	74	Rosemary A Tait
75	Kimberley Chan	76	Vanessa Campbell
77	Megan Anne Mitchem	78	Josh Fergeus
79	Mehreen Umar	80	Chelle Destefano
81	Ben Moorfield	82	Andrew Lees
83	Felicity Crombach	84	Belinda Lovell
85	Tom Davis	86	Gregory Jones
87	Carol Jean Skinner	88	Daniel Yap
89	Olivia Wykes	90	Robert Whitehill
91	Tim Brown	92	Colin Victor Smith
93	George Carrard	94	Genevieve Hall
95	Morgan Koegel	96	Andrew Chuter
97	Laura Moorfield	98	Louis Cohalan
99	Matt Wood	100	Helen Boak
101	Paul Harris	102	Sarah Willits
103	David Baumgartner	104	Emy Collins
105	Ben Golding	106	Anthony Robert Dalton
107	Annie Cooper	108	Vanessa Hamilton
109	Leighton West	110	Gabrielle Royston
111	Maureen Wolfson	112	Madeline Kidd
113	John du Plessis	114	Robert Allan Slater
115	Dr Mia Spizzica	116	Scott Kinsman
117	Max Sargent	118	Shan Gomez
119	Amanda Bland	120	Sophie Karavaras
121	Margaret McVey	122	Dale Robinson
123	Robert Gell	124	Andrew Yen

No.	Submitter	No.	Submitter
125	Chris Goodman	126	Garry Kemm
127	Nick Rose	128	Don Stokes
129	Anne Brolly	130	Stephen Bruce Haddy
131	Siew Chin	132	Malcolm & Rosemary Pryor`
133	Rodney Haber	134	Natasha Reifschneider
135	Carmen Yiu	136	Nicholas Legge
137	Emma Kate Gifkins	138	Matthew Turner
139	Nicole Esmonde and Mathew Schneider	140	Simone Spaziani
141	Nicole Esmonde and Mathew Schneider	142	John Francis
143	Daniel Chen	144	Rohan Kendall
145	Christine Butler	146	Peter Soundias
147	Carlos Catano	148	Craig Hodgson
149	Tim Curmi	150	Stella Lambrou
151	Leslee Sparke	152	Garry French
153	Mark Di Marzio	154	Kim Travis
155	Warren Vieth	156	Eleanor Hawke
157	Michael Roth	158	Anne MacDonald
159	Megan Hallowes	160	Christine Banks
161	Sharon Hargreaves	162	Judith Jensen
163	Katie Howard	164	Pauline Etheridge
165	Cameron John May	166	Stefanie Palermo
167	Qiang Sun	168	Lisa Magnusson
169	Peter French	170	Sally Bennett
171	Karolina Franczak	172	Suzanne Marie Napolitano
173	Cheng Yan	174	Kazuhiro Ueno
175	George & Emily Varughese	176	Meredith Jay
177	Tina Garg	178	Irene Joyce Tierney
179	Garry French	180	Damneet Kaur
181	Natasha Reifschneider	182	Jill Quirk
183	John Oldfield	184	Stuart Warmington
185	Kate	186	Naomi Lacey
187	Jacinta Ryan	188	Christine Shamanis

No.	Submitter	No.	Submitter
189	Fay Loveland	190	David Hugh Nicholson
191	Sean Walsh	192	Samantha Rawlings
193	Lucy Simpson	194	Ian F Harris
195	Stephen Parsons	196	Ingrid Werner
197	Peter Knox	198	Bruce Traplin
199	Paul Edward Gallichio	200	Clem Slater
201	William & Carol Downey	202	Tom Rinder
203	Sally Spencer	204	Sue Maurer
205	William Thomas Cashmore	206	Geoffrey Gowers
207	Cara Pilkington	208	Tomislav Romic
209	Lene Kuhl Jakobsen	210	Donna O'Hoy
211	Luka Romic	212	Katherine Louise McVay
213	Leigh Paterson	214	Seth Keen and Lisa Byrne
215	Rachel Lynskey	216	Dean Dixon
217	Sofoklis Vlamis	218	Kerry Exell
219	Simon Mason	220	Catherine Hart
221	Anita Voros	222	Nadia Mattia
223	Andrew Hollis	224	Sarah Allen
225	M. Ford	226	Elliot Wong
227	Domenico and Mary Brazzale, Paul Brazzale, Anna Brazzale	228	Karen-Lina Jeffery
229	Douglas John Crocket	230	Michael Petit
231	Christine Edwards	232	Carmen Perez
233	Mark Allen Clayton	234	Jeffrey Bee & Carole O'Keefe
235	Catherine Bruce and James Bruce	236	Peter Storie
237	Meree Gough	238	Peter Sharp
239	Bruce Albrecht	240	Julie Campaner-Biasotto
241	Lucas Joshua Bunt	242	Nicklaus Mahony
243	Ralph and Lois Provan	244	Mehdi Arani
245	Stanley Bruce Bourke	246	Paul Borman
247	Victoria Bartzis	248	Ernest Anthony Fardin
249	Dayleen May Evans	250	Zoe Cassar
251	Dayleen May Evans	252	John Lambrou

No.	Submitter	No.	Submitter
253	Adam & Belinda Steegstra	254	George Edward Karroum
255	Phillip James Aylward	256	Glenn Michael
257	Matthew Coleman	258	Rachel Lynskey
259	Andrew Barnes	260	Carol Pizzey
261	Dot Haynes	262	Gwenda Johnstone
263	Hayley Laing	264	Ben Thomson
265	Coral Daisy Bellingham	266	Neil Frederick Appleby
267	Huy Le Pham	268	Narelle Lawton
269	Emily Bieber	270	Noella Jacobs
271	Ean Newbold	272	Wei Bourke
273	Simon Welsh	274	Gabrielle Bradley
275	Douglas Alan Munro	276	Gina Murray
277	John and Elaine Tierney	278	Zoran Abram
279	Alysha Deveson	280	Scott / Jeremy Stefanile
281	Bruce Fethers	282	Daniyela Rob
283	Lani Donohue	284	Gina Croce-Yap
285	John Donohue	286	Heather Smith
287	Daniel Oster	288	Graham Russel Holinger
289	Philip Thomas Jones	290	Amanda Johns
291	John Bridge	292	Gina Murray
293	Cynthia Pilli	294	Jacqueline Ann Williams
295	Judith Voce	296	Michael John Moran
297	Barbara Kidd	298	Kok Fen Chia
299	Mick Ernest	300	Katherine Jackson
301	Catherine Morris	302	Jennifer Watty
303	Shayne Collins	304	Louise Young
305	Oliver Kysela	306	Jenny Puskas
307	Michael Langford	308	Darren Ledwich
309	Chris Dirchalidis	310	Bret Hester
311	Richard Kemp	312	Nola Christopher
313	Christine Edwards	314	Andrew Swaby
315	Lindy Cowan	316	Andrew Day

No.	Submitter	No.	Submitter
317	Fraser Bryden	318	Wakako Takasaka
319	Kim Flynn	320	Beverly March
321	Paul Parrella	322	Sally Warner
323	Shirley Garratt	324	Joe Scudieri
325	Michelle Williamson	326	Louis Tarquinio
327	Heather Beaumont	328	Zoe Gallent
329	Prof Wayne Cook	330	Sharon Fraser
331	Denise Walsh	332	Tony Aouad
333	Rachel Snedden	334	Alexander Swain
335	Peter Kapeleris	336	Robert Urquhart
337	Vicky Aikman	338	Glennys Jones
339	Danielle Parker	340	Felicity Watson
341	Patrick Belford	342	Raoul Mulder
343	James Brown	344	Maree Pauline Villani
345	Carol Woolcock	346	Alison Fraser
347	Mr Jamie Gibaldi	348	Rosemary Young
349	David Gentle	350	Michael Simper
351	Petra Stock	352	Robert Jones
353	Thi Thao Nguyen Nguyen	354	Stephen Seymour
355	Bernadine Lancaster	356	Andrew Dempsey
357	Ross Nolan	358	Margaret Vescio
359	Janine Rizzetti	360	Mark Scillio
361	Ramandeep Kaur	362	Matt Guest
363	Julie Anne Beck	364	Andrew Kemp
365	Lesley Hawes	366	Lindsay Sutherland
367	Christine Elliott	368	Justin Brasier
369	Amanda Raymond	370	Debra Parkinson
371	Kim Northmore	372	Kain Baigent
373	Julian Agius	374	Jennifer McLean
375	Kerri-Anne Deane	376	Jeremy Welton
377	Danny Hatters	378	George Kio
379	Sarah Quick	380	Sophie Rhiannon Boyd

No.	Submitter	No.	Submitter
381	Graeme Martin Daniels	382	Peter McDougall
383	James Earle	384	Jonathan Buttery
385	Joe Mustica	386	Simon Exon
387	Michael Smith	388	Helen Kinross
389	Elizabeth Gleeson	390	Raymond Paterson
391	Claire Bevers	392	Duncan Nuttall
393	Arch Cuthbertson	394	Emma Steinfort
395	Rick Pruckner	396	Sharron Pfueller
397	Rick Pruckner	398	Helen C Davies
399	Len Grasso	400	John and Elaine Tierney
401	Susan George	402	Phil Turner
403	Jill Holmes	404	Therese Scales
405	Paul McKendry	406	Tony Smith
407	Prem	408	Ivan Hexter
409	Andrew Tierney	410	Joy Mettam
411	Wes Arnott	412	Stephen Graham
413	Ronny El-Azar	414	Danni Finnigan
415	Michelle Giovas	416	Kate Warren
417	Louise Graham	418	Susan Frances Crisp (aka Dr Susan Rattray)
419	Jenny Neale	420	Kevin J
421	Richard Nash	422	Ian Richtsteig
423	Charles and Rita Miller	424	Dinah van Ruyven
425	Stephen Graham	426	Christopher Long
427	Suzanne Williams	428	David King
429	Barry Teese	430	Carmel Ritchie
431	Noel David Whitehead	432	Kon Karmis
433	Greta Gillies	434	Virginia Ruchel
435	Denise Digenakis	436	Janet Washington
437	Janet Hagger	438	Emma Bjelkmark
439	Andrew & Laura White	440	Andrew & Laura White
441	Tamika Simms	442	Stephen Holloway
443	Megan Hallowes	444	Lucas Guilbert

No.	Submitter	No.	Submitter
445	Warren Davey and Ann Davey	446	Michael Santmaria
447	Geoffrey Kidd	448	Yvonne Ashby
449	B.J. Winzer	450	David Bosso
451	Amy Mckellar	452	Margot Meredith
453	Brenda Wilkinson	454	Margaret Finger
455	Darren Williams	456	Hayley Celata
457	Marigold Laura Hayler	458	Catherine Grey
459	Anthony Kosovich	460	Manika Clayton
461	Emily Mary Jenkins	462	Anna Kelly
463	David Mulholland	464	Dr Juris Briedis
465	L Power	466	Theresa Hsieh
467	Edwin Alexander	468	Patrick Mitchell
469	Michael Copsey	470	Frances Lee
471	Frances Lee	472	Brendan Jenkins
473	Andrew White	474	Meredith Trevillion
475	Vilma Reginato	476	Russell Ives
477	Claire McKaskill	478	Poppi Triantopoulos
479	Joanne Colosimo	480	Lynne Baker
481	James Reginato	482	Peter Gregory Hodges
483	Piergiorgio Moro	484	Michael Tsakmakis
485	Andrew McNeil	486	Maggie Villani
487	Greg Angelo	488	Linda Hall
489	Sandra Ann Winnell	490	Jeremy Richards
491	Cam Giardina	492	Chris Dirchalidis
493	Warren Tomlinson	494	Mr Adam Burgess & Ms Denise Burbidge
495	Shane Hocking	496	Peter Raymond Lansdell
497	Spencer Waymire	498	Robert Nedanovski
499	Peter Altis	500	Belinda Lafranchi
501	Wendy Bennie	502	Tim Ashby
503	Amy Crosthwaite	504	Sarina Seymour
505	Aleksandar & Gabrielle Rokvic	506	Julian Mark Sakowski
507	Chris A	508	Barbara Trauer



No.	Submitter	No.	Submitter
509	Ian Turner	510	David Fulton
511	Maria Vander Werf	512	Michelle Giovas
513	Spiros Lefteriotis	514	John Chung Yin Ng
515	Monika Hakkinen	516	Tony Cugnetto
517	Malcolm Norman McVeigh	518	Michael Goddard
519	James Deane	520	Martha George
521	Maree Keenan	522	Sophie Kermanidis
523	John Abakumenko	524	Bibi Gerner
525	Ann-Maree Gentile	526	Carolyn Ebdon
527	Eve Pakarinen	528	Stuart McKenzie
529	Belinda Tominc	530	Bradley Culph
531	Simon Barnes	532	Robert Labuc
533	Sandra Marie Willers	534	Nicholas Montgomery
535	Helen Ferguson	536	Mehmet Aydin
537	Eleanor Poelsma	538	Warren Elms
539	Ian Donald	540	Helen Pereira
541	Alexander Grimes	542	Nic Moore
543	Kelly Armiger	544	Lynda Achren
545	Kathy Jackson	546	Damon Neil Cartledge
547	Brian Roger Dobbins	548	Graeme Newell
549	Martha Delfas	550	Bianca D'Alessandro
551	Pauline Barker	552	Bryan Kearney
553	Subik Baso	554	Peter Wayne Jupp
555	Jenny Seed	556	Marnie Sier
557	Kim McCormick	558	Lucy Kerr
559	Lisa Glenda Cook	560	Robert Urquhart
561	Elle Rice	562	Marelle Davey
563	Daphne Hards	564	Lisa Smith
565	Karen Ernest	566	Simon Wade
567	Stuart Smith	568	Fiona Bruce
569	Kathy Jackson	570	Wayne Brown
571	Zhi Feng Xu	572	Claudia Gallois

No.	Submitter	No.	Submitter
573	Denise Kathryn Daniels	574	Evan Fowler
575	Debra Hoadley	576	Anna George
577	Brian Murphy	578	Duane Burt
579	Mark Murnane	580	Warren Maher
581	Samuel George	582	Barnaby McIlrath
583	Amy Mckellar	584	Arthur James Reiger
585	Ryan George	586	Hesham Mobarek
587	Wendy McKenzie	588	Vivian Simonelli
589	Vivian Simonelli	590	Vivian Simonelli
591	Matthew Elia	592	Julie Stallwood
593	Bree Crow	594	Philippa Hauser
595	Tim Murray	596	George Longinidis
597	Linda Reid	598	Patrick Love
599	Domenic Dicesare and Teresa Galletta	600	Lily Taylor
601	Tristan Davidson	602	Lindus Conlan
603	Michael Girdler	604	Anna Picariello
605	Carolyn O'Hanlon	606	Bob Bailey
607	Jacqueline Ibrahim	608	Jane Maria Belfrage
609	Guy McGregor	610	Jennifer Chellew
611	Harris Williams	612	Colin Atkin
613	Lachlan Cresswell	614	Peta Beattie
615	Wade Howell	616	Ellie Bastow
617	Vasiliki Kermanidis	618	Nancy Williams
619	David Leslie Berry	620	Kevin James Maguire
621	Susan Toole	622	Anne Bennett
623	Rebecca Grimaud	624	Ian McLachlan
625	Carolyn Hall	626	Andrew Murphy
627	Jonathan Slagmolen + Peter Timmermans	628	Lachlan Cresswell
629	Andrew Guthrie	630	Jeff Paine
631	YVCC Property Group Pty Ltd and Linked Solutions Pty Ltd	632	Anisha Ramakrishnan
633	Jane Nathan	634	Andrew Kelly

No.	Submitter	No.	Submitter
635	Dean Arnel	636	Mariella Di Fabio
637	Julie Johnston	638	Sandra Massimini
639	Ben Charles Dawson	640	Grace & Kim Guest
641	David Scott	642	Paul Johnson
643	Tim Sligo	644	Mr Mario Panaccio
645	Denise Bertram	648	Frederick Buono
647	Bob Regan	648	Irene Norman
649	Paul Clapton	650	David Scott
651	Gabrielle de Bruyn & Mary Harnan	652	Wayne Hou
653	Andrew Koutsaplis	654	Maxwell Robert Galletti
655	Nic Moore	656	Dorothy Joy Raftopoulos
657	Tim Smith MP	658	Sharon Ganter
659	Marc Nardo	660	Marie Elsa Klein
661	Horst (Oz) Kayak	662	Ken Barton
663	Guy & Lena Marinucci	664	Peter Kenneth Snelling
665	Angela Koutsaplis	666	Dianne Williamson
667	Lucie Holden	668	Andrina Aguiar
669	Nicholas Aberle	670	Valentina Clough
671	Garry Brennan	672	Paul Vincent Sheedy
673	Steve Marquis	674	Valentina Clough
675	Sarah Webb	676	Jessie Doull
677	Ian Hundley	678	Mohamad Kobayssi
679	Carmel McCormack	680	Dennis Dalla Costa
681	Matthew Hanrahan	682	Peter Harkness
683	Maudie Palmer AO & Eugene Howard	684	Dennis Dalla Costa
685	Lydia Winstanley	686	David Del Monaco
687	Gavin Clancy	688	Carmel McCormack
689	Stewart Burton	690	Barbara Horn
691	Joseph Emmanuel	692	Caitlin Smith
693	Paul Gale-Baker	694	Mary Harnan
695	Anna Tramontana	696	Alastair Cooper
697	Paul Gale-Baker	698	Bronwyn Long

No.	Submitter	No.	Submitter
699	Helen Chapman	700	Alexander Parmington
701	Barbara Mary Falkland	702	Karl Bacash
703	John D'Aloia	704	Michael David Reece
705	Maureen Barbara Havlin	706	Julie Dyer
707	Patricia Ryan	708	Brian Jackson
709	Peter Alan Hill	710	Margaret Green
711	Anita Patricia Bourke	712	Kat Lavers
713	David Ian McCuaig	714	Bruce Plain
715	Rod Barton MLC	716	Terry Montebello on behalf of Banyule, Boroondara and Whitehorse City Councils
717	Amber Haslam	718	Marcellin College
719	Jennifer Byrne	720	Julie Weld
721	Abdallah Helou	722	Grahame Coleman
723	Marianne Richards	724	Frances Springbett
725	Chezhan Hall	726	Matthew Green
727	Lachlan Plain	728	John Quiroga
729	Christopher White	730	Alastair Smart
731	Mark McTaggart	732	Roxene Carroll
733	Clayton Smith	734	Roslyn Heron
735	Mary Harnan	736	Amanda James
737	Sally Macindoe	738	Narelle Kay
739	Michael Stapmanns	740	Shaun La Motte
741	Daphne Kathleen Hards	742	Chris Chesterfield
743	John Merory	744	Erik Krauklis
745	Vasiliki Kermaidis	746	Helen Tsoutsouvas
747	Iain Pizzey	748	Fiona Stitfold
749	Erin Cooper C/O Alastair Cooper	750	Mark Paholski
751	Darren Callahan	752	Matt Maguire
753	William, Brien Mason	754	Dr Danny Csutoros
755	Gregory T Kennedy	756	Chris Chesterfield
757	Sarah Hardgrove	758	Michelle Stewart
759	Kennedy D'Souza	760	Henry Wong
761	Laird Doney	762	Roslyn Metzke

No.	Submitter	No.	Submitter
763	Derek Christensen	764	Michael Sangiorgio
765	Cleo Di Paolo & Julie Wolfenden	766	Lazaros Zikou
767	Irene Joyce Tierney	768	Billy Anderson
769	Rosalind Jean Alley	770	Aaron Devitt
771	Cindy Bridge	772	Angelo Eliades
773	Yuzhao Chen	774	Stuart Hughes
775	Denis Watson	776	Maree Kiefer
777	Aaron Meneghini	778	Adriano Murone
779	Misha Maguire (on behalf of Maguire family)	780	Sophie Williams
781	Amanda Oosterweghel	782	Elaine Fabris
783	Rosemary Glaisher	784	Peter de Bruyn
785	Megan Cassidy	786	Sophie Miller
787	Tom Melican	788	Andrew Prancunas
789	Laurie Cenci	790	Kieran Mahony
791	Karen Sutherland	792	Tony Morton
793	John Young	794	Deanne McLeish
795	Emily Telford and Jacque Haslam-Ryan	796	Lin Zhu
797	Rex Martin Atkins	798	Christine Barbara Morris
799	Katie George	800	Stephen Woods
801	Maria Caven	802	Celia Hardy Smith
803	David John Farrow	804	Alex MacLeod
805	Elaine Fabris	806	Jodie Barakat
807	Christine Barbara Morris	808	David Morrison
809	Shobha	810	Liz Webster
811	Cinzia Bello	812	Linda Galli
813	Paul Fan	814	Narelle Kay
815	Fiona Matthews	816	Bonnie McNeil
817	Karen Stott	818	Shaun La Motte
819	Michael Sargeant	820	Anna Crosswhite
821	Ben Gianchino	822	Debbie Chen
823	Catherine Clare McArdle	824	Jarrod Graetz
825	James Court	826	Ian Roberts

No.	Submitter	No.	Submitter
827	Mark Vander Werf	828	Oliver Draganovic
829	Paul Vella	830	Trang Nguyen
831	Sumith Perera	832	Stephanie Ho
833	Douglas Helms	834	Angela Booth
835	Bernard Etheridge	836	Montse Musgrave
837	Heather Hero	838	Lesley Helen Morath
839	Daniela Fekonja	840	Zerin Dellal
841	Maggie Villani	842	Anna Crabb
843	Gabrielle Benett	844	Philip Ward
845	Felicity Gordon	846	Chris. D. H.
847	Paula Howard	848	Chris Harper
849	Rosamund Krivanek	850	Nola Zytsel
851	Graeme Clarke	852	Robin Anthony Vowels
853	Kenneth Hamer	854	Edgar Knight
855	Michael Reece	856	Paul Spizzirri
857	Anthony Hocking	858	Kathy Wunderlich
859	Meera Ramachandran	860	Caesar and Marina D'Mello
861	Danny Johnson	862	Gina Croce-Yap
863	Nick Pastalatzis	864	Anthea Fleming
865	Audine McGovern-McCabe	866	Bryan Gray Radden
867	Shaun Knott	868	Susan Nunis
869	Greg McLeod	870	Gerard Mullins
871	David Glenn	872	Catherine Keenan
873	Preetesh E Parmar	874	Ian Boulter

## Appendix D: Parties to the Panel Hearing

Submitter	Represented by
North East Link Project Authority (NELP)	Stuart Morris QC and Chris Townshend QC, with Emily Porter and Barnaby Chessell of Counsel instructed by Clayton Utz, who called the following expert witnesses: <ul style="list-style-type: none"> <li>- Michael Barlow on Strategic Planning</li> <li>- Kevin Begg on Urban Design</li> <li>- Allan Wyatt on Landscape and Visual Amenity</li> <li>- Meg Caffin on Tree Canopy</li> <li>- Tim Veitch on Strategic Transport Modelling</li> <li>- Luis Willumsen on Traffic Modelling</li> <li>- John Kiriakidis on Traffic and Transport</li> <li>- Peter Nadebaum on Contaminated Land and Spoil</li> <li>- Hugh Middlemis on Groundwater</li> <li>- David Fuller on Surface Water</li> <li>- Brett Lane on Ecology</li> <li>- Cameron Miller on Vegetation Offset</li> <li>- Patrick Maiden on Aquatic Ecology</li> <li>- Darren Tardio on Airborne Noise</li> <li>- Frank Fleer on Air Quality</li> <li>- Jackie Wright on Human Health</li> <li>- Marianne Stoettrup on Business Impacts</li> <li>- Glenn Weston on Social Impacts</li> <li>- Jonathan Howell-Meurs on Aboriginal Cultural Heritage and a Lead Author presented to the IAC in the following:               <ul style="list-style-type: none"> <li>- Tony Frodsham on Traffic and Transport</li> </ul> </li> </ul>
Minister for Planning	Nick Tweedie SC with Emma Peppler of Counsel, and inhouse solicitor Alec Bombell
Department of Transport	Paul Connor QC and Roshan Chaile of Counsel, instructed by Norton Rose Fulbright
Environmental Protection Agency of Victoria	Alexandra Guild of Counsel instructed by in house solicitor Hannah McGuigan
Banyule Boroondara and Whitehorse City Councils	Adrian Finanzio SC, Graeme Peake and Paul Chiappi of Counsel instructed by Maddocks Lawyers, who called the following expert witnesses: <ul style="list-style-type: none"> <li>- Andrew O'Brien on Traffic and Transport</li> <li>- Peter Dunn on Traffic and Transport</li> <li>- William McDougall on Traffic and Transport</li> <li>- Graeme Lorimer on Ecology</li> </ul>

Submitter	Represented by
	<ul style="list-style-type: none"> <li>- Frank Butera on Noise</li> <li>- Richard Simon on Active Open Space</li> <li>- Iain Cowan on Air Quality</li> <li>- Terry Rawnsley on Net Community Benefits</li> <li>- Lars Babendererde on Tunnel Engineering</li> <li>- Craig Czarny on Urban Design (called jointly with Manningham City Council)</li> <li>- Steven Schutt on Landscape and Visual (called jointly with Manningham City Council)</li> <li>- Warwick Bishop on Surface Water (called jointly with Manningham City Council)</li> <li>- Scott Dunn on Surface Water (called jointly with Manningham City Council)</li> <li>- Chris Smitt on Groundwater (called jointly with Manningham City Council)</li> </ul>
Manningham City Council	<p>Rupert Watters of Counsel and Kate Morris of Harwood Andrews, instructed by Harwood Andrews, who called the following expert witnesses:</p> <ul style="list-style-type: none"> <li>- Hilary Marshall on Traffic and Transport</li> <li>- Brian Haratsis on Economics</li> <li>- Steve Mueck on Ecology</li> <li>- Robert Galbraith on Arboriculture</li> <li>- Tom Evans on Acoustics</li> <li>- Judith Stubbs on Social Impacts</li> <li>- Craig Czarny on Urban Design (called jointly with Banyule, Boroondara and Whitehorse City Councils)</li> <li>- Steven Schutt on Landscape and Visual (called jointly with Banyule, Boroondara and Whitehorse City Councils)</li> <li>- Mr Warwick Bishop on Surface Water (called jointly with Banyule, Boroondara and Whitehorse City Councils)</li> <li>- Scott Dunn on Surface Water (called jointly with Banyule, Boroondara and Whitehorse City Councils)</li> <li>- Chris Smitt on Groundwater (called jointly with Banyule, Boroondara and Whitehorse City Councils)</li> </ul>
Marcellin College	<p>Juliet Forsyth SC and Andrew Walker of Counsel instructed by Rigby Cooke Lawyers, who called the following expert witnesses:</p> <ul style="list-style-type: none"> <li>- Charmaine Dunstan on Traffic</li> <li>- Tom Evans on Acoustics (<i>Note the evidence of Tom Evans was heard at the same time as he presented for</i></li> </ul>



Submitter	Represented by
	<p><i>Manningham City Council</i>)</p> <ul style="list-style-type: none"> <li>- Clark Briggs on Civil Engineering</li> </ul> <p>and lay evidence from the following:</p> <ul style="list-style-type: none"> <li>- Mr Mark Murphy</li> </ul>
Carey Baptist Grammar School	<p>Andrew Gunter SC of Hunt and Hunt and represented by Colin Stuckey, who called the following expert witnesses:</p> <ul style="list-style-type: none"> <li>- Christophe Delaire on Noise and Vibration</li> <li>- Ben Sichlau on Air Quality</li> <li>- Peter Oxnam on Land and Groundwater</li> <li>- Brett Young on Traffic and Parking</li> <li>- Michael Cawood on Surface Water and Flooding</li> </ul> <p>and lay evidence from the following:</p> <ul style="list-style-type: none"> <li>- Mr Phillip Grutzner</li> </ul>
La Trobe University	<p>Matthew Townsend of Counsel who called the following expert witness:</p> <ul style="list-style-type: none"> <li>- Knowles Tivendale on Traffic and Transport</li> </ul> <p>and lay evidence from the following:</p> <ul style="list-style-type: none"> <li>- Ms Natalie MacDonald</li> </ul>
ALH Group Property Holdings Pty Ltd	<p>Amanda Johns of Minter Ellison, who called the following expert witness:</p> <ul style="list-style-type: none"> <li>- Valentine Gnanakone on Traffic</li> </ul>
Yarra Riverkeeper Association	<p>Dr Bruce Lindsay, Environmental Justice Australia, who called the following expert witness:</p> <ul style="list-style-type: none"> <li>- Dr Sarah Bekessy on Ecology</li> </ul>
Friends of Banyule	<p>Michelle Giovas, submission to IAC and who called the following expert witness:</p> <ul style="list-style-type: none"> <li>- Dr John Stone on Transport and Traffic</li> <li>- Dr Jason Thompson on Health and Injury (<i>presented on behalf of himself and Prof Mark Stevenson</i>)</li> </ul>
Adam and Belinda Steegstra	
Aircar Industry	Ross Nolan
Alex and Gabrielle Rokvic	
Alex Macleod	
Alistair Cooper	
Amanda James	
Andrew Kemp	
Andrina Aquiar	Kennedy D'Souza

Submitter	Represented by
Anna Crosswhite	
Applewood Retirement Village	Roderick Sinclair
Australian Institute of Landscape Architects (AILA)	Bruce Echberg
Avon Street Residents Committee	Vivian Simonelli and Roxene Carroll
Balwyn North Freeway Noise Group	Mary Harnan
Banyule Ratepayers Action Group	David Mulholland
Barry Teese	Dominic Scally of Best Hooper Lawyers
Barry Watson	
Belle Vue School	Catherine Caminiti and Kim McCormick
Ben Tosetto	
Birraring Council	Chris Chesterfield
Blackburn and District Tree Preservation Group	David Berry
Blackburn Village Residents Group	David Morrison
Brien Mason	Joan Mason
Bulleen Art and Garden (BAAG)	Darren Wong of Planology Lawyers and Paul McMorran, BAAG
Bulleen Templestowe District Junior Football Club	Nic Moore
Bulleen Industrial Zone Group Incorporated	Simon Welsh
Camberwell Golf Club Incorporated	Craig Atkins
Cameron John May	
Carmen Yiu	
Carolyn Ebdon	
Catherine Keenan	
Catherine Morris	
Chezan Hall	
Christine Morris	
Colin Atkin	
Cynthia Pili	
Danny Johnson	
David Farrow	

Submitter	Represented by
David Scott	
Dianne Williamson	
Dominic Dicesare	
Doncaster Aeromodellers Club	Egon Fice
Dot Haynes	
Douglas Munro	
Elaine Fabris	
Emily Telford	
Eram Road Street Community	Shaun La Motte and Roslyn Heron
FC Bulleen Lions/ Veneto Club	David Del Monaco and Steve Mackeson
Football Victoria	Matthew Green
Frances Lee	
Fred Buono	
Friends of the Earth Melbourne	Rachel Lynskey
Friends of Yarra Valley Parks	Bruce Plain and Alan Noy
Garry French	
George Karroum	
George Kio	
Giselle James	
Glennys Jones	
Greg McLeod	
Greg Palazzolo	
Greta Gilles	
Guy Marinucci	
Gwenda Johnstone	
Harp Golf Club Inc	Judith Voce
Heide Museum of Modern Art	Tim Sligo
Helen Tsoutsouvas	
Henry Wong	
Holcim (Australia) Pty Ltd	Anna White of Corrs Chambers Westgarth
Ian Hundley	
Inner Melbourne Planning Alliance Inc	Russell Smith

Submitter	Represented by
Institute of Transportation Engineers Australia and New Zealand	Nicholas Szwed
Jane Belfrage	
Janine Rizzetti	
James Deane	
JFT Japan Foods Trading	Wakako Takasaka
John Abakumenko	
John D'Aloia	
John Donohue Auto Repairs Pty Ltd	Lani and John Donohue
John Francis	
John Merory	
John Young	
Julie Johnson	
Karolina Franczak	
Katie George	
Kennedy D'Souza	
Kok Fen Chia	
Koonung Creek Reserve Balwyn North Preservation Group	Gabrielle de Bruyn and Mary Harnan
Kororoit Institute	Tony Smith
Laura Moorfield	
Macleod College	Mario Panaccio
Macleod Cricket Club Inc	David Bosso
Macleod Junior Football Club	Paul Starmans and Mr Craig Dodson
Marcellin Old Collegians Cricket Club	Julian Sakowski
Marcellin Old Collegians Football Club	Mark Clayton
Mariella Di Fabio	
Mark Taggart	
Mary Harnan	
Matt Maguire	
Melbourne Water	Gerald Fitzgibbon
MFJ Constructions	Joe Mustica
Michael Goddard	

Submitter	Represented by
Michael Reece	
Michelle Giovas	
Mick Ernst	
Mini Maestros	Bruce Fethers
Nagambie Resources Limited	James Earle
Natasha Reifschneider	
National Trust of Australia (Victoria)	Felicity Watson
Native Fish Australia	Tim Curmi
Nicholas Legge	
Nillumbik Shire Council	Joseph Emmanuel
Peter Carter	
Peter de Bruyn	
Peter Harkness	
Pharmacy 4 Less Watsonia	Hesham Mobarek
Planning Institute of Australia	Laura Murray
Public Transport Users Association	Tony Morton
Rachel Lynskey	
Ralph Provan	
Residences of Kay Court and Fahey Crescent	Narelle Laughton
Residents United Against North East Link Option A (RUANELA)	Ben Dawson and Lazaros Zikou
Resolve Rosanna Road	Natasha Reifschneider
Riverland Conservation Society of Heidelberg	Andrew Lees
Robert and Sandra Nedanovski	
Robert Labuc	
Rod Barton MLC	
Rosamund Krivanek	
Roslyn Heron	
Sanctum Studio	Lachlan Plain
Sandra Willers	
Shaun La Motte	

Submitter	Represented by
Sophie Rhiannon Boyd	John Evans
Stefanie Palermo	
Stephen Haddy	
Stephen Seymour	
Sustainable Gardening Australia	Dr Sharron Pfueller
Tamara Koelmeyer	
The 3068 Group Inc	Chris Goodman
Tom Melican	
Town and Country Planning Association	Marianne Richards
Transport for Everyone (T4e)	Gerry McLoughlin
Trinity Grammar School	Tristan Davidson
Warringal Conservation Society	Daphne Hards, James Deane and Dianne Williamson
Warren and Ann Davey	
Watsonia Primary School	Paul Johnson
Watsonia Sports Club	Rodney Haber
Watsonia Traders Association	Jeremy Richards
Wei (Wendy) Bourke	
Whitehorse Ratepayers and Residents Association	Eve Pakarinen
Wildlife Victoria	Dr Megan Davidson
Yarraleen Cricket Club	Paul Spizzirri and Michael Cromie
Yarra City Council	Simon Exon
Yarra Junior Football League	Chris DeSilva, Tim Murray and Jeff Hooper
Yarra Valley Parkland Walkers	Horst Kayak
YVCC Property Group Pty Ltd and Linked Solutions Lty Ptd (Yarra Valley Country Club)	Amanda Johns of Minter Ellison
Victorian Transport Action Group (VTAG)	Michael Reece and Eric Sette
Zoe Cassar	

## Appendix E: Document list

No.	Date	Description	Provided by
1	7/06/19	Letter to IAC regarding expert witnesses, EES information updates and possible project briefing day	Ms Sallyanne Everett, Clayton Utz for North East Link Project (NELP)
2	14/5/19	North East Link Project Expert brief – Catherine Wilson	Mr Nick Wimbush, Chair, Inquiry and Advisory Committee (IAC)
3	14/5/19	North East Link Project Expert brief – Craig Barker	Mr Nick Wimbush, Chair IAC
4	14/5/19	North East Link Project Expert brief – Stephen Axford	Mr Nick Wimbush, Chair IAC
5	20/6/19	Preliminary matters and further information request – 20 June 2019	Mr Nick Wimbush, Chair IAC
6	20/6/19	CW1 Brief Written Statement to IAC – Air Emissions and Air Quality - 17 June 2019	Ms Catherine Wilson
7	20/6/19	SA1 Brief Written Statement to IAC – Urban Design - 17 June 2019	Mr Stephen Axford
8	20/6/19	CB1A Brief Written Statement to IAC – Ground Movement – 18 June 2019	Mr Craig Barker
9	20/6/19	CB1B Brief Written Statement to IAC – Groundwater – 18 June 2019	Mr Craig Barker
10	20/6/19	CB1C Brief Written Statement to IAC – Contamination and Soil – 18 June 2019	Mr Craig Barker
11	21/6/19	North East Link Project - Directions Hearing - Proposed Expert Witness List	Mr Stuart Morris QC for NELP
12	21/6/19	Draft Inquiry and Advisory Committee – Site Visit Itinerary – Date: Friday 12 July 2019	Mr Stuart Morris QC for NELP
13	21/6/19	North East Link Project: Directions Hearing – Draft Timetable	Mr Stuart Morris QC for NELP
14	21/6/19	Further Information Request from Banyule City Council, Whitehorse City Council and Boroondara City Council – 19 June 2019	Mr Terry Montebello, Maddocks, for Banyule City Council, Whitehorse City Council and Boroondara City Council

No.	Date	Description	Provided by
15	26/6/19	North East Link Project Inquiry and Advisory Committee Directions – version 1	Mr Nick Wimbush, Chair IAC
16	2/07/19	North East Link Submissions Database - EES Categories and Themes Report - 1 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
17	3/07/19	North East Link Project -Revised Proposed Expert Witness List – 3 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
18	9/07/19	North East Link Project Inquiry and Advisory Committee Supplementary Directions (Evidence) - 9 July 2019	Mr Nick Wimbush, Chair IAC
19	9/07/19	Letter from North East Link Project Inquiry and Advisory Committee to Department of Environment, Land, Water and Planning (DELWP) Biodiversity - 9 July 2019	Mr Nick Wimbush, Chair IAC
20	9/07/19	Letter from North East Link Project Inquiry and Advisory Committee to Submitters - Additional Declaration - 9 July 2019	Mr Nick Wimbush, Chair IAC
21	11/07/19	North East Link Project Inquiry and Advisory Committee Supplementary Directions (Evidence and Experts) - 11 July 2019	Mr Nick Wimbush, Chair IAC
22	12/07/19	North East Link Inquiry and Advisory Committee Site Visit: Bus Route - Date: Friday 12 July 2019	North East Link Project
22A	12/07/19	Banyule Flats Reserve – A hidden treasure Warringal Conservation Society	Warringal Conservation Society
23	15/07/19	Letter from Department of Environment, Land, Water and Planning to Inquiry and Advisory Committee on Yarra River - Bulleen Precinct Advisory Committee and draft Framework - 15 07 2019	Ms Alana Macwhirter, Department of Environment, Land, Water and Planning
23a	“	Yarra River - Bulleen Precinct Land Use Framework Plan – draft May 2019 consultation	“
24	15/07/19	Letter from NELP to Inquiry and Advisory Committee - Filing of Expert Witness Reports - 15 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
24a	“	Allan Wyatt - Expert Witness Report - Landscape and Visual Amenity - 15 07 2019	“
24b	“	Brett Lane - Expert Witness Report - Ecology - 15 07 2019	“
24c	“	Cameron Miller - Expert Witness Report - Vegetation Offsets - 15 07 2019	“



No.	Date	Description	Provided by
24d	“	Darren Tardio - Expert Witness Report - Airborne Noise - 15 07 2019	“
24e	“	David Fuller - Expert Witness Report - Surface Water - 15 07 2019	“
24f	“	Frank Fler - Expert Witness Report - Air Quality - 15 07 2019	“
24g	“	Glenn Weston - Expert Witness Report - Social Impacts - 15 07 2019	“
24h	“	Glenn Weston - Expert Witness Report - Social Impacts - Open Space Impacts Part 1 - 15 07 2019	“
24i	“	Glenn Weston - Expert Witness Report - Social Impacts - Open Space Impacts Part 2 - 15 07 2019	“
24j	“	Glenn Weston - Expert Witness Report - Social Impacts - Open Space Impacts Part 3 - 15 07 2019	“
24k	“	Hugh Middlemis - Expert Witness Report - Groundwater - 15 07 2019	“
24l	“	Jackie Wright - Expert Witness Report - Human Health - 15 07 2019	“
24m	“	John Heilig - Expert Witness Report - Ground Borne Vibration - 15 07 2019	“
24n	“	John Kiriakidis - Expert Witness Report - Traffic and Transport - 15 07 2019	“
24o	“	Jonathan Howell-Meurs - Expert Witness Report - Aboriginal Cultural Heritage - 15 07 2019	“
24p	“	Kate Gray - Expert Witness Report - Heritage - 15 07 2019	“
24q	“	Kevin Begg - Expert Witness Report - Urban Design - 15 07 2019	“
24r	“	Kirsten Lawrence - Expert Witness Report - Air Quality - 15 07 2019	“
24s	“	Luis Willumsen - Expert Witness Report - Traffic Modelling - 15 07 2019	“
24t	“	Marianne Stoettrup - Expert Witness Reports - Business Impacts -15 07 2019	“
24u	“	Meg Caffin - Expert Witness Report - Tree Canopy - 15 07 2019	“
24v	“	Michael Barlow - Expert Witness Report - Strategic Planning - 15 07 2019	“

No.	Date	Description	Provided by
24va	23/07/19	Michael Barlow - Expert Witness Report - Land Use Assessment Report - 23 07 19	Ms Sallyanne Everett, Clayton Utz for NELP
24vb	"	Michael Barlow - Expert Witness Report - Land Use Assessment Report -Appendix D - Relocation strategy plans - 1 - 23 07 19	"
24vc	"	Michael Barlow - Expert Witness Report - Land Use Assessment Report -Appendix D - Relocation strategy plans - 2 - 23 07 19	"
24vd	"	Michael Barlow - Expert Witness Report - Land Use Assessment Report -Appendix D - Relocation strategy plans - 3 - 23 07 19	"
24w	15/07/19	Patrick Maiden - Expert Witness Report - Aquatic Ecology - 15 07 2019	Ms Sallyanne Everett, Clayton Utz for NELP
24x	"	Peter Nadebaum - Expert Witness Report - Contaminated Land and Spoil - 15 07 2019	"
24y	"	Steve Macklin - Expert Witness Report - Ground Movement - 15 07 2019	"
24z	"	Tim Veitch - Expert Witness Report - Strategic Transport Modelling - 15 07 2019	"
24aa	"	Tom Young - Expert Witness Report - Greenhouse Gas - 15 07 2019	"
25a	15/07/19	Brett Young - Expert Witness Report - Traffic and Parking - 15 07 2019	Ms Brenda Wilkinson, Carey Baptist Grammar School
25b	"	Davis Kunciuonas - Expert Witness Report - Master planning - 15 07 2019	"
25c	"	Frederick Hollett - Expert Witness Report - Infrastructure Services - 15 07 2019	"
26a	15/07/19	Dr Jason Thompson - Expert Witness Report - Health - 15 07 2019	Ms Michelle Giovas, Friends of Banyule
26b	"	Dr John Stone - Expert Witness Report - Transport and Traffic - 11 July 2019	"
26c	"	Dr Vicki Kotsirilos - Expert Witness Report - Health - 15 07 2019	"
27	15/07/19	Mr Knowles Tivendale - Expert Witness Report - Traffic and Transport - 15 07 19	Simon Barnes, La Trobe University
28	15/07/19	Letter from Banyule, Boroondara and Whitehorse City	Mr Terry

No.	Date	Description	Provided by
		Councils to Inquiry and Advisory Committee - Circulating Expert Evidence - 15 07 19	Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
28a	"	Andrew O'Brien - Expert Witness Report - Traffic - 15 07 2019	"
28b	"	Andrew O'Brien - Expert Witness Report - Traffic - Annexure A1 - 15 07 2019	"
28c	"	Andrew O'Brien - Expert Witness Report - Traffic - Annexure A2 - 15 07 2019	"
28d	"	Andrew O'Brien - Expert Witness Report - Traffic - Annexure B - 15 07 2019	"
28e	"	Frank Butera - Expert Witness Report - Noise - 15 07 2019	"
28f	"	Graeme Lorimer - Expert Witness Report - Ecology - 15 07 2019	"
28g	"	Iain Cowan - Expert Witness Report - Air Quality - 15 07 2019	"
28h	"	Lars Babendererde - Expert Witness Report - Tunnelling - 15 07 2019	"
28ha	22/07/19	Letter from Banyule, Boroondara and Whitehorse City Councils to Inquiry and Advisory Committee in regard to Lars Babendererde Expert Witness Report 28h. Appendix A2 documents - 22 07 19	Mr Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
28hb	"	Lars Babendererde – Expert Witness Report 28h. Appendix A Geological profile through the project area - 22 07 19	"
28hc	"	Lars Babendererde - Expert Witness Report 28h. Appendix B Vertical Alignment Option A2 - 22 07 19	"
28hd	"	Lars Babendererde – Expert Witness Report 28h. Appendix C Vertical Alignment Option A3 - 22 07 19	"
28he	"	Lars Babendererde – Expert Witness Report 28h. Appendix D Time Schedule North East Link Options A2 & A3 - 22 07 19	"
28hf	"	Lars Babendererde – Expert Witness Report 28h. Appendix E Time Schedule North East Link Variation Option A2 - 22 07 19	"
28i	15/07/19	Peter Dunn - Expert Witness Report - Traffic and	Mr Terry

No.	Date	Description	Provided by
		Transport - 15 07 2019	Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
28j	“	Richard Simon - Expert Witness Report - Open Space - 15 07 2019	“
28k	“	Terry Rawnsley - Expert Witness Report - Net Community Benefit - 15 07 2019	“
28l	“	William McDougall - Expert Witness Report - Traffic Modelling - 15 07 2019	“
29	15/07/19	Letter from Manningham City Council to Inquiry and Advisory Committee - Circulating Evidence 15 07 2019.	Ms Kate Morris, Harwood Andrews for Manningham City Council
29a	“	Brian Haratsis - Expert Witness Report - Economics - 15 07 2019	“
29b	“	Hilary Marshall - Expert Witness Report - Transport and Traffic - 15 07 2019	“
29c	“	Judith Stubbs - Expert Witness Report - Social impacts - 15 07 2019	“
29d	“	Rob Galbraith - Expert Witness Report - Arboriculture - 15 07 2019	“
29e	“	Steve Mueck - Expert Witness Report - Ecology - 15 07 2019	“
29f	“	Tom Evans - Expert Witness Report - Acoustics - 15 07 2019	“
30	15/07/19	Letter from Manningham City Council and Banyule, Boroondara and Whitehorse City Councils to Inquiry and Advisory Committee - Joint Expert Witness Reports - 15 July 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council and Mr Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
30a	“	Chris Smitt - Expert Witness Report - Groundwater - 15 07 2019	“
30b	“	Craig Czarny - Expert Witness Report - Urban Design - 15 07 2019	“
30c	“	Scott Dunn - Expert Witness Report - Surface Water -	“

No.	Date	Description	Provided by
		15 07 2019	
30d	“	Steve Schutt - Expert Witness Report - Landscape and Visual - 15 07 2019	“
30e	“	Warwick Bishop - Expert Witness Report - Surface Water - 15 07 2019	“
31	15/07/19	Letter from Marcellin College to Inquiry and Advisory Committee - Filing of Expert Witness Evidence - 15 07 2019	Rigby Cooke for Marcellin College
31a	“	Clark Briggs - Expert Witness Report - Civil Engineer - 15 07 2019	“
31b	“	Tom Evans - Expert Witness Report - Acoustic - 15 07 2019	“
31c	19/07/19	Charmaine Dunstan - Expert Witness Report - Traffic - 19 07 2019	Rigby Cooke for Marcellin College
31d	“	Letter from Marcellin College to Inquiry and Advisory Committee - Filing of Expert Witness Evidence - 19 07 2019	“
32	15/07/19	Prof Sarah Bekessy - Expert Witness Report - Ecology - 15 07 2019	Virginia Trescowthick, Environmental Justice Australia for Yarra Riverkeeper Association Inc
33	16/07/19	Valentine Gnanakone - Expert Witness Report - Traffic - 16 07 19	Samantha Megenis, Minter Ellison for ALH Group Property Holdings Pty Ltd
34	17/07/19	Letter from North East Link Project to Inquiry and Advisory Committee - Filing of documents - 17 July 2019	Ms Sallyanne Everett and Mr William Bartley, Clayton Utz for NELP
34a	“	North East Link Project - Part A Response - 17 July 2019	“
34b	“	North East Link Project Response to Inquiry and Advisory Committee Request for Information - 17 July 2019	“
34c	“	North East Link Project Response to the issues raised in the Environment Effects Statement Submissions - 17 July 2019	“
34d	22/07/19	North East Link Project Response to Inquiry and Advisory Committee Request for Information -	Ms Sallyanne Everett, Clayton Utz

No.	Date	Description	Provided by
		Spreadsheet summary of TTIA Appendix D (existing and forecast traffic volumes for the various scenarios)	for NELP
35	17/07/19	NELP Technical Note 1 - Project Delivery Framework – Environmental Management Framework (EMF)	Ms Sallyanne Everett and Mr William Bartley, Clayton Utz for NELP
36	“	NELP Technical Note 2 - Project Delivery Framework – Environmental Performance Requirements (EPR) wording and structure	“
37	“	NELP Technical Note 3 - General - Expert recommendations	“
37a		NELP Technical Note 3 – General - Expert recommendations - Attachment A	
38	“	NELP Technical Note 4 - Preparatory buildings and works	“
39	“	NELP Technical Note 5 - Traffic - Cross sections of Eastern Freeway	“
39a	“	NELP Technical Note 5 - Cross sections of Eastern Freeway - Attachment A	“
40	“	NELP Technical Note 6 - Ecology - Native vegetation in Warringal Parklands and Banyule Flats	“
41	“	NELP Technical Note 7 - Ecology - Other projects and vegetation removal	“
42	“	NELP Technical Note 8 - Ecology - Works adjacent to flying fox camp	“
42a	“	NELP Technical Note 8 - Works adjacent to flying fox camp - Attachment A	“
43	“	NELP Technical Note 9 - Overshadowing mapping	“
43a	“	NELP Technical Note 9 - Overshadowing mapping - Attachment A - Maps 1-9	“
43b	“	NELP Technical Note 9 - Overshadowing mapping - Attachment A - Maps 10-18	“
43c	“	NELP Technical Note 9 - Overshadowing mapping - Attachment A - Maps 19-27	“
43d	“	NELP Technical Note 9 - Overshadowing mapping - Attachment A - Maps 28-36	“
43e	“	NELP Technical Note 9 - Overshadowing mapping - Attachment A - Maps 37-43	“
43f	“	NELP Technical Note 9 - Overshadowing mapping -	“

No.	Date	Description	Provided by
		Attachment B	
43g	“	NELP Technical Note 9 - Overshadowing mapping - Attachment C	“
43h	“	NELP Technical Note 9 - Overshadowing mapping - Attachment D	“
44	“	NELP Technical Note 10 - Ecology - Native vegetation removal	“
45	“	NELP Technical Note 11 - Contamination and soil	“
45a	“	NELP Technical Note 11 - Contamination and soil - Attachment C	“
46	“	NELP Technical Note 12 - Traffic and Transport - Road reservation	“
46a	“	NELP Technical Note 12 - Attachment A - Part 1 Sheets 1 -14	“
46b	“	NELP Technical Note 12 - Attachment A - Part 2 Sheets 15 - 29	“
46c	“	NELP Technical Note 12 - Attachment A - Part 3 Sheets 30 - 41	“
47	“	NELP Technical Note 13 - Traffic - Mapping changes to connectivity	“
47a	“	NELP Technical Note 13 - Mapping changes to connectivity - Attachment A	“
48	“	NELP Technical Note 14 - Land use and Infrastructure - Mapping for GC98	“
48a	“	NELP Technical Note 14 - Mapping for GC98 - Attachment Aa	“
48b	“	NELP Technical Note 14 - Mapping for GC98 - Attachment Ab	“
48c	“	NELP Technical Note 14 - Mapping for GC98 - Attachment Ac	“
48d	“	NELP Technical Note 14 - Mapping for GC98 - Attachment B.	“
48e	“	NELP Technical Note 14 - Mapping for GC98 - Attachment C	“
49	“	NELP Technical Note 15 - Impacts on Private Rec Facilities Crown land	“
49a	“	NELP Technical Note 15 - Impacts on land - Attachment A	“

No.	Date	Description	Provided by
49b	“	NELP Technical Note 15 - Impacts on land - Attachment B1	“
49c	“	NELP Technical Note 15 - Impacts on land - Attachment B2	“
49d	“	NELP Technical Note 15 - Impacts on land - Attachment B3	“
49e	“	NELP Technical Note 15 - Impacts on land - Attachment C	“
49f	“	NELP Technical Note 15 - Impacts on land - Attachment D	“
50	“	NELP Technical Note 16 - Mapping works in open space	“
50a	“	NELP Technical Note 16 - Mapping works in open space - Attachment A	“
51	“	NELP Technical Note 17 - Bulleen Industrial Precinct	“
52	“	NELP Technical Note 18 - Ecology - Native vegetation offset site	“
53	“	NELP Technical Note 19 - In-tunnel air quality	“
53a	“	NELP Technical Note 19 - In-tunnel air quality - Attachment A	“
54	“	NELP Technical Note 20 - PFAS discussions	“
55	“	NELP Technical Note 21 - Groundwater	“
56	“	NELP Technical Note 22 - Traffic - Manningham interchange	“
57	“	NELP Technical Note 23 - Photomontages from ‘worst case’ vantage points	“
57a	“	NELP Technical Note 23 - Photomontages - Attachment A	“
58	“	NELP Technical Note 24 - Ecology - River Red Gum (Caltex Tree)	“
59	“	NELP Technical Note 25 - Proposed developments - Noise	“
59a	“	NELP Technical Note 25 - Proposed developments - Noise - Attachment A	“
59b	“	NELP Technical Note 25 - Proposed developments - Noise - Attachment A	“
60	19/07/19	NELP Technical note 26 - Groundwater investigation data	Ms Sallyanne Everett, Clayton Utz



No.	Date	Description	Provided by for NELP
60a	“	NELP Technical note 26 - Attachment A - Part a	“
60b	“	NELP Technical note 26 - Attachment A - Part b	“
60c	“	NELP Technical note 26 - Attachment A - Part c	“
60d	“	NELP Technical note 26 - Attachment B	“
60e	“	NELP Technical note 26 - Attachment C	“
60f	“	NELP Technical note 26 - Attachment D - Part a	“
60g	“	NELP Technical note 26 - Attachment D - Part b	“
60h	“	NELP Technical note 26 - Attachment D - Part c	“
60i	“	NELP Technical note 26 - Attachment E	“
60j	“	NELP Technical note 26 - Attachment F	“
60k	“	NELP Technical note 26 - Attachment G	“
60l	“	NELP Technical note 26 - Attachment H - Part a	“
60m	“	NELP Technical note 26 - Attachment H - Part b	“
60n	“	NELP Technical note 26 - Attachment I - Part a	“
60o	“	NELP Technical note 26 - Attachment I - Part b	“
60p	“	NELP Technical note 26 - Attachment J	“
60q	“	NELP Technical note 26 - Attachment K - Part a	“
60r	“	NELP Technical note 26 - Attachment K - Part b	“
60s	“	NELP Technical note 26 - Attachment K - Part c	“
60t	“	NELP Technical note 26 - Attachment K - Part d	“
60u	“	NELP Technical note 26 - Attachment K - Part e	“
61	17/07/19	NELP Technical Note 27 - Ibbotson Street - Watsonia	Ms Sallyanne Everett and Mr William Bartley, Clayton Utz for NELP
62	“	NELP Technical Note 28 - Air Emissions and Air Quality - Emergency exhaust	“
63	“	NELP Technical Note 29 - Surface water - Water Regime	“
64	23/07/19	Letter from Banyule, Boroondara and Whitehorse City Councils to Inquiry and Advisory Committee regarding expert witness meetings - 23 July 2019	Mr Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils

No.	Date	Description	Provided by
65	23/07/19	Letter from Banyule, Boroondara and Whitehorse City Councils to North East Link Project regarding traffic and arboriculture conclaves -23 July 2019	Mr Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
66	23/07/19	Letter from North East Link Project to Manningham City Council and Banyule, Boroondara and Whitehorse City Councils - Expert Conclaves - 23 July 2019	Ms Sallyanne Everett and Mr William Bartley, Clayton Utz for NELP
67	23/07/19	Joint Letter from Manningham City Council and Banyule, Boroondara and Whitehorse City Councils to North East Link Project regarding Lead Authors - 23 July 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council and Mr Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
68	23/07/19	Email from EPA to North East Link regarding EPA's Involvement at Expert Meetings - 23 July 2019	Ms Hannah McGuigan, EPA Victoria
69	23/07/19	Email from Banyule, Boroondara and Whitehorse City Councils to Planning Panels Victoria - Expert Conclaves - 23 July 2019	Ms Sophie Jacobs, Maddocks for Banyule, Boroondara and Whitehorse City Councils
70	23/07/19	Letter from Inquiry and Advisory Committee to North East Link Project, Manningham City Council and Banyule, Boroondara and Whitehorse City Councils - Expert Conclave Correspondence - 23 July 2019	Mr Nick Wimbush, Chair IAC
71	23/07/19	Email from North East Link Project to EPA regarding EPA's Involvement at Expert Meetings - 23 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
72	23/07/19	Letter from North East Link Project to Manningham City Council and Banyule, Boroondara and Whitehorse City Councils - Expert Conclaves and Lead Authors -24 July 2019	Ms Sallyanne Everett and Mr William Bartley, Clayton Utz for NELP
73	24/07/19	Letter from Manningham City Council to North East Link Project - Expert Conclaves Traffic - 24 July 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council
73a	"	Email North East Link Project Expert Witness John	"

No.	Date	Description	Provided by
		Kiriakidis to Manningham City Council Expert Witness Hillary Marshall - 23 July 2019	
74	24/07/19	CW2 Interim Report to Inquiry and Advisory Committee - Air Emissions and Air Quality - Catherine Wilson - 24 July 2019	Ms Catherine Wilson
75	24/07/19	SA2 Interim Report to Inquiry and Advisory Committee - Urban Design - Stephen Axford - 24 July 2019	Mr Stephen Axford
76	24/07/19	CB2A Interim Report to Inquiry and Advisory Committee - Ground Movement - Craig Barker – 24 July 2019	Mr Craig Barker
77	“	CB2B Interim Report to Inquiry and Advisory Committee - Groundwater - Craig Barker – 24 July 2019	“
78	“	CB2C Interim Report to Inquiry and Advisory Committee - Contamination - Craig Barker – 24 July 2019	“
79	25/07/19	NELP List of tabled technical notes as at 25 July 2019	Ms Emily Porter for NELP
80	25/07/19	NELP Record of Further Information Requests from Submitters	Ms Emily Porter for NELP
81	25/07/19	NELP Register of expert meetings up to 12 July	Ms Emily Porter for NELP
82	25/07/19	NELP Meetings between expert witnesses	Ms Emily Porter for NELP
83	25/07/19	NELP presentation	Ms Emily Porter for NELP
84	25/07/19	BBW Opening Submission	Mr Peake for BBW
85	25/07/19	NELP Project overview Traffic functionality	Ms Emily Porter for NELP
86	26/07/19	Minister for Planning - Opening submission - 25 July 2019	Mr Nicholas Tweedie for Minister for Planning
87	26/07/19	Manningham City Council - Opening submission - 26 July 2019	Mr Rupert Watters for Manningham City Council
88a	26/07/19	Marcellin College - Opening submission - 26 July 2019	Ms Juliet Forsyth for Marcellin College
88b	“	Marcellin College Statement by Mr Murphy	“
88c	“	Marcellin College Statement by Mr Reynolds	“

No.	Date	Description	Provided by
89	26/07/19	Manningham – Mordialloc bypass extract	Mr Watters for Manningham
90	26/07/19	Mr John Young Submission (Introductory Comments and Submission 793)	Mr John Young
91	26/07/19	Banyule, Boroondara, Whitehorse additional submission	Mr Finanzio for Banyule, Boroondara and Whitehorse
92	26/07/19	Banyule, Boroondara, Whitehorse letter from Biosphere Pty Ltd	Mr Finanzio for Banyule, Boroondara and Whitehorse
93	26/07/19	Letter from Department of Environment, Land, Water and Planning (DELWP) Biodiversity to Inquiry and Advisory Committee – 25 July 2019	Mr Stephen H Chapple for Department of Environment, Land, Water and Planning
93a	“	Attachment 1 - Native Vegetation Removal Report - 24 June 2019	“
93b	“	Attachment 2 - Grey Headed Flying Fox - SHU Search Result	“
93c	“	Attachment 3 - Grey Headed Flying Fox - HDM statewide	“
93d	“	Attachment 4 - Grey Headed Flying Fox - HDM Port Phillip Region	“
93e	“	Attachment 5 - Grey Headed Flying Fox - HDM Middle Yarra	“
93f	“	Attachment 6 - GHU Search Result	“
93g	“	Attachment 7 - Net gain offset plan May 2007	“
94	26/07/19	Yarra City Council - Submission notes - 26 July 2019	Mr Simon Exon for the City of Yarra
95	29/07/19	Strategic traffic modelling conclave report	NELP
96	29/07/19	NELP Opening remarks Group 1 evidence	Ms Porter for NELP
97	29/07/19	NELP expert witness, Mr Barlow, slide presentation	Clayton Utz for NELP
98	29/07/19	NELP Technical Note 30 Northern tunnel section BabENG	Mr Townshend for NELP
99	29/07/19	NELP Technical Note 31 Northern tunnel section SMART	Mr Townshend for NELP
100	29/07/19	NELP Technical Note R32 Watsonia alternate design Elder Street	Mr Townshend for NELP

No.	Date	Description	Provided by
101	29/07/19	NELP Technical Note R33 Lower Plenty Road Interchange modifications	Mr Townshend for NELP
102	29/07/19	NELP Technical Note R34 Potential Bulleen modification	Mr Townshend for NELP
103	29/07/19	NELP Technical Note 35 Revised groundwater dependent ecosystem GDE assessment	Mr Townshend for NELP
104	29/07/19	NELP Technical Note 36 Studley Park Gum Surveys	Mr Townshend for NELP
105	29/07/19	NELP Technical Note 37 Sport and Recreation relocation update	Mr Townshend for NELP
106	29/07/19	NELP expert witness, Mr Begg, slide presentation	Ms Porter for NELP
107	29/07/19	Groundwater Conclave Report	NELP
108	30/07/19	Business and Economics Expert Conclave Report – 29 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
109	30/07/19	Marcellin College Traffic Expert Conclave Report – 29 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
110	30/07/19	Carey Baptist Grammar School Traffic Expert Conclave Report – 29 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
111	30/07/19	NELP - A3 Photomontages of Technical Note 23 – Attachment A - 30 July 2019	Clayton Utz for NELP
112	30/07/19	NELP – Allan Wyatt – Landscape and visual Presentation - 30 July 2019	Clayton Utz for NELP
113	30/07/19	NELP Bulleen Interchange alternate design	Clayton Utz for NELP
114	30/07/19	NELP Technical Note 39 – Proposed changes to the Project Boundary	Clayton Utz for NELP
115	30/07/19	NELP Technical Note 38 – Replacement of transmission towers	Clayton Utz for NELP
116a	30/07/19	Incorporated Document July 2019 Tracked changes	Clayton Utz for NELP
116b	30/07/19	Incorporated Document July 2019 Non-Tracked changes	Clayton Utz for NELP
117a	30/07/19	NELP Lower Plenty Road alternate design	Clayton Utz for NELP
117b	30/07/19	NELP Lower Plenty Road alternate design (Surface only)	Clayton Utz for NELP

No.	Date	Description	Provided by
118	30/07/19	Manningham Club Traffic Expert Conclave Report - 30 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
119	31/07/19	Surface Water Expert Conclave Report - 30 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
120	31/07/19	Noise and vibration Expert Conclave Report - 30 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
121	31/07/19	NELP Opening Remarks Group 2: Transport modelling and traffic	Clayton Utz for NELP
122	31/07/19	NELP expert witness, Mr Veitch PowerPoint presentation	Clayton Utz for NELP
123	31/07/19	Health Expert Conclave Report - 31 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
124	31/07/19	Manningham, Boroondara, Banyule and Whitehorse City Councils Traffic Expert Conclave Report - 31 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
125	31/07/19	Traffic data from VLC tabled in Conclave 28/7/2019	Mr Finanzio for BBW
126	31/07/19	Peer review of Transport Modelling for North East Link, Dr Willumsen	Ms Sallyanne Everett, Clayton Utz for NELP
127	31/07/19	NELP witness Dr Willumsen PowerPoint presentation	Clayton Utz for NELP
128	31/07/19	Ecology Expert Conclave Report - 31 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
129	31/07/19	NELP Response to expert recommendations Response to IAC Request For Information (20 June 2019) request No. 2	Clayton Utz for NELP
130	31/07/19	NELP Revision 1 EPR 29 July 2019	Clayton Utz for NELP
131	1/08/19	Air Quality Expert Conclave Report - 31 July 2019	Ms Sallyanne Everett, Clayton Utz for NELP
132	1/08/19	Marcellin College - NEL-Bulleen-Construction Staging 2a-Bulleen Construction Staging East - V4 - 31 July 2019	Ms Rhodie Anderson Rigby Cooke for Marcellin College
133	1/08/19	NELP Technical Note 40, Updated Salvage and Translocation Plan	Clayton Utz for NELP
134	1/08/19	NELP Technical Note 41, Initial response to Andrew	Clayton Utz for NELP

No.	Date	Description	Provided by
		O'Brien Alternative Design	
135	1/08/19	NELP expert witness, Mr Kiriakidis PowerPoint presentation	Clayton Utz for NELP
136	1/08/19	Letter from Carey Baptist Grammar School to IAC and Counsel Assisting - 31 July 2019	Mr Andrew Gunter Hunt and Hunt for Carey Baptist Grammar School
136a	"	Carey Baptist Grammar School - former confidential submission - 11 June 2019 - 31 July 2019	"
136b	"	Carey Baptist Grammar School - Michael Cawood - Expert Witness Report - Surface Water and Flooding - 15 July 2019 - 31 July 2019	"
136c	"	Carey Baptist Grammar School - Christophe Delaire - Expert Witness Report - Noise and vibration - 15 July 2019 - 31 July 2019	"
136d	"	Carey Baptist Grammar School - Peter Oxnam - Expert Witness Report - Land and Groundwater Contamination - 15 July 2019 - 31 July 2019	"
136e	"	Carey Baptist Grammar School - Ben Sichlau - Expert Witness Report - Air Quality - 12 July 2019 - 31 July 2019	"
137	1/08/19	Manningham City Council - Estelle Street aerial image - 1 August 2019	Mr Rupert Watters for Manningham City Council
138	1/08/19	Manningham City Council - Motorway Design Volume Guide 10 Extracts - 1 August 2019	"
139	2/08/19	NELP - Correspondence regarding Studley Gum Report	Clayton Utz for NELP
140	2/08/19	NELP - Technical Note 42, Tunnel depth under river	Clayton Utz for NELP
141	2/08/19	BBW – traffic data received from Mr Kiriakidis, Springvale Road and Surrey Road. Comparison of inputs between GTA and Mr O'Brien	Mr Finanzio for BBW
142	2/08/19	Mr Michael Goddard (Submission 518)	Mr Michael Goddard
143	5/08/19	Mr Tom Melican (Submission 787) – Speaking notes and tunnel option plan	Mr Tom Melican
144	5/08/19	NELP Opening remarks for Group 3 witnesses	Clayton Utz for NELP
145	5/08/19	NELP expert witness Dr Nadebaum PowerPoint presentation	Clayton Utz for NELP
146	5/08/19	NELP expert witness Mr Middlemis PowerPoint presentation	Clayton Utz for NELP

No.	Date	Description	Provided by
147	5/08/19	NELP expert witness Mr Fuller PowerPoint presentation	Clayton Utz for NELP
148	5/08/19	NELP Technical Note 42 - Southern Portal Flood Wall Location - 5 August 2019	Clayton Utz for NELP
149a	5/08/19	NELP Letter to DELWP dated 16 April 2019, Native Vegetation Offsets	Clayton Utz for NELP
149b	“	DELWP Letter to NELP dated 5 June 2019 regarding Native Vegetation Offsets	“
150	6/08/19	Dodo Environmental Report - Water requirements of the rehabilitation of Bolin Bolin Billabong dated 25 April 2010 - 6 August 2019	Ms Sallyanne Everett, Clayton Utz for NELP
151	6/08/19	Bolin Bolin additional hydrogeological information, GHD Memo, 11 July 2019 - 6 August 2019	Ms Sallyanne Everett, Clayton Utz for NELP
152	6/08/19	NELP EPR Revision 2 6 August 2019	Clayton Utz for NELP
153	6/08/19	NELP Group 4 evidence opening remarks	Clayton Utz for NELP
154	6/08/19	NELP expert witnesses Brett Lane, Cameron Miller and Patrick Maiden, joint PowerPoint presentation	Clayton Utz for NELP
155	6/08/18	Yarra Riverkeeper Association, Victorian Memorandum for Health and Nature 3 April 2017	Mr Lindsay for Yarra Riverkeeper Association
156	6/08/19	NELP expert witness Meg Caffin PowerPoint presentation	Clayton Utz for NELP
157	6/08/19	NELP EPR Revision 3 – noise and air quality - 6 August 2019	Ms Sallyanne Everett, Clayton Utz for NELP
158	6/08/19	Proposed order of expert witnesses for combined case for Manningham City Council (MCC) and Banyule City Council, Boroondara City Council and Whitehorse City Council (BBW CC) - 2 August 2019	Ms Tessa D’Abbs, Harwood Andrews for Manningham City Council and Banyule, Boroondara and Whitehorse City Councils
159	7/08/19	Letter from Manningham City Council to Inquiry and Advisory Committee attaching final Employment Lands Planning Study report - 7 August 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council
159a	“	Manningham City Council and NELP - Employment Lands Study Final Report 30 July 2019 - 7 August 2019	“
160	7/08/19	NELP Noise and Vibration Opening remarks	Clayton Utz for NELP



No.	Date	Description	Provided by
161	7/08/19	NELP expert witness Mr Tardio PowerPoint presentation	Clayton Utz for NELP
162	7/08/19	NELP Air Quality opening remarks	Clayton Utz for NELP
163	7/08/19	NELP expert witness Mr Frank Fler erratum	Clayton Utz for NELP
164	7/08/19	NELP expert witness Mr Frank Fler PowerPoint presentation	Clayton Utz for NELP
165	7/08/19	EPA AMOG M5 East Tunnel Filtration Trial Evaluation Program	EPA
166	7/08/19	NELP Technical note 44 Construction Activities	Clayton Utz for NELP
167	7/08/19	NELP Project noise wall heights for design year with at treatment properties	Clayton Utz for NELP
168	8/08/19	EPA Submission Ms Alexandra Guild	EPA
169	8/08/19	Carey Baptist Grammar PowerPoint presentation	Mr Stuckey for Carey Baptist Grammar
170	8/08/19	Carey Baptist Grammar Mr Stuckey speaking notes	Mr Stuckey for Carey Baptist Grammar
171	8/08/19	Carey Baptist Grammar expert witness Mr Young speaking notes	Mr Stuckey for Carey Baptist Grammar
172	8/08/19	Carey Baptist Grammar expert witness Mr Cawood speaking notes	Mr Stuckey for Carey Baptist Grammar
173	9/08/19	NELP expert witness Mr Barlow Land Use Impact PowerPoint presentation	Clayton Utz for NELP
174	9/08/19	Diamond Creek to Ringwood Report by The Road Planning Liaison Committee July 1979	Mr Finanzio for BBW
175	9/08/19	Nillumbik Shire Council (submission 691) - presentation notes and presentation – 9 August 2019	Mr Joseph Emmanuel for Nillumbik Shire Council
176	9/08/19	Wildlife Victoria (Submission 46) - Presentation notes - 9 August 2019	Dr Megan Davidson
177	9/08/19	Department of Transport Submissions	Mr Connor for DoT
178	9/08/19	VicRoads Motorway Design Volume Guide December 2017	Mr Connor for DoT
179	9/08/19	Graphed Crash data (PowerPoint slides)	Mr Connor for DoT
180	9/08/19	Excerpt from The Study of Road Safety on Urban Motorways John Gaffney	Mr Connor for DoT
181	9/08/19	NELP Technical Note 45 Permanent flood wall locations	Clayton Utz for NELP

No.	Date	Description	Provided by
182	9/08/19	NELP Technical Note 46 Investigation areas for preparation of Cultural Heritage Management Plan	Clayton Utz for NELP
183	12/08/19	Letter from Manningham City Council to Inquiry and Advisory Committee - Requesting Manningham site inspection - 11 August 2019	Kate Morris, Harwood Andrews for Manningham City Council
184	12/08/19	Birrarung Council - Presentation - 12 August 2019	Mr Chris Chesterfield
185	12/08/19	NELP Amendment to EPR SC2	Clayton Utz for NELP
186	12/08/19	NELP expert witness Dr Wright PowerPoint presentation	Clayton Utz for NELP
187	12/08/19	NELP Opening remarks Group 5: Business and Social Impacts	Clayton Utz for NELP
188	12/08/19	NELP Overview of Social Impacts of the North East Link Project prepared by Public Place May 2019	Clayton Utz for NELP
189	12/08/19	NELP expert witness Ms Stoettrup PowerPoint presentation	Clayton Utz for NELP
190	12/08/19	NELP expert witness Mr Weston PowerPoint presentation	Clayton Utz for NELP
191	13/08/19	North East Link Request for Information Landscape and Visual and Heritage 13 August 2019	Mr Nick Wimbush, Chair IAC
192	14/08/19	NELP - Technical Note 47 - Rationale for land bridges (13 August 2019) - 14 August 2019	Clayton Utz for NELP
193	14/08/19	NELP - Technical Note 48 - Tunnelling Beneath Simpson Barracks Lower Plenty Road (13 August 2019) - 14 August 2019	Clayton Utz for NELP
194	14/08/19	NELP - Technical Note 49 - Response to IAC queries (13 August 2019) - 14 August 2019	Clayton Utz for NELP
195	14/08/19	NELP - SLR Memorandum (6 August 2019) - 14 August 2019	Clayton Utz for NELP
196	14/08/19	BBW Site visit (13 August 2019) itinerary	BBW
196a	14/08/19	Boroondara tennis map	BBW
196b	14/08/19	Banyule Flood map	BBW
197	14/08/19	Presentation/submission documents of Mr Buono (Submitter 646)	Mr Buono
198	14/08/19	BBW expert witness Mr Rawnsley powerpoint presentation	Mr Finanzio for BBW
199	14/08/19	Strategic Review of the WestConnex Proposal SGS Economics and Planning February 2015	Clayton Utz for NELP

No.	Date	Description	Provided by
200	14/08/19	Disincentivising overbidding for toll road concessions Oxera and RB Consult April 2012	Clayton Utz for NELP
201	14/08/19	Cost overruns in transport infrastructure Grattan Institute October 2016	Clayton Utz for NELP
202	14/08/19	Discount rates for Commonwealth Infrastructure projects Dr Jonathan Deans 3/10/2018	Clayton Utz for NELP
203	14/08/19	Unfreezing discount rates, Transport infrastructure for tomorrow February 2018	Clayton Utz for NELP
204	14/08/19	Long run economic and land use impacts of major infrastructure projects	Clayton Utz for NELP
205	14/08/19	State Planning Symposium, Population Growth – Setting the Scene, SGS Economics and Planning, 12 October 2018	Clayton Utz for NELP
206	14/08/19	Manningham expert witness Mr Haratsis, powerpoint presentation	Mr Watters for Manningham CC
207a	14/08/19	Investigations Related to Tennis Centre Relocation - Freeway Gold Course Offset Option B	Clayton Utz for NELP
207b	14/08/19	Investigations Related to Tennis Centre Relocation - Koonung Creek Reserve	Clayton Utz for NELP
207c	14/08/19	Investigations Related to Tennis Centre Relocation - Musca Street Reserve	Clayton Utz for NELP
208	14/08/19	Email from Member of Parliament to local resident dated 13 August 2019	Mr Buono
209	14/08/19	Confidential document for Inquiry and Advisory Committee	Ms Sallyanne Everett, Clayton Utz for NELP
210	15/08/19	BBW expert witness Dr Cowan PowerPoint presentation	Mr Peake for BBW
211	15/08/19	SEPP AQM	Clayton Utz for NELP
212	15/08/19	The Real World driving emissions test ABMARC summary report 2017	Clayton Utz for NELP
213	15/08/19	Average age of EU fleet by vehicle type 2013-2017 European Automobile Manufacturers Association	Clayton Utz for NELP
214	15/08/19	Motor Vehicles in Australia 2019, Australian Automotive Dealer Association	Clayton Utz for NELP
215	15/08/19	MCC and Marcellin expert witness Mr Evans PowerPoint presentation	Ms Morris for Manningham and Ms Forsythe for Marcellin

No.	Date	Description	Provided by
216	15/08/19	BBW expert witness Mr Butera PowerPoint presentation	Mr Peake for BBW
217	15/08/19	Traffic conclave 7 August 2019 Bulleen Road Precinct report	Clayton Utz for NELP
218	15/08/19	NELP Technical Note 50 Cultural Heritage Report – Bolin Bolin Billabong	Clayton Utz for NELP
219	16/08/19	Letter from Banyule, Boroondara and Whitehorse City Council - Traffic expert meeting - 16 August 2019	Ms Sophie Jacobs, Maddocks for Banyule, Boroondara and Whitehorse City Councils
219a	“	Banyule, Boroondara and Whitehorse City Councils, Manningham City Council, Marcellin College, Carey Grammar and Manningham Club and Hotel - Traffic Expert Meeting - 16 August 2019	“
220	19/08/19	Marcellin College (Submission 718) - Site Visit map - 19 August 2019	Ms Rhodie Anderson Rigby Cooke for Marcellin College
221	“	Ms Dunstan Presentation	“
222	“	Marcellin College - Addendum Witness Statement - Mr Mark Murphy - Principal - 19 August 2019	“
223	“	Marcellin College (Submission 718) - Submissions Final - 19 August 2019	“
223a	“	Marcellin College (Submission 718) - Submission Consolidated Attachments - 19 August 2019	“
224	19/08/19	Friends of Banyule expert witness Dr Stone PowerPoint presentation	Ms Giovas for Friends of Banyule
224a	“	NELP Community Liaison Group (north) December 2018 copy of presentation	“
224b	“	National Trust Media Release 20 May 2019	“
224c	“	Email from Clayton Utz titled North East Link EES – Further Information Request dated 3 July 2019	“
224d	“	Friends of Banyule, Appendix C Key Community Infrastructure Relative to NEL	“
224e	“	Friends of Banyule Submission on NELP EES	“
224f	“	Friends of Banyule - Presentation to IAC - 19 August 2019	“
225	20/08/19	NELP - Glenn Weston - Presentation notes	Ms Sallyanne

No.	Date	Description	Provided by
			Everett, Clayton Utz for NELP
225a	“	NELP - Glenn Weston - Comments on EPRs referred to in evidence	“
226	20/08/19	Friends of Banyule Appendix A Review of Risk Register	Ms Giovas for Friends of Banyule
226a	“	Friends of Banyule Revised and Reviewed EPR	“
227	“	Friends of Banyule expert witness Dr Thompson PowerPoint presentation	“
228	20/08/19	BBW and MCC expert witness Mr Schutt PowerPoint presentation	Harwood Andrews for MCC and Maddocks for BBW
229	“	BBW CC and MCC expert witness Mr Peter Dunn PowerPoint presentation	“
230	21/08/19	Andrew O'Brien Response to Technical Note 41 dated 20/08/2019	Maddocks for BBW
231	21/08/19	BBW expert witness Mr McDougall PowerPoint presentation	Maddocks for BBW
231a	21/08/19	Rogerson and Carnovale – Introducing convergent feedback in the Melbourne Integrated Transport Model	Maddocks for BBW
232	21/08/19	Alternative concept design for Manningham interchange - Letter from Hilary Marshall dated 20 August 2019	Harwood Andrews for Manningham
233	21/08/19	DoT Memo on O'Brien Alternative Review Hoddle Street Queue 19 August 2019	Mr Connor for DoT
233a	21/08/19	DoT Memo on O'Brien Alternative Review Eastbound Performance 19 August 2019	Mr Connor for DoT
234	21/08/19	DoT Responses to questions raised by IAC – 20 August 2019	Mr Connor for DoT
235	21/08/19	Extract from TTIA Appendix C2 page C-63	Clayton Utz for NELP
236	21/08/19	Extract from Victoria in Future 2019 July 2019	Clayton Utz for NELP
237	21/08/19	Infrastructure Australia Urban Transport Crowding and Congestion	
238	21/08/19	Mr Morris analysis of population	Clayton Utz for NELP
239	21/08/19	Excerpt from Transport Integration Act 2010	Clayton Utz for NELP
240	21/08/19	BBW and MCC expert witness Mr Czarny PowerPoint	Maddocks for BBW

No.	Date	Description	Provided by
		presentation	and Harwood Andrews for Manningham
241	21/08/19	BBW expert witness Mr Simon PowerPoint presentation	Maddocks for BBW
242	21/08/19	Freeway Public Golf Course Market Insights and Future Viability prepared for Boroondara by WellPlayed Golf Business Consultancy	Maddocks for BBW
243	21/08/19	Joint Submissions of Manningham CC, NELP and Counsel for IAC on UGB - 21 August 2019	Harwood Andrews for MCC, Clayton Utz for NELP and Counsel assisting the IAC
244	22/08/19	Manningham CC expert witness Ms Marshall PowerPoint presentation	Harwood Andrews for MCC
245	22/08/19	BBW expert witness Mr O'Brien PowerPoint presentation	Maddocks for BBW
246	22/08/19	Excerpt from IAC Report West Gate Tunnel Project 23 October 2017	Mr Connor for DoT
247	23/08/19	NELP Revised and updated plan for Musca Street Tennis Centre relocation	Clayton Utz for NELP
248	23/08/19	Laura Moorfield (Submitter 97), presentation notes	Ms Moorfield
249	23/08/19	DoT Aid memoire for Mr O'Brien Currency of materials referenced to in Mr O'Brien's report	Mr Connor for DoT
249a	23/08/19	DoT Aid memoire for Mr O'Brien Elements of Alternative Design and Meeting Requirements/Standards	Mr Connor for DoT
250	23/08/19	Sketches of road sections by Mr O'Brien emailed to NELP	Clayton Utz for NELP
251	23/08/19	Managed Motorways Framework Vic Roads March 2017	Clayton Utz for NELP
252	23/08/19	Excerpt from Guide to Road Design Part 3 Geometric Design Austroads 2016	Clayton Utz for NELP
253	23/08/19	Banyule expert witness Mr Babendererde PowerPoint presentation	Maddocks for Banyule
254	23/08/19	Manningham CC expert witness Dr Stubbs PowerPoint presentation	Harwood Andrews for Manningham
255a	26/08/19	NELP - Response to Committee RFI from Kate Gray - Historical Heritage 23 August 2019	Ms Sallyanne Everett, Clayton Utz for NELP
255b	"	NELP - Response to Committee RFI from Allan Wyatt -	"

No.	Date	Description	Provided by
		Landscape and visual 23 August 2019	
256	26/08/19	Discussion Paper – Planning for Golf in Victoria DELWP June 2017	Clayton Utz for NELP
257	26/08/19	BBW and MCC expert witness Mr Smitt PowerPoint presentation	Maddocks for BBW and Harwood Andrews for MCC
258	26/08/19	BW and MCC expert witness Mr Bishop PowerPoint presentation	Maddocks for BBW and Harwood Andrews for MCC
259	26/08/19	BW and MCC expert witness Mr Dunn PowerPoint presentation	Maddocks for BBW and Harwood Andrews for MCC
260	26/08/19	Integrated Water Management Framework for Victoria DELWP September 2018	Mr Lindsay for Yarra Riverkeeper
261	27/08/19	NELP – Environmental Performance Requirements (EPRs) - consolidated versions of revisions 1 to 4 for IAC - 27 Aug 19	Ms Sallyanne Everett, Clayton Utz for NELP
262	27/08/19	Extract from Assessor’s handbook – Applications to remove destroy or lop native vegetation. DELWP October 2018	Mr Lindsay for Yarra Riverkeeper
263	27/08/19	Robert Galbraith Expert Witness Presentation - Arboriculture	Harwood Andrews for MCC
264	27/08/19	Steve Mueck Expert Witness Presentation - Ecology	“
265a	27/08/19	BBW expert witness Dr Lorimer correction to expert witness report (Doc 28f) page 25	Maddocks for BBW
265b	27/08/19	BBW expert witness Dr Lorimer PowerPoint presentation	Maddocks for BBW
266	“	NELP - Presentation to Banyule City Council - Requested by IAC - June 2018	Sallyanne Everett for Clayton Utz
267	“	NELP - Bonbeach Urban Design Guidelines - Requested by IAC - 21 August 2019	“
268	“	NELP - Melbourne Metro Urban Design Strategy - Requested by IAC -21 August 2019	“
269	“	NELP - Urban Design Framework - LXRA - Requested by IAC - 21 August 2019	“
270	“	Ms Crosswhite (Submitter 820) PowerPoint presentation	Ms Crosswhite
271a	“	Ms Reifschneider (Submitter 181) and Mr Kio (Submitter 378) PowerPoint presentation	Ms Reifschneider and Mr Kio

No.	Date	Description	Provided by
271b	"	Heavy vehicle curfew hours Victorian Transport Association (page 11)	Ms Reifschneider and Mr Kio
271c	"	OD Route 1 Melway Map	Ms Reifschneider and Mr Kio
271d	"	VicRoads emails re OD routes (pages 5, 11, 38 and 75)	Ms Reifschneider and Mr Kio
271e	"	Rosanna Road, Heidelberg, Road Safety Assessment Safe System Solutions March 2016	Ms Reifschneider and Mr Kio
272a	"	Ms Lee (submitter 470) and Mr Phillips (submitter 471) presentation notes	Ms Lee and Mr Phillips
272b	"	Ms Lee (submitter 470) and Mr Phillips (submitter 471) PowerPoint presentation	Ms Lee and Mr Phillips
273	"	Blackburn Village Residents Group (submitter 808) presentation	Mr Morrison for Blackburn Village Residents Group
274	"	Mr Carter (submitter 29) PowerPoint presentation	Mr Carter
275a	"	Ms Tsoutsouvas (submitter 746) PowerPoint presentation	Ms Tsoutsouvas
275b	"	Ms Tsoutsouvas (submitter 746) presentation notes	Ms Tsoutsouvas
276	28/08/19	North East Link Project Inquiry and Advisory Committee – Changes to Hearing Timetable and Supplementary Directions – 28 August 2019	Mr Nick Wimbush, Chair, Inquiry and Advisory Committee (IAC)
277	26/08/19	Letter to IAC regarding cross examination of Mr Barlow - 26 August 2019	Rigby Cooke for Marcellin College
278	28/08/19	Letter to IAC regarding Peter Oxnam - 28 August 2019	Mr Andrew Gunter Hunt and Hunt for Carey Baptist Grammar School
278a	"	EES Additional Recommendation - Peter Oxnam - 28 August 2019	"
279	"	Letter to IAC - regarding supplementary submissions - 28 August 2019	"
280	28/08/19	Letter to IAC regarding submissions and evidence on alternate designs - 28 August 2019	Amanda Johns, Minter Ellison for ALH Group Property Holdings Pty Ltd
281	28/08/19	NELP - Ms Porter Slides used in Cross examination of	Ms Sallyanne



No.	Date	Description	Provided by
		Craig Czarny on 21 08 19 - 28 August 2019	Everett, Clayton Utz for NELP
282	“	NELP - Ms Porter Slides used in Cross examination of Richard Simon - 26 08 19 - 28 August 2019	“
283	30/08/19	NELP – Westgate Freeway History	Clayton Utz for NELP
284	30/08/19	North East Integrated Transport Study September 2007, extract	Clayton Utz for NELP
285	30/08/19	Submissions on behalf of La Trobe University – Matthew Townsend	Mr Townsend for La Trobe University
286	30/08/19	La Trobe University - Statement of Ms McDonald – Vice President La Trobe University	Mr Townsend for La Trobe University
287	30/08/19	La Trobe University – PowerPoint presentation of Ms McDonald – Vice President La Trobe University	Mr Townsend for La Trobe University
288	30/08/19	La Trobe University – PowerPoint presentation of Mr Tivendale	Mr Townsend for La Trobe University
289	30/08/19	Macleod College Masterplan	Macleod Junior Football Club and Macleod Cricket Club
290	30/08/19	NELP – Proposed Useable site area	Clayton Utz for NELP
291	2/09/19	NELP – Technical Note 51 – Response to O’Brien material	Clayton Utz for NELP
292	2/09/19	Ms Giovas (Submitter 512) PowerPoint presentation	Ms Michelle Giovas
292a	9/9/19	Ms Giovas (Submitter 512) Speaking Notes	Ms Michelle Giovas
293	2/09/19	Nagambie Resources, Mr Earle PowerPoint presentation	Mr James Earle
294	2/09/19	Ms Krivanek (submitter 849) written presentation	Ms Rosamund Krivanek
295	2/09/19	Mr Watson (submitter 60) presentation material	Mr Barry Watson
296	2/09/19	Ms Lynskey (submitter 215) presentation notes	Ms Rachel Lynskey
297a	2/09/19	Warringal Conservation Society (WCS) Submission to the NEL Community Liaison Group	Ms Daphne Hards for WSC
297b	2/09/19	WCS Submission to the IAC	“
297c	2/09/19	WCS PowerPoint presentation - Parts 1 and 2	“
298	2/09/19	Letter to IAC – Lease arrangements	Mr Chris DeSilva for Yarra Junior Football League
299	2/09/19	Mr Scott presentation notes	Mr David Scott

No.	Date	Description	Provided by
300	2/09/19	Koonung Creek Reserve Balwyn North Preservation Group (Sub 651) - Presentation	Ms Mary Harnan and Ms Gabrielle de Bruyn
301	2/09/19	Manningham City Council - Site Visit Itinerary and documents - 30 August 2019	Mr Andrew Mangan for Manningham City Council
302	2/09/19	Record of inspection Simpson Barracks and Appendix A - FINAL	Ms Dalia Cook, Deputy Chair and Mandy Elliott Inquiry and Advisory Committee (IAC)
303	3/09/19	Media Release, The Hon Jacinta Allen 2 September 2019	Clayton Utz for NELP
304a	3/09/19	Submission on behalf of Bulleen Art and Garden (Submitter 629) - Planology	Mr Wong for Bulleen Art and Garden (BAAG)
304b	3/09/19	Submission of Mr McMorran CEO of Bulleen Art and Garden (Submitter 629)	Mr Wong for BAAG
304c	3/09/19	BAAG (Submitter 629) – EPR's IAC Version Revision 1 with comments from BAAG	Mr Wong for BAAG
304d	3/09/19	BAAG (Submitter 629) - Presentation Slides - 3 September 2019	Mr Wong for BAAG
305	3/09/19	Manningham City Council expert witness, Dr Stubbs, comments re EPR	Ms Morris for MCC
306	3/09/19	Sanctum Studio (Submitter 727) - Presentation Slides	Lachlan Plain for Sanctum Studio
306a	3/09/19	Sanctum Studio - Lachlan Plain - Presentation Notes (Submitter 727)	“
307	3/09/19	National Standards for the practice of ecological restoration in Australia SER March 2016	Mr Noy for Friends of Yarra Valley Parklands
307a	“	Friends of Yarra Valley Parks - Bruce Plain - Introductory Notes (submitter 714) - 3 September 2019	Mr Plain for Friends of Yarra Valley Parklands
307b	“	Friends of Yarra Valley Parks - Alan Noy - Presentation (Submitter 714) - 3 September 2019	Mr Noy for Friends of Yarra Valley Parklands
308	3/09/19	Submission of Riverland Conservation Society of Heidelberg Inc (Submitter 82)	Mr Lees for Riverland Conservation Society of Heidelberg Inc

No.	Date	Description	Provided by
309a	3/09/19	Submission of Native Fish Australia (Vic) Inc. (Submitter 149)	Mr Curmi for Native Fish Australia Inc
309b	3/09/19	National recovery plan for the Macquarie Perch, NSW Department of Primary Industries, June 2018	Mr Curmi for Native Fish Australia Inc
309c	3/09/19	Letter from Native Fish Australia to The Hon Lisa Neville, June 2018	Mr Curmi for Native Fish Australia Inc
310	3/09/19	Submission of Mr Hundley (Submitter 677)	Mr Hundley
311a	3/09/19	Letter from 3000acres re Offsetting EES Impacts by establishing a North East Link Sustainability Centre	Ms Pfueller for Sustainable Gardening Australia
311b	3/09/19	Letter from ShareWaste re Offsetting EES Impacts by establishing a North East Link Sustainability Centre	Ms Pfueller for Sustainable Gardening Australia
311c	3/09/19	Letter from Local Food Connect re Offsetting EES Impacts by establishing a North East Link Sustainability Centre	Ms Pfueller for Sustainable Gardening Australia
312a	3/09/19	Yarra Valley Parkland Walkers (Sub 661) - Presentation - 3 September 2019	Horst (Oz) Kayak for Yarra Valley Parkland Walkers
312b	"	Yarra Valley Parkland Walkers (Sub 661) - Speaking Notes - 3 September 2019	"
313	4/09/19	Submission of Yarra Junior Football League (Submitter 595)	Mr De Silva for YJFL
314	4/09/19	Submission of Mr Abakumenko (submitter 523)	Mr Abakumenko
315	4/09/19	Submission of Mr Johnson (submitter 861)	Mr Johnson
316	4/09/19	Submission of Ms Harnan (submitter 694)	Ms Harnan
317a	4/09/19	Submission of Blackburn & District Tree Preservation Society (submitter 619)	Mr Berry
317b	4/09/19	Blackburn & District Tree Preservation Society (submitter 619), PowerPoint presentation	Mr Berry
SV1	4/09/19	Presentation slides	Ms G Jones
SV2	4/09/19	Submission notes	Ms G Jones
SV2a	4/09/19	Koonung Creek – Hays Paddock / Glass creek trail	Ms G Jones
SV3	4/09/19	Presentation slides	Mr P de Bruyn
SV4	4/09/19	Presentation slides	Mr Karroum
SV5	4/09/19	Submission Notes	Ms Ebdon

No.	Date	Description	Provided by
SV6	4/09/19	Confidential speaking notes	Ms Koelmeyer
SV7	4/09/19	Speaking Notes	Ms Z Cassar
SV8	4/09/19	Speaking Notes	Mr J D'Aloia
SV9	4/09/19	Presentation slides	Mr M Ernest
SV10	4/09/19	Speaking Notes	Ms E Telford
SV11	4/09/19	Speaking Notes	Mr W & Ms A Davey
SV 12	4/09/19	Speaking Notes	Dr Deane
SV13	4/09/19	Presentation slides	Dr Deane
SV14	4/09/19	Speaking Notes	Ms G Johnstone
318	5/09/19	Heide MOMA (Submitter 643) - Tim Sligo – Speaking Notes - 3 September 2019	Mr Tim Sligo for Heide MOMA
319a	5/09/19	Trinity Grammar (Submitter 601) Presentation notes	Mr Davidson for Trinity Grammar
319b	5/09/19	Trinity Grammar (Submitter 601) PowerPoint presentation	Mr Davidson for Trinity Grammar
320a	5/09/19	Ms Williamson (Submitter 666), presentation notes	Ms Williamson
320b	5/09/19	Ms Williamson (Submitter 666), PowerPoint presentation	Ms Williamson
321	5/09/19	Whitehorse Ratepayers & Residents Group (Submitter 527) presentation notes	Ms Pakarinen
322a	5/09/19	Victorian Transport Action Group (Submitter 704), presentation notes	Mr Reece for VTAG
322b	5/09/19	Victorian Transport Action Group (Submitter 704), PowerPoint presentation	Mr Reece for VTAG
323a	5/09/19	Mr Reece (Submitter 855), presentation notes	Mr Reece
323b	5/09/19	Mr Reece (Submitter 855), PowerPoint presentation	Mr Reece
324a	5/09/19	Public Transport Users Association (Submitter 792), PowerPoint presentation	Mr Morton for PTUA
324b	5/09/19	Victorian Auditor General's Report, Management of Major Road Projects, June 2011	Mr Morton for PTUA
324c	5/09/19	Victorian Auditor General's Report, Managing Traffic Congestion April 2013	Mr Morton for PTUA
324d	5/09/19	Transport in the Public Interest, Submission on	Mr Morton for PTUA

No.	Date	Description	Provided by
		Victoria's Draft Infrastructure Strategy, PTUA October 2016	
324e	5/09/19	Submission to the Senate Inquiry into the management of toll Roads, PTUA July 2017	Mr Morton for PTUA
325a	5/09/19	Transport for Everyone (T4e) (Submitter 633), presentation notes	Ms McLoughlin
325b	5/09/19	Transport for Everyone (T4e) (Submitter 633), PowerPoint presentation	Ms McLoughlin
326a	5/09/19	Institute of Transportation Engineers Australia and New Zealand (Submitter 24), presentation notes	Mr Szwed
326b	5/09/19	Institute of Transportation Engineers Australia and New Zealand (Submitter 24), PowerPoint presentation	Mr Szwed
326c	5/09/19	Institute of Transportation Engineers Australia and New Zealand (Submitter 24), Supplementary notes on design, speed and cost	Me Szwed
327	5/09/19	Banyule Ratepayers Action Group Presentation Notes	Mr David Mulholland
328	5/09/19	Aircar Industry Newspaper Articles, Letters, Past Submission and Photos	Mr Ross Nolan
SV15	4/09/19	Email from Dr Jim Pouler re Caltex tree - 4 September 2019	Dr Deane
SV16	5/09/19	Speaking Notes	Ms D Haynes
SV17	5/9/19	Speaking Notes	Ms S Willers
SV18	5/9/19	Presentation	Dr Merory
SV19	5/9/19	Speaking Notes	Ms C Morris
SV20	5/09/19	Presentation	Ms C Morris
SV21	5/09/19	Presentation	Mr A MacLeod
SV22	5/09/19	Speaking notes	Mr G French
SV23	5/09/19	Speaking Notes & Melways Plan	Mr Provan
SV24	5/09/19	Presentation	Mr Farrow
SV25	5/09/19	Speaking Notes	Mr Haddy
SV26	5/09/19	Speaking notes	Mr Labuc
SV27	5/09/19	Presentation	Mr Labuc
SV28	5/09/19	Presentation	Ms Johnston

No.	Date	Description	Provided by
SV29	5/09/19	Speaking notes	Ms Rizzetti
SV30	5/09/19	Video - Cheznan Hall (Submitter 725) – Beautiful Banyule Creek - 5 September 2019	Ms Hall
329	6/09/19	NELP – Letter from Mr Barlow re EPR’s, dated 5 September 2019	Clayton Utz for NELP
330	6/09/19	NELP – Technical Note 52, Response to technical issues raised by Mr Smitt dated 6 September 2019	Clayton Utz for NELP
331	6/09/19	NELP – Sustainability objectives and targets July 2019	Clayton Utz for NELP
332a	6/09/19	Watsonia Traders Association (Submitter 490), presentation notes	Mr Richards for Watsonia Traders Association
332b	6/09/19	ODG Watsonia Traders NELP Research, Quantitative & Qualitative Research Report	Mr Richards for Watsonia Traders Association
332c	6/09/19	Design Principles for Opportunities in Watsonia, Ethos Urban, September 2019	Mr Richards for Watsonia Traders Association
332d	6/09/19	Picture Watsonia, A Vision for Watsonia Village, Hello City, 2014	Mr Richards for Watsonia Traders Association
332e	6/09/19	Watsonia Traders Association (Submitter 490), Jeremy Richards Speaking notes	Mr Richards for Watsonia Traders Association
333a	6/09/19	Resolve Rosanna Road (Submitter 134) PowerPoint presentation and presentation notes	Ms Reifschneider for Resolve Rosanna Road
333b	6/09/19	Rosanna Road Accident Report, Attachment 1	Ms Reifschneider for Resolve Rosanna Road
333c	6/09/19	Assisi Centre Locality Accidents, Attachment 2	Ms Reifschneider for Resolve Rosanna Road
333d	6/09/19	2017 Petition to Anthony Carbines, Attachment 3	Ms Reifschneider for Resolve Rosanna Road
333e	6/09/19	Correspondence to Roads Minister, Attachment 4	Ms Reifschneider for

No.	Date	Description	Provided by
			Resolve Rosanna Road
334	6/09/19	Ms Gillies (Submitter 433) presentation	Ms Gillies
335a	6/09/19	Friends of the earth (submitter 258) PowerPoint slide presentation	Ms Lynskey for Friends of the Earth
335b	6/09/19	Friends of the earth (submitter 258) presentation notes	Ms Lynskey for Friends of the Earth
336	6/09/19	Ms Morris PowerPoint presentation	Ms Morris
337	6/09/19	Mr & Mrs Nedanovski (Submitter 498) PowerPoint presentation	Mr Nedanovski
338	6/09/19	Japan Foods Trading (Submitter 318), presentation notes	Ms Takasaka
339	6/09/19	RUANELA – Residents United against Option A (Submitter 480) Presentation slides	Mr Zikou and Mr Dawson for RUANELA
340	6/09/19	John Donohue Auto Repairs (Submitter 283) - presentation notes	Ms Donohue
340a	6/09/19	John Donohue Auto Repairs (Submitter 283) - Family photo	Ms Donohue
340b	6/09/19	John Donohue Auto Repairs (Submitter 283) - Drone footage link	Ms Donohue
341	6/09/19	Mini Maestros (Submitter 281) - presentation notes	Mr Fethers
342	6/09/19	Bulleen Industrial Zone Group Incorporated (Submitter 273) - PowerPoint presentation	Mr Welsh
343a	6/09/19	Australian Institute of Landscape Architects (Victoria) (AILA) (Submitter 549) - presentation notes	Mr Echberg for AILA
343b	6/9/19	Australian Institute of Landscape Architects (Victoria) (AILA) (Submitter 549) - PowerPoint presentation	Mr Echberg for AILA
344	6/09/19	National Trust of Australia (Victoria) (Submitter 340) - presentation	Ms Watson
345a	6/09/19	Kororoit Institute (Submitter 406) - presentation notes	Mr Smith
345b	6/09/19	Kororoit Institute (Submitter 406) - presentation slides	Mr Smith
346	6/09/19	NELP - Response to IAC RFI on 2 September 2019	Clayton Utz for NELP
347	6/09/19	NELP - Technical Note 53, Response to issues raised by Mr McDougall	Clayton Utz for NELP
348	9/09/19	Tabled Presentation NE Link Traffic Modelling (Submitter 408)	Mr Ivan Hexter

No.	Date	Description	Provided by
349	9/09/19	CW3 Final Report to Inquiry and Advisory Committee - Air Emissions and Air Quality - Catherine Wilson – 5 September 2019	Ms Catherine Wilson
350	9/09/19	CB3A Final Report to Inquiry and Advisory Committee - Ground Movement - Craig Barker – 5 September 2019	Mr Craig Baker
351	9/09/19	CB3B Final Report to Inquiry and Advisory Committee - Groundwater - Craig Barker – 5 September 2019	Mr Craig Barker
352	9/09/19	CB3C Final Report to Inquiry and Advisory Committee - Contamination - Craig Barker – 5 September 2019	Mr Craig Barker
353	9/09/19	Letter from MCC and BBW CC to IAC - Craig Czarny Urban Design Memo - 9 September 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council and Ms Sophie Jacobs, Maddocks for Banyule, Boroondara and Whitehorse City Councils
353a	“	Additional Urban Design Information Memo - Craig Czarny - 9 September 2019	“
353b	“	Figure 2 - A powergram for urban design drawn by Peter Boyle - 9 September 2019	“
354	9/09/19	SA3 Final Report to Inquiry and Advisory Committee - Urban Design -Stephen Axford – 9 September 2019	Mr Stephen Axford
355	9/09/19	Joint Letter from MCC and BBW CC to IAC - Council Edits revised Environmental Performance Requirements (EPRs) - 9 September 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council and Ms Sophie Jacobs, Maddocks for Banyule, Boroondara and Whitehorse City Councils
355a	“	NELP - EPRs - revision 1 to 4 with consolidated council edits - 6 Sept 2019	“
356	9/09/19	Mr Rod Barton MLC – speaking notes	Mr Barton
356a	“	Mr Rod Barton MLC – Presentation	“
357a	9/09/19	Planning Institute Australia (PIA) (Submitter 679 & 688), Infrastructure and It’s Funding, Position Statement 16 November 2017	Ms Murray for PIA
357b	9/09/19	PIA, A joint statement on economic infrastructure	Ms Murray for PIA



No.	Date	Description	Provided by
		investment, 2016	
357c	9/09/19	PIA, Healthy Spaces and Places, August 2009	Ms Murray for PIA
357d	9/09/19	PIA, Excerpt from Victorian Cycling Strategy 2018-2028	Ms Murray for PIA
358	9/09/19	Inner Melbourne Planning Alliance (Submitter 723) presentation slides	Mr Smith for IMPA
359a	9/09/19	Town and Country Planning Association Incorporated (TCPA) (Submitter 709), presentation notes	Ms Richards for TCPA
359b	9/09/19	Town and Country Planning Association Incorporated (TCPA) (Submitter 709), presentation slides	Ms Richards for TCPA
360	9/09/19	Melbourne Water (Submitter 800), Presentation slides	Mr Fitzgibbon for Melbourne Water
361	9/09/19	Eram Road Street Community (Submitter (740) represented by Mr La Motte, presentation	Mr La Motte
362	9/09/19	Ms Heron, (Submitter 734) presentation photos and notes	Ms Heron
363	9/09/19	Ms Boyd represented by Mr Evans (Submitter 380), speaking notes	Mr Evans
364	9/09/19	Ethos Urban Watsonia Neighbourhood Centre Concept Plan, 7 May 2019	Clayton Utz for NELP
365	9/09/19	Football Victoria (Submitter 726), presentation	Mr Green for Football Victoria
366a	9/09/19	Bulleen Templestowe District Junior Football Club (Submitter 542), presentation slides	Mr Moore for BTDJFC
366b	9/09/19	Bulleen Templestowe District Junior Football Club (Submitter 542), video	Mr Moore for BTDJFC
367	9/09/19	Yarraleen Cricket Club Inc (Submitter 856), Wisden article, where have all the families gone?	Dr Spizzirri for YCC
368	9/09/19	Marcellin Old Collegians Cricket Club (Submitter 169 and 506), presentation notes	Mr Sakowski for MOCCC
369	9/09/19	Camberwell Golf Club Incorporated (Submitter 245), presentation notes and slides	Mr Atkins for CGC
370	9/09/19	Harp Golf Club Inc (Submitter 295) Harp Golf Club	Ms Voce
371	9/09/19	FC Bulleen Lions Veneto Club (Submitter 686) - Presentation - 9 September 2019	David Del Monaco and Steve Marchesin for the Veneto Club

No.	Date	Description	Provided by
372	9/9/19	BBW CC Letter to IAC - Andrew O'Brien responses - 9 September 2019	Mr Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
372a	"	BBW CC - Andrew O'Brien Response - Technical Note 51 - Response to O'Brien - 9 September 2019	"
372b	"	BBW CC Andrew O'Brien Response - Technical Note 51 - Attachment A - Register of Safety Issues - 9 September 2019.	"
372c	"	BBW CC Andrew O'Brien Response - Technical Note 51 - Attachment B-Andrew O'Brien response to TN41 AOB - 9 September 2019	"
372d	"	BBW CC Andrew O'Brien Memo regarding DoT Aid Memoire - 9 September 2019	"
372e	"	BBW CC Andrew O'Brien Memo regarding Density & LOS on Eastern Freeway - 9 September 2019	"
372f	"	BBW CC Andrew O'Brien Memo regarding Mainline Gradings between Elder St and Nell St - 9 September 2019	"
373	9/9/19	Boroondara City Council Letter to IAC - Closing Submission on BTC and FGC - 9 September 2019	Mr Terry Montebello, Maddocks for Boroondara City Council
373a	"	Boroondara City Council - Closing Submission on Boroondara Tennis Centre and Freeway Golf Course - 9 September 2019	"
374	9/9/19	MCC and BBW CC Letter to IAC - Closing submissions - 9 September 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council and Ms Terry Montebello, Maddocks for Banyule, Boroondara and Whitehorse City Councils
374a	"	MCC and BBW CC - Closing Submissions - 9 September 2019	"
374b	"	MCC and BBW CC - Closing Subs - Attachment 1 - Transcript of Cross-Examination of Michael Barlow - 09	"

No.	Date	Description	Provided by
		09 19	
374c	“	MCC and BBW CC - Closing Subs - Attachment 2 - Transcript of Cross-Examination of John Kiriakidis - 09 09 19	“
374d	“	MCC and BBW CC - Closing Subs - Attachment 3 - Andrew O'Brien Memorandums and cover letter - 09 09 19	“
374e	“	MCC and BBW CC - Closing Subs - Attachment 4 - Maps of land ownership along Eastern Freeway - 09 09 19	“
374f	“	MCC and BBW CC - Closing Subs - Attachment 5 - Letter from Banyule City Council to NELP regarding sporting group relocations - 09 09 19	“
374g	“	MCC and BBW CC - Closing Subs -Attachment 6 - Banyule City Council - Complementary Projects List – 09 09 19	“
374h	“	MCC and BBW CC - Closing Subs- Attachment 7 - Boroondara City Council - Complementary Projects List – 09 09 19	“
374i	“	MCC and BBW CC - Closing Subs - Attachment 8 - Manningham City Council - Complementary Projects List – 09 09 19	“
374j	“	MCC and BBW CC - Closing Subs - Attachment 9 - Whitehorse City Council - Complementary Projects List – 09 09 19	“
375	9/9/19	MCC Letter to IAC - Bulleen Park Precinct Submission - 9 September 2019	Ms Kate Morris, Harwood Andrews for Manningham City Council
375a	“	MCC - Closing submission regarding Bulleen Park precinct - 9 September 2019	“
376	9/9/19	Valentine Gnanakone – Supplementary Expert Witness Report - Traffic and Transport – 9/9/19	Samantha Megenis, Minter Ellison for ALH Group Property Holdings Pty Ltd
377	9/9/19	Carey Baptist Grammar School - Supplementary Submission - 9 Sep 2019	Ms Brenda Wilkinson, Carey Baptist Grammar School
377a	“	Carey Baptist Grammar School - Supplementary Submission - Air Quality Report - 9 Sep 2019	“
377b	“	Carey Baptist Grammar School - Supplementary	“

No.	Date	Description	Provided by
		Submission - Contaminated Land Report - 09 Sep 2019	
377c	“	Carey Baptist Grammar School - Supplementary Submission - Flooding Report - 09 Sep 2019	“
377d	“	Carey Baptist Grammar School - Supplementary Submission - Noise Report - 9 Sep 2019	“
377e	“	Carey Baptist Grammar School - Supplementary Submission -Traffic Report - 9 Sep 2019	“
378a	10/09/19	NELP – Letter from Golf Australia dated 5 September 2019	Clayton Utz for NELP
378b	10/09/19	NELP – Freeway Golf Course – New Facility Option Review Report January 2019	Clayton Utz for NELP
379	10/09/19	Macleod College (Submitter 644), Graphs and maps	Mr Panaccio for Macleod College
380a	10/09/19	Yarra River Keeper Association Inc (Submitter 644), Submission	Dr Lindsay for YRKA Inc
380b	10/09/19	Yarra River Keeper Association Inc (Submitter 644), Appendices	Dr Lindsay for YRKA Inc
380c	10/09/19	Yarra River Keeper Association Inc (Submitter 644), expert witness Prof Bekessy, PowerPoint presentation	Dr Lindsay for YRKA Inc
381	10/09/19	NELP - Map from NatureKit website (DELWP)	Clayton Utz for NELP
382	10/09/19	NELP – Planning Scheme Amendment GC98 April 2019	Clayton Utz for NELP
383	10/09/19	Doncaster Aeromodellers Club (Submitter 464), Supplementary submission	Mr Fice for the DAC
384	10/09/19	Barry Tesse (Submitter 429), Submission and attachments	Mr Scully for Mr Tesse
385	10/09/19	The 3068 Group Inc (Submitter 125), submission	Mr Goodman
386a	10/09/19	Mr Munro (Submitter 275), Presentation notes	Mr Munro
386b	10/09/19	Mr Munro Suggested EPRs	Mr Munro
386c	10/09/19	WHO Noise Guidelines 2009	Mr Munro
386d	10/09/19	WHO Noise Guidelines 2018	Mr Munro
387	10/09/19	Mr Legge (Submitter 136) presentation slides	Mr Legge
388	10/09/19	NELP, Technical Note 54, Cost Estimate, Northern Tunnel Extension	Clayton Utz for NELP
389	10/09/19	NELP, Technical Note 55, SMART Taxpayer design, Feasibility of Possible Future Lower Plenty Road Interchange	Clayton Utz for NELP
390	10/09/19	NELP, Technical Note 56, Yarra Junior Football League	Clayton Utz for NELP

No.	Date	Description	Provided by
		Panel Presentation	
391	10/09/19	NELP Hearing Submission (Submitter 114) - 10 September 2019	Roderick Sinclair for Applewood Retirement Village
392	11/09/19	Pharmacy 4 Less Watsonia (Submitter 586), presentation notes and attachments	Mr Mobarek
393	11/09/19	Holcim Australia Pty Ltd (Submitter 689), presentation notes	Ms White, Corrs Chambers Westgarth for Holcim
394a	11/09/19	Yarra Valley Country Club (Submitter 631), submission	Ms Johns, Minter Ellison for YVCC
394b	11/09/19	Yarra Valley Country Club (Submitter 631), attachments to submission	Ms John, Minter Ellison for YVCC
395	11/09/19	EPA further submission	EPA
396a	11/09/19	ALH Group Property Holdings Pty Ltd (Submitter 270), Submission	Ms Johns, Minter Ellison for ALH
396b	11/09/19	ALH Group, Attachment to submissions	Ms Johns, Minter Ellison for ALH
396c	11/09/19	Valentine Gnanakone - Expert Witness Presentation - Traffic - 11 September 2019	Ms Johns, Minter Ellison for ALH
397	11/09/19	Ms Amanda James (Submitter 736), presentation slides	Ms A James
398a	11/09/19	Ms Giselle James (Submitter 48), presentation notes	Ms G James
398b	11/09/19	Ms Giselle James (Submitter 48), reference list	Ms G James
399	11/09/19	Sustainable Gardening Australia (SGA) (Submitter 396) - Further Submission	Ms Sharron Pfueller
400	12/09/19	Letter from Parks Victoria re 177 Templestowe Road, Lower Templestowe (Hendersons seed farm)	Parks Victoria
401a	12/09/19	Ms George (Submitter 799) Presentation notes	Ms George
401b	12/09/19	Ms George presentation slides	Ms George
401c	12/09/19	Appendix A – Vic Roads Settlement Check (Redacted)	Ms George
401d	12/09/19	Appendix B – NEL FAQ's	Ms George
401e	12/09/19	Appendix C1– C11 - Gmail correspondence	Ms George
401f	12/09/19	Appendix D – Gmail Borlase Street meeting follow up	Ms George
401g	12/09/19	Appendix E – NELP response to Ms George	Ms George
401h		Appendix F – Email response from member of parliament re SMART taxpayer design	Ms George

No.	Date	Description	Provided by
401i		Appendix G – Petition wording	Ms George
401j		Appendix H – NELP soil testing notification of works	Ms George
401k		Appendix I – Letter from The Hon Jacinta Allen to Ms George re SMART taxpayers design	Ms George
402a		Ms Di Fabio (Submitter 636) presentation notes	Ms Di Fabio
402b		Ms Di Fabio presentation slide	Ms Di Fabio
403		Mr Seymour (Submitter 354), photographs	Mr Seymour
404	12/09/19	EES Noise and Air Study Pamphlet - NELP	Ms Giselle James
405	12/09/19	Supplementary Submission Watsonia Traders Association	Mr Jeremy Richards
406a	12/09/19	Mr D’Souza (Submitter 759), presentation notes	Mr D’Souza
406b	12/09/19	Mr D’Souza presentation slides	Mr D’Souza
407	12/09/19	Ms Pilli (Submitter 293), presentation notes	Ms Pilli
408a	12/09/19	Avon Street Residents Committee (Submitter 589), NELP Avon Street Options February 2019	Ms Simonelli for ASRC
408b	12/09/19	Avon Street Residents Committee (Submitter 589), presentation notes of Ms Carroll	Ms Carroll for ASRC
409a	12/09/19	Ms Fabris (Submitter 782 and 805), Excerpt from EES Figure 8-32	Ms Fabris
409b	12/09/19	Ms Fabris, excerpt from Map Book Sheet 21 or 42 construction	Ms Fabris
409c	12/09/19	Ms Fabris, excerpt from Map Book Sheet 21 or 42 operation	Ms Fabris
409d	12/09/19	Ms Fabris, photographs (2)	Ms Fabris
410	12/09/19	Mr Macguire (Submitter 752), presentation slides	Mr Macguire
411	12/09/19	NELP, revised EPR’s and Incorporated	Clayton Utz for NELP
412	12/09/19	Mr Atkin (Submitter 612), slide presentation	Mr Atkin
413	12/09/19	Mr Mason (Submitter 753), slide presentation	Mr Mason
414	12/09/19	Mr Cooper (Submitter 696), speaking notes	Mr Cooper
415a	12/09/19	Heide Research - Impact of Dust and Vibration on artworks caused by construction work - 12 September 2019	Mr Tim Sligo for Heide MOMA
415b	“	Heide - ICOM - Baseline limits for allowable vibrations for objects - 12 September 2019	“

No.	Date	Description	Provided by
416	12/09/19	YVCC (Submitter 631) - Club Closure date - 12 September 2019	Amanda Johns, Minter Ellison for Yarra Valley Country Club
417	12/09/19	Camberwell Golf Club - Response to Freeway Golf Course New Facility Options Review - 12 September 2019	Mr Craig Atkins for Camberwell Golf Club
418a	12/09/19	YJFL - Response to Tabled Document 390 - TD390 - 12 September 2019	Mr Ron Lane, Garland Hawthorn Brahe Lawyers for Yarra Junior Football League
418b	12/09/19	YJFL - Response to NELP Technical Note 56 on Bulleen Park - 12 September 2019	Tim Murray for Yarra Junior Football League
419	13/09/19	BBW CC & MCC - Closing Presentation on NELP	Ms Kate Morris, Maddocks
420	13/09/19	MCC - Supplementary Closing Presentation Slides	Ms Kate Morris, Maddocks
421	13/09/19	Fred Buono - Response to NELP Tech Note 55 - 13 September 2019	Mr Fred Buono
422	13/09/19	Warringal Conservation Society - Comments on EPRs NELP version 5 - 13 September 2019	Dianne Williamson for Warringal Conservation Society
423	13/09/19	Yarra Riverkeeper - Supplementary Submissions - 13 September 2019	Virginia Trescowthick, Environmental Justice Australia for Yarra Riverkeeper Association Inc
424	13/09/19	BBW MCC Incorporated document	Ms Kate Morris, Maddocks
425	13/09/19	Friends of Banyule - Comments on EPR's	Michelle Giovas for Friends of Banyule
426	13/09/19	Ms Andrina Aguiar supplementary submission	Ms Aguiar
427	13/09/19	DoT - Supplementary Submission - Rosanna Road OD1 - 13 September 2019	Victoria Vilagosh for Department of Transport
428	16/09/19	Emily Telford (Submitter 795) - Presentation Addendum - Erskine Road Interchange - 13 Sep 2019	Ms Emily Telford
429	16/09/19	Harp Golf Club Inc (Submitter 295) - Response to	Ms Judith Voce for

No.	Date	Description	Provided by
		Otium Report and Golf Australia letter - 16 Sep 2019	Harp Golf Club Inc
430a	16/09/19	Marcellin College (Submitter 718) - Final Position - 15 09 2019	Ms Juliet Forsyth for Marcellin College
430b	"	Marcellin College (Submitter 718) Final Position Attachments – without prejudice tracked incorporated document and tracked ERPs - 15 09 2019	"
431	16/09/19	ALH and Manningham Club - Submissions on EPRs and Incorporated Document - 16 Sep 2019	Amanda Johns, Minter Ellison for ALH Property Group
432	16/09/19	NELP – Technical Note 57, Sport and recreation September 2019 relocation update	Clayton Utz for NELP
433	16/09/19	NELP – Questions from the IAC during EPR discussion Friday 13 September 2019	Clayton Utz for NELP
434	16/09/19	NELP – Closing submission	Clayton Utz for NELP
435	16/09/19	EPA (Submitter 600) - Submissions on Plans to the satisfaction and EPR Comments - 16 Sep 2019	Hannah McGuigan for EPA
436	16/09/19	YJFL - Submission regarding Parks Victoria letter - 16 September 2019	Tim Murray for Yarra Junior Football League
437	16/09/19	BBW – Response to Technical Notes and other documents tabled since conclusion of council's evidence	Maddocks for BBW
438a	16/09/19	Melbourne Water - Letter to IAC regarding priority list of offsets - 16 September 2019	Stephen Woods for Melbourne Water
438b	16/09/19	Melbourne Water - Healthy Waterways Strategy - opportunities (high level) - 16 September 2019	"
439a	16/09/19	Melbourne Water - Letter to IAC regarding EPRs - 16 September 2019	"
439b	16/09/19	Melbourne Water - Comments on EPRs NELP Version 5 - 16 September 2019	"
440	16/09/19	BRAG – North East Link Alternative Design	David Mulholland for BRAG



# **Appendix F: IAC Recommended Incorporated Document**



# Draft North East Link Project Incorporated Document October 2019

IAC Note: The base document for the IAC recommended changes is Hearing Document 411, Tab 5. The NELP track changes in that document were accepted prior to IAC drafting.

IAC additions are marked in blue.

IAC deletions are marked in ~~red-strikethrough~~.

Formatting changes and updated cross references are not marked.

## 1. INTRODUCTION

- 1.1. This document is an incorporated document in the Banyule, Boroondara, Manningham, Nillumbik, Whitehorse, Whittlesea and Yarra Planning Schemes (**Planning Schemes**) and is made pursuant to section 6(2)(j) of the *Planning and Environment Act 1987*.
- 1.2. This incorporated document facilitates the delivery of the North East Link Project (Project).
- 1.3. The control in clause 4 prevails over any contrary or inconsistent provision in the Planning Schemes.

## 2. PURPOSE

- 2.1. The purpose of the control in clause 4 is to permit and facilitate the use and development of the land described in clause 3 for the purposes of the Project, in accordance with the requirements specified in clause 4.

## 3. LAND

- 3.1. The control contained in clause 4 applies to land affected by Specific Controls Overlay – Schedule 1 North East Link Project Area Land (**SCO1**) and Schedule 2 North East Link Replacement Public Open Space and Facilities Land (**SCO2**) ~~X-(SCOX)~~ as shown on planning scheme maps in the Banyule, Boroondara, Manningham, Nillumbik, Whitehorse, Whittlesea and Yarra Planning Schemes (**together SCO1 and SCO2 are the Project Land**).

## 4. CONTROL

### Exemption from Planning Scheme requirements

- 4.1. Despite any provision to the contrary, or any inconsistent provision in the Planning Schemes, no planning permit is required for, and no provision in the Planning Schemes operates to prohibit, restrict or regulate the use or development of the Project Land for the purposes of, or related to, constructing, maintaining or operating the Project (subject to the provisions of clause 4.3 in respect of land within SCO2).
- 4.2. The use and development of the Project Land for the purposes of, or related to, the Project includes, but is not limited to:
  - (a) A freeway standard road connecting the Metropolitan Ring Road (M80) to the Eastern Freeway;
  - (b) Twin road tunnels and associated infrastructure, including ventilation structure;
  - (c) Improvements to and widening of the Western Ring Road and the Eastern Freeway to provide for additional lanes in each direction
  - (d) Elevated roads and road infrastructure, including gantries
  - (e) Interchanges and grade separations associated with road connections
  - (f) A dedicated busway in each direction along the Eastern Freeway together with associated infrastructure,
  - (g) A control centre and freeway maintenance facility,
  - (h) Utility installation, relocation and associated services including relocation of electricity transmission towers, telecommunication towers, lines, cables and associated substations relocation of water mains, water stations and sewers
  - (i) Construction and relocation of rail infrastructure and associated services
  - (j) Construction of at-grade or multi-level car parking facilities
  - (k) Earthworks and related structures, kerbs, channels, water and soil transfer and treatment structures, facilities and works, water quality facilities, retaining walls, noise walls and screening barriers, cuttings, batters and fill associated with the Project

- (l) Any buildings or works or associated infrastructure or activities for the Project
- (m) Ancillary activities to the use and development of Project Land for the purposes of, or related to, the Project, including, but not limited to:
  - (i) Developing and using lay down areas for construction purposes
  - (ii) Constructing and using temporary site workshops and storage, administration and amenities buildings
  - (iii) Removing, destroying and lopping trees and vegetation, including native vegetation and dead vegetation
  - (iv) Demolishing and removing buildings, fixtures, structures and infrastructure
  - (v) Restoration and reinstatement work
  - (vi) Developing and using land for walking and cycling infrastructure and facilities, including shared use paths, pedestrian and cycling overpasses and bridges
  - (vii) Constructing or carrying out works for bridges, ramps, excavation, fences, temporary barriers, noise attenuation walls, stabilisation, creating bunds, mounds, landscaping, the salvage of artefacts, water treatment, water storage, flood mitigation and to alter drainage
  - (viii) Creating or altering access to a road in a Road Zone, Category 1
  - (ix) Creating or altering access to land in a Public Acquisition Overlay if the purpose of acquisition is for a Category 1 road
  - (x) Storage and assembly of materials and equipment required for the Project
  - (xi) Constructing and carrying out works to install, alter or relocate, drainage infrastructure, utility installations and services
  - (xii) Roadworks and constructing and using temporary access roads, diversion roads and vehicle parking areas
  - (xiii) Displaying construction, directional and business identification signs
  - (xiv) Stockpiling of excavation material
  - (xv) Subdividing and consolidating land in accordance with plan/s approved by the Minister for Planning.
  - (xvi) The provision of new or upgraded public open space or sporting and recreation facilities including the construction of associated buildings and related infrastructure.

4.3. Land included within SCO2 for the purpose of providing new or upgraded public open space or sporting and recreation facilities including the construction of associated buildings and related infrastructure:

- 4.3.1. must not be used or developed for any other purpose except with a planning permit where required under the relevant planning scheme.
- 4.3.2. does not require any planning permission for the provision of new or upgraded open space or sporting and recreation facilities including the construction of associated buildings and related infrastructure provided that buildings and works meet all of the following requirements:
  - (a) do not exceed a height of 9 metres;
  - (b) are set back a minimum of 20 metres from property boundaries and 100 metres from the Yarra River
  - (c) use exterior finishes that are non-reflective with colours and finishes to blend with the natural landscape character of the area
  - (d) do not overshadow land within 200 metres either side of the Yarra River

- (e) measures are adopted (if required) to maintain the free passage of floodwaters and minimise flood damage, be compatible with flood hazard and the buildings and works will not cause any significant rise in flood level or flow velocity
- (f) consultation has occurred to obtain and consider the views of the relevant municipal council, land manager (if applicable) and Melbourne Water in respect of detailed plans for all proposed buildings and works.

4.4. If the conditions in clause 4.3 are not met, the underlying zone and overlay provisions will apply to the development of such land.

### **Tunnel Land**

4.5. Except where necessary to provide for infrastructure associated with minor utility installations, all buildings and works within the area shown as 'Tunnel' on the attached plan titled ~~itled~~ "Appendix 1 - Tunnel Plan" (Tunnel Plan) must be carried out at a depth greater than 15 metres below surface level.

### **Conditions**

4.6. The use and development permitted by this incorporated document is subject to the following conditions. In these conditions, reference to 'a stage' includes any stage or part of the Project, whether for construction or operation or both.

#### **4.7. Environmental Management Framework**

4.7.1. Prior to the commencement of development (excluding preparatory buildings and works under clause 4.9), an Environmental Management Framework (**EMF**) must be prepared to the satisfaction of the Minister for Planning and approved. The EMF must include Environmental Performance Requirements (**EPRs**) addressing the following areas and any other relevant matters:

- (a) Aboriginal cultural heritage;
- (b) Air quality;
- (c) Arboriculture;
- (d) Business;
- (e) Contaminated land and spoil management;
- (f) Environmental management;
- (g) Flora and fauna;
- (h) Ground movement;
- (i) Groundwater;
- (j) Historic heritage;
- (k) Land use planning;
- (l) Landscape and visual;
- (m) Noise and vibration;
- (n) Social and community;
- (o) Surface water;
- (p) Sustainability and climate change;
- (q) Traffic and transport: and
- (r) Tunnel vibration.

4.7.2. The EMF must:

- (a) set out the process and timing for development of a Construction Environmental Management Plan, Site Environmental Implementation Plan, [Construction Compound Management Plan](#), Operations Environmental Management Plan and other plans and procedures required by the EPRs as relevant to any stage of the Project, including the process and timing for consultation with relevant councils, [the Department of Transport](#), Heritage Victoria, ~~the Roads Corporation~~, Melbourne Water, [the Department of Environment, Land, Water and Planning](#), [Parks Victoria](#), ~~Public Transport Development Authority~~, and the Environment Protection Authority ~~and the Head, Transport for Victoria~~, as relevant; and
- (b) be accompanied by a statement explaining any difference between it (including the EPRs), and the matters set out in the Minister's Assessment dated [insert date] made pursuant to the EE Act.

4.7.3. The EMF may be prepared and approved in stages (including separately for construction and operation) but the EMF for any stage must be approved before the commencement of development (excluding preparatory buildings and works under clause 4.14) for that stage.

4.7.4. The EMF may be amended from time to time, to the satisfaction of the Minister for Planning. [An application for approval of an amendment to the EMF must be accompanied by:](#)

- (a) [A 'track changes' version with a schedule explaining the proposed amendments and how they would be consistent with Project objectives.](#)
- (b) [A description of the form and extent of any consultation undertaken concerning the proposed amendment/s with relevant municipal councils, relevant government agencies and other relevant stakeholders including community groups, business associations, sporting clubs and educational institutions.](#)
- (c) [any written comments from relevant councils, relevant government agencies and other relevant stakeholders including community groups, business associations, sporting clubs and educational institutions.](#)

4.7.5. The EMF must be amended to update references and requirements to be consistent with the *Environment Protection (Amendment) Act 2018* to the satisfaction of the Minister for Planning. The amended EMF must be prepared in consultation with the Environment Protection Authority and must be submitted to the Minister for Planning for approval within ~~12~~ 6 months of the commencement of the *Environment Protection (Amendment) Act 2018*.

4.7.6. The use and development of the Project must be carried out in accordance with the approved EMF ~~(including the EPRs and all plans and procedures required by the EPRs)~~ them.

#### 4.8. [Review of the extent of SCO](#)

4.8.1. [Within 6 months of the approval of the EMF, a review of the extent of land affected by the SCO must be undertaken and a report prepared for the Minister for Planning which identifies land which is not required for the purpose of the Project and which may be removed from the SCO.](#)

#### 4.9. [Urban Design Advisory Panel](#)

4.9.1. [Upon approval of this control, an Urban Design Advisory Panel \(UDAP\) must be established. The membership of the UDAP must include representatives of the following organisations:](#)

- (a) The Office of the Victorian Government Architect
- (b) The Department of Transport
- (c) The Proponent
- (d) The Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation
- (e) Each municipal council within the Project Area
- (f) Melbourne Water and/or land managers.

#### 4.10. **Urban Design Strategy**

- 4.10.1. Prior to commencement of development (excluding preparatory buildings and works under clause 4.14), an Urban Design Strategy (**UDS**) must be prepared to the satisfaction of the Minister for Planning.
- 4.10.2. The UDS must be generally in accordance with the version exhibited with the Environment Effects Statement dated April 2019 and must include:
  - (a) An urban design vision;
  - (b) Urban design principles and objectives;
  - (c) Location-specific design directions or themes, including design guidelines.
  - (d) Modifications to the exhibited version including:
    - i. An outline of, and response to, relevant principles from the *Yarra River Protection (Willip-gin Birrarung Murrong) Act 2017*, the Cultural Values assessment report prepared by the Wurundjeri Woi-wurrung Aboriginal Heritage Corporation and the Yarra Strategic Plan (when released).
    - ii. Consideration of the setting and requirements of schools along the Project alignment and surrounds and detailed direction to achieve acceptable urban design interfaces.
    - iii. Reconsideration of which elements of the Place-specific Requirements should be converted from complementary (and optional) to mandatory. At a minimum, these should include all elements that are integral to ensuring the Project achieves relevant strategic objectives, including the Manningham Interchange, biodiversity and habitat links along the Yarra River corridor and opportunities for Water Sensitive Urban Design elements around the Yarra Valley Parklands.
- 4.10.3. The UDS must be accompanied with a statement explaining any differences between it and the exhibited draft North East Link Urban Design Strategy April 2019 and must address all ~~and~~ relevant matters set out in the Minister's Assessment dated [insert date] under the *Environment Effects Act 1978*.
- 4.10.4. The UDS may be prepared and approved in stages but the UDS for any stage must be approved before the commencement of development (excluding preparatory buildings and works under clause 4.14) for that stage.
- 4.10.5. The UDS may be amended from time to time, to the satisfaction of the Minister for Planning. Any request to amend the UDS must be accompanied with supporting documentation which outlines the result of UDAP's consideration of the proposed changes.
- 4.10.6. The use and development of the Project must be carried out in accordance with the approved UDS.

#### 4.11. **Urban Design Framework Plans**

- 4.11.1. Prior to the commencement of permanent above-ground buildings or structures (excluding preparatory buildings and works under clause 4.14) in the following



locations, an Urban Design Framework Plan (or adequate equivalent having regard to the nature of land uses and development) must be prepared and approved by the Minister for Planning for:

- (a) M80/Greensborough Highway Interchange.
- (b) Watsonia Neighbourhood Centre and its surrounds.
- (c) Borlase Reserve and Lower Plenty Road Interchange.
- (d) Manningham/Bulleen Road Interchange.
- (e) Bulleen Road/Eastern Freeway Interchange.

4.11.2. The UDFP must provide an outline of options for use and development of land within the plan having regard to strategic planning opportunities and constraints and its interaction with structures, works and facilities proposed by the Project. It must include (as relevant):

- (a) a set of design and development principles including all relevant elements from the UDS pertaining to the particular location;
- (b) a framework plan to identify key action areas and important relationships including a layout of all active and passive movement networks to facilitate acceptable connectivity for pedestrians and vehicles, interactions with public facilities and infrastructure and the location and nature of public open space;
- (c) visualisations of key design concepts;
- (d) action plans and an implementation strategy for the Project including key components proposed to be developed by the Project and identifying opportunities for development or upgrades by others.

4.11.3. Prior to the submission of an UDFP to the Minister for Planning for approval, the UDFP must be:

- (a) Provided to the Urban Design Advisory Panel, relevant council/s, the Department of Transport, Melbourne Water, Heritage Victoria and the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation for consultation and comment.
- (b) Made available for public inspection and comment on a clearly identifiable Project website. The minimum period for public inspection and comment on the UDFP must be 21 days.

For the avoidance of doubt, consultation in accordance with (a) can occur prior to, during and after the public inspection and comment period in (b).

- (c) Notified by publication in a newspaper generally circulating in the area to which an UDFP applies, informing the community how it may inspect and may comment on the UDFP.

4.11.4. Copies of all comments referred to in response to clause 4.11.3 must accompany a request for approval of a UDFP to the Minister for Planning.

#### **4.12. Urban Design and Landscape Plans**

4.12.1. Prior to the commencement of development of permanent above-ground buildings or structures (excluding preparatory buildings and works under clause 4.14), Urban Design and Landscape Plans (UDLP) must be prepared to the satisfaction of the Minister for Planning.

4.12.2. The UDLPs must show the final built form design for the Project and include where relevant:

- (e) A site layout plan that shows the location of permanent above-ground building and structures (including but not limited to proposed bridges, elevated roads tunnel portals, ventilation structures, flood walls, noise walls, public transport infrastructure, and walking and cycling facilities);
  - (f) Architectural plans, including sections and elevations, with materials and finishes;
  - (g) Landscape plans, including sections and elevations, with plant species.
- 4.12.3. An UDLP must be accompanied by the following, where relevant:
- (a) An explanation demonstrating how the UDLP is in accordance with the approved UDS [and responds to any relevant UDFP or equivalent under clause 4.11.1 \(where applicable\)](#).
  - (b) An explanation demonstrating how the UDLP ~~is consistent~~ [would comply](#) with the approved EPRs included in the EMF.
  - (c) A plan which shows the extent of the UDLP area in relation to any publicly available or approved UDLP(s).
  - (d) A plan which shows the boundary of the Project Land and location of areas to be used for construction compounds [consistent with the approved Construction Compound Plan in 4.15](#).
- 4.12.4. Prior to the submission of an UDLP to the Minister for Planning for approval, an UDLP must be:
- (a) Provided to the Urban Design Advisory Panel and relevant council/s for consultation.
  - (b) Provided to the [Department of Transport](#) ~~Roads Corporation, Public Transport Development Authority~~, Melbourne Water, Heritage Victoria, the [Department of Environment, Land, Water and Planning, and Parks Victoria](#) ~~and the Head, Transport for Victoria~~ for consultation where relevant.
  - (c) Made available for public inspection and comment on a clearly identifiable Project website ~~for 15 business days~~. The website must set out details about the entity and contact details to which written comments can be directed during that time and specify the time and manner for the making of written comments. [The minimum period for public comment must be 21 days.](#)  
  
[For the avoidance of doubt, consultation in accordance with \(a\) and \(b\) can occur prior to, during and after the public inspection and comment period in \(c\).](#)
- 4.12.5. Before, or on the same day as an UDLP is made available in accordance with clause 4.12.4(c) a notice must be:
- (a) published in a newspaper generally circulating in the area to which an UDLP applies informing the community of the matters set out in clause 4.12.4(c).
  - (b) [provided to owners and occupiers adjacent to the area/s to which the UDLP applies. The minimum period for comment must be 21 days.](#)
- 4.12.6. An UDLP submitted to the Minister for Planning for approval under clause 4.12.1 must be accompanied by a summary of the consultation carried out under clause 4.12.4 and 4.12.5 and all written comments received and a response to issues raised.
- 4.12.7. An UDLP may be prepared and approved in stages but a UDLP for any stage must be approved before the commencement of development (excluding any or all preparatory buildings and works under clause 4.14) for that stage.
- 4.12.8. An UDLP may be amended from time to time, to the satisfaction of the Minister for Planning. The Minister must require an application for approval of an amendment to

a UDLP to comply with the requirements of clauses 4.12.3, 4.12.4 and 4.12.5 unless, in the opinion of the Minister the proposed amendment:

- (a) would not result in a material detriment to any person; or a person who may suffer a material detriment as a result of the Minister's approval of the amendment has already been consulted in respect of the proposed amendment; and
- (b) any proposed amendment does not involve any change to an approved Environmental Performance Requirement.

4.12.9. The use and development for the Project must be carried out generally in accordance with the approved UDLPs.

#### 4.13. **Native vegetation**

4.13.1. Native vegetation offsets for the removal of native vegetation to construct the Project must be provided in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) [before Project works commence](#), except as otherwise agreed by the Secretary to the Department of Environment Land, Water and Planning.

#### 4.14. **Preparatory buildings and works**

4.14.1. The following buildings and works may commence before approval of the documents under clauses ~~4.5 to 4.7~~ [required by this document or the Environmental Performance Requirements](#).

(a) Preparatory buildings and works for the Project, ~~including, but not~~ limited to:

- i. Works, including vegetation removal, where, but for this incorporated document, a planning permit would not be required under the provisions of the Planning Schemes.
- ii. Investigating, testing and preparatory works to determine the suitability of land, and property condition surveys.

~~iii. Creation of construction access points and working platforms.~~

~~iv. Site establishment works, including temporary site fencing and hoarding, site offices, hardstands and laydown areas.~~

~~v. Establishing temporary car parking sites.~~

~~vi. Temporary relocation of walking and bicycle pathways and trails.~~

vii. Construction, protection, modification, removal or relocation of electricity transmission towers on land that forms part of an existing electricity transmission easement area, minor utility installations, rail signalling, and overhead and associated infrastructure.

viii. Establishment of environment and traffic controls.

ix. Demolition to the minimum extent necessary to enable preparatory works.

x. Salvaging and relocating of artefacts and other preparatory works required to be undertaken in accordance with the approved Cultural Heritage Management Plan (CHMP) prepared for the project under the *Aboriginal Heritage Act 2006*.

~~xi. Salvaging Matted Flax-lily (*Dianella amoena*) and other preparatory works required to translocate Matted Flax-lily (*Dianella amoena*) in accordance with a Translocation Plan approved for the Project under the *Environment Protection and Biodiversity Conservation Act 1999*.~~

- (b) The removal, destruction or lopping of native vegetation to the minimum extent necessary to enable preparatory works, to the satisfaction of the Minister for Planning. Any native vegetation removed to enable preparatory works forms part of the total extent of native vegetation removal necessary for the construction of the project and native vegetation offsets must be provided in accordance with clause 4.8, except as otherwise agreed by the Secretary to DELWP.

#### 4.15. **Construction Compound Plan**

- 4.15.1. Prior to the development and use of any construction compound, a Construction Compound Plan (CCP) must be submitted to and approved by the Minister for Planning.
- 4.15.2. The CCP may be submitted and approved in stages or amended by the Minister for Planning. The plan must include:
  - (a) A plan showing the location of the compounds and the categories of works proposed within those compounds.
  - (b) The estimated duration of activity within each compound.
  - (c) Demonstration that any compounds proposed on land which is not to be permanently acquired are reasonably required in the location in which they are proposed, including demonstration that alternatives which reduce the impact of the compounds on such land are not feasible or practical.
  - (d) Demonstration that the compounds (and categories of permissible works within each compound) have been sited to avoid, then minimise, then mitigate, impacts on sensitive uses (including residences, open space, schools, community organisations and sporting and recreation areas).
  - (e) Demonstration that the categories of works proposed within the compounds are appropriate having regard to whether the land is flood prone or has any particular environmental sensitivity.
  - (f) measures to restore the former use of the land used for construction once these activities are complete.
- 4.15.3. All construction compounds for the Project must be located and operated in accordance with the CCP and relevant EPRs.

#### 4.16. **Availability of approved plans and documents**

- 4.16.1. The current version of the following plans and documents must be available on a clearly identifiable project website ~~during construction of the project and~~ from the date of approval and must remain available on such website for at least five years after the commencement of operation of the Project:
  - (a) Environmental Management Framework approved under clause 4.7.1;
  - (b) Urban Design Strategy approved under clause 4.9.1;
  - (c) Urban Design Framework Plans or adequate equivalent approved under clause 4.10.1;
  - (d) Urban Design and Landscape Plans approved under clause 4.7;
  - (e) Construction Compound Plan approved under clause 4.14.1; and
  - (f) Communications and Community Engagement Plan.

## **5. EXPIRY**

5.1. The control in this document expires if any of the following circumstances apply:

- (a) The development allowed by the control is not started by 31 December 2021.
- (b) The development allowed by the control is not completed by 31 December 2030.
- (c) The use allowed by the control is not started by 1 January 2031.



# **Appendix G: IAC Recommended Environmental Performance Requirements**





Table-1 Recommended environmental performance requirements – IAC Version ~~version 5~~ (Clean version)

Applicable Legislation and Policy	EPR Code	Environmental Performance Requirement	Phase
<b>1. Environmental Management (EMF)</b>			
Australian Standard AS/NZS ISO 14001:2015 Environmental management systems – requirements with guidance for use  EPA Victoria Publication 480, Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites (EPA Victoria 1996)	EMF1	<b>Deliver project in general accordance with an Environmental Management System</b> Develop, implement and maintain an Environmental Management System (EMS) that conforms to Australian Standard AS/NZS ISO 14001:2015 Environmental Management Systems – requirements with guidance for use through design, construction and operation of North East Link.	All
	EMF2	<b>Deliver project in accordance with an Environmental Strategy and Management Plans</b> Prepare and implement an Environmental Strategy, Construction Environmental Management Plan (CEMP), Worksite Environmental Management Plans (WEMPs), <b>Construction Compound Management Plan (CCMP)</b> , Operation Environmental Management Plan (OEMP) (operator only) and other plans as required by the Environmental Performance Requirements (EPRs) and in accordance with the Environmental Management Framework (EMF). The Environmental Strategy, CEMP, <b>CCMP</b> , WEMPs and OEMP must be developed in consultation with relevant stakeholders as listed in the EMF and as required by NELP or under any statutory approvals. The CEMP must be prepared with reference to <b>best practice and</b> EPA Victoria Publication 480 Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites.	All
	EMF3	<b>Audit and report on environmental compliance</b> Appoint an Independent Environmental Auditor (IEA) to: <ul style="list-style-type: none"> <li>Review the Environmental Strategy, CEMP, <b>CCMP</b>, WEMPs, OEMP and other plans required by the EPRs for compliance with the EMF and the EPRs</li> <li>Undertake environmental audits of compliance with and implementation of the EPRs and the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs.</li> </ul> <b>The IEA must include persons with expertise, based on qualifications and experience, appropriate to allow the roles specified for the IEA in the EMF to be properly carried out, including statutory environmental auditors when necessary.</b> Audits must occur during construction and for <b>five</b> years after opening of North East Link, or as otherwise agreed with the Minister for Planning. A six monthly summary report must be provided to the Minister for Planning that summarises the findings of audits carried out during the reporting period. A close-out report must be provided to the Minister for Planning at the conclusion of the auditing and reporting period. The summary reports must be made publicly available on a project website for the period of construction and <b>a minimum of five</b> years after opening of North East Link.	Design, Construction, operation
	EMF4 NEW	<b>Complaints Management System</b> Prior to the commencement of works a process for recording, managing, and resolving complaints received from affected stakeholders must be developed and implemented. The complaints management arrangements must be consistent with Australian Standard AS/NZS 100002: 2014 Guidelines for Complaints Management in Organisations. <b>The complaints management system must be consistent with the Communications and Community Engagement Plan required under EPR SC2.</b>	Construction, operation
<b>2. Aboriginal Heritage (AH)</b>			
Aboriginal Heritage Act 2006 Aboriginal Heritage Regulations 2007	AH1	<b>Comply with the Cultural Heritage Management Plan</b> Implement and comply with the Cultural Heritage Management Plan (CHMP) approved under the <i>Aboriginal Heritage Act 2006</i> .	Design, construction
<b>3. Air Quality (AQ)</b>			
Environment Protection Act 1970 Environment Protection (Scheduled Premises) Regulations 2017 State Environment Protection Policy (SEPP) – Ambient Air Quality State Environment Protection Policy (SEPP) – Air Quality Management (AQM)  EPA Victoria Publication 480, Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites (EPA 1996)	AQ1	<b>Implement a Dust and Air Quality Management and Monitoring Plan to minimise air quality impacts during construction</b> Prepare and implement a Dust and Air Quality Management and Monitoring Plan(s), in consultation with EPA, which sets out best practice measures and controls to minimise and monitor impacts on air quality during construction. The plan(s) must: <ul style="list-style-type: none"> <li>Set out how the project will monitor and control the emission of smoke, dust, fumes, odour and other pollution into the atmosphere during construction using best practice measures with reference to EPA Victoria Publication 480 Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites. <del>and in accordance with the State Environment Protection Policy (Air Quality Management)</del></li> <li>Identify the main sources of dust and airborne pollutants, and the location of sensitive land uses relevant to each construction area</li> <li>Describe the monitoring requirements for each construction areas, including particulate matter monitoring where deemed to be required, and with reference to sensitive receptors and utilising consistent and common monitoring across the project.</li> <li>Describe the air quality triggers for investigation, the mitigation measures, and the processes for implementing appropriate controls</li> </ul>	Construction
	AQNEW	<b>Construction Vehicle Fleet</b> <b>The construction vehicle fleet (heavy vehicles) for all contractors and sub-contractors must comply at a minimum with the Euro V European emission standards.</b>	
	AQ2	<b>Design tunnel ventilation system to meet EPA requirements for air quality</b> Design, construct and operate the permanent tunnel ventilation system to meet the requirements of the State Environment Protection Policy (Air Quality Management) and in accordance with the requirements of the EPA Victoria Works Approval and the EPA Victoria Licence. <b>The design should include provision for retrofitting of tunnel ventilation pollution control equipment if subsequently required.</b>	Design, construction, operation
	AQ3	<b>In-tunnel air quality performance standards</b> Design, construct and operate a tunnel ventilation system to introduce and remove air from the tunnels to meet the in tunnel air quality requirements for carbon monoxide (CO) and for NO2 listed below and in accordance with the EPA Victoria Works Approval and EPA Victoria licence. In tunnel air quality must meet the following CO standards:	Design, construction, operation

		<p>Maximum peak CO value of 150 ppm                      15 minute average CO value of 50 ppm                      2-hour average CO value of 25 ppm.</p> <p>The tunnel ventilation system must also be designed and operated so that the tunnel average nitrogen dioxide (NO<sub>2</sub>) concentration is less than 0.5 ppm as a rolling 15 minute average.</p> <p>Develop and implement contingency measures to manage in-tunnel air quality in the event of incidents or emergencies.</p> <p>Apply best practice Australian management techniques to minimise impacts on health from in-tunnel exposure to PM<sub>2.5</sub> and PM<sub>10</sub>.</p>	
	AQ4	<p><b>Monitor ambient air quality</b></p> <p>Develop and undertake an ambient air quality monitoring program in consultation with EPA Victoria to measure the air quality impacts of North East Link during construction and operation. The ambient air quality monitoring program must be undertaken at a minimum of six locations (including a site where the highest increases of air pollution are predicted to occur), unless otherwise agreed by EPA Victoria; include at least one year of monitoring before operation; continue for 5 years after commencement of North East Link operation; and, for the ventilation structures, be in accordance with the EPA Victoria licence. <b>Monitoring results must be assessed against the Environmental Quality Objectives of the State Environment Protection Policy (Ambient Air Quality)</b>. Results of the monitoring program are to be made publicly available on a website related to the project, or through EPA Victoria’s Air Watch website, on a <b>monthly daily</b> basis.</p>	Construction, operation
	AQ5	<p><b>Monitor compliance of in-tunnel air quality and ventilation structure emissions</b></p> <p>Monitor the in-tunnel air quality and ventilation structure emissions during operation of the ventilation system to demonstrate compliance with EPR AQ2, EPR AQ3 and the EPA Victoria licence to the satisfaction of EPA Victoria. Report the monitoring results publicly after validation and in accordance with the EPA Victoria licence.</p> <p>If standards outlined in EPR AQ2, EPR AQ3 and the EPA Victoria licence are not met, report to EPA Victoria, investigate the cause of the exceedance, and take remedial action as appropriate to the satisfaction of EPA Victoria.</p>	Operation
<b>4. Arboriculture (AR)</b>			
<p><i>Planning and Environment Act 1987</i></p> <p>AS4970-2009 Protection of Trees on Development Sites</p> <p>Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017</p>	AR1	<p><b>Develop and implement a Tree Removal Plan</b></p> <p>Develop and implement a Tree Removal Plan, as part of the CEMP, that identifies all trees within the project boundary and includes:</p> <ul style="list-style-type: none"> <li>• Trees to be removed or retained as part of the works</li> <li>• Confirmation of the condition and arboricultural value of the amenity trees to be removed</li> <li>• The canopy area of all trees to be removed</li> <li>• The procedure for tree removal that addresses the requirements of EPR FF1, EPR FF2 and EPR FF5.</li> </ul> <p>Tree retention must be maximised to the extent practicable through detailed design and selection of construction methods to minimise canopy loss, and in accordance with EPR FF1, including by retaining trees where practicable and minimising potential impacts to trees. <b>This includes the River Red Gum (Caltex Tree) at 39 Bridge Street, Bulleen.</b></p> <p>Arboricultural assessments are to verify existing details and inform the detailed design, Tree Removal Plan and Tree Canopy Replacement Plan (required by EPR AR3) in order to maximise tree retention and long-term viability of amenity plantings in accordance with Australian Standard AS4970:2009 Protection of Trees on Development Sites.</p> <p>The Tree Removal Plan must be informed by a pre-construction site assessment to confirm the area and number of trees and other vegetation proposed to be impacted. Trees to be retained must be protected in accordance with EPR AR2. Vegetation removal is to occur in a staged manner with removal only occurring once necessary for the current stage of works.</p> <p>The area and number of trees and other vegetation actually removed is to be confirmed through a post-construction assessment.</p>	Design, construction
	AR2	<p><b>Implement a Tree Protection Plan(s) to protect trees to be retained</b></p> <p>The CEMP must include a Tree Protection Plan(s), which is to be developed and implemented in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites. The Tree Protection Plan(s) must provide details of any tree protection actions that will ensure that trees proposed to be retained are adequately protected from the impact of construction or related activities, prior to those works being undertaken.</p> <p>Tree Protection Plans must be prepared based on detailed construction drawings and surveyed tree locations.</p> <p>Trees subject to protection must be monitored for a <b>three two</b>-year period following completion of construction works in that location to assess ongoing viability, with maintenance or replacement of stressed or damaged specimens to be undertaken.</p>	Design, construction, operation
	AR3	<p><b>Implement a Tree Canopy Replacement Plan</b></p> <p>Develop and implement a Tree Canopy Replacement Plan to replace the canopy of native vegetation and amenity plantings removed as a result of the project and achieve a net gain in tree canopy cover by 2045. The plan must:</p> <ul style="list-style-type: none"> <li>• Show the location, size (including canopy spread) and species of replacement trees, in consultation with councils and other relevant land managers</li> <li>• Specify requirements to support the long-term viability of all replacement plantings including appropriate soil requirements, establishment works and ongoing maintenance.</li> <li>• <b>Maintain at least Adopt</b> a ratio of 2:1 for replacement of amenity plantings</li> <li>• <b>Replanting should generally follow the hierarchy of:</b> <ol style="list-style-type: none"> <li>1. Within the North East Link Project boundary - as first priority, in locations in close proximity to where trees are removed</li> <li>2. Outside the Project boundary and within 400m walking catchment from where trees are removed</li> <li>3. Within Victorian Government and local Council land within the municipalities of Manningham, Boroondara, Nillumbik, Yarra, Whitehorse and Banyule outside the Project boundary</li> <li>4. Within the wider north east area outside the Project boundary, if required.</li> </ol> <p>Note: all locations selected must provide for long-term tree growth</p> </li> <li>• <b>Include understorey plantings in addition to the tree canopy replacement plantings where feasible in consultation with Councils and/or the land manager</b></li> </ul>	Design, construction, operation

		<ul style="list-style-type: none"> <li>Specify requirements for the ongoing responsibility for maintenance and monitoring of the Tree Canopy Replacement Plan</li> </ul> <p>The replacement planting should commence as soon as possible and in stages, once tree removal extent is confirmed and suitable replacement sites have been determined in consultation with relevant councils and authorities.</p> <p>A post-construction assessment is to be undertaken to confirm extent of tree removal and that the Tree Canopy Replacement Plan will achieve the net gain target set out above.</p>	
<b>5. Business (B)</b>			
Planning and Environment Act 1987	BNEW1	<p><b>Business disruption mitigation plan</b></p> <p>Prepare and implement a Business Disruption Mitigation Plan in accordance with the Victorian Small Business Engagement Guidelines (Victorian Small Business Commission) to ensure that business disruption for small businesses, <b>including all businesses in the Bulleen Industrial Precinct</b>, arising from the project is mitigated to the extent practicable.</p>	Design, construction
	BNEW2	<p><b>Business Relocation Strategy</b></p> <p>The State must develop and implement a Business Relocation Strategy to assist businesses directly affected by acquisition. The strategy must be developed in consultation with affected businesses, relevant local Councils, relevant local trader associations, and other affected stakeholders affected, immediately on approval of the EMF.</p> <p>The strategy must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>The identification of affected businesses and other relevant stakeholders</li> <li>Provide a program to support the relocation of businesses including identifying services and support programs.</li> <li>The appointment of a specialised relocation adviser to support affected businesses</li> <li>Procedures to disseminate information, including through the Business Liaison Group (EPR B5) regarding the business relocation strategy and services, key project milestones that may impact on business relocations, and other changes that may affect businesses during the closure of existing operations.</li> <li>Assistance in the provision of targeted marketing and promotional initiatives to build community and customer awareness for relocated businesses.</li> <li>Procedures to work with business and landowners to endeavour to reach agreement on the timeframe for possession of the land.</li> <li>Procedures to engage with businesses and other stakeholders, and through which affected businesses and relevant local trader associations can provide comment or feedback in relation to the relocation strategy and its associated services.</li> </ul> <p>NELP should also work with councils to identify and assess the feasibility of alternative location options for displaced businesses.</p> <p><b>In parallel with the Business Relocation Strategy, the State Government, led by the Department of Transport with appropriate expert advice, must prepare and implement a package of individual business plans prepared with each business in the Bulleen Industrial Precinct that:</b></p> <ul style="list-style-type: none"> <li>understands at a fine-grained level their current operation</li> <li>desire to relocate or cease operations</li> <li>business needs for new sites</li> <li>preliminary specific site identification</li> <li>practical and reasonable assistance to implement these plans.</li> </ul> <p>Note: the requirements of this EPR are in addition to any rights or entitlements available under compulsory acquisition legislation.</p>	Design, construction
	BNEW3	<p><b>Employee Assistance Strategy</b></p> <p>The State must develop and implement an Employee Assistance Strategy to provide relevant workforce support measures for employees of businesses closing or relocating as a consequence of acquisition for the Project.</p> <p>The strategy must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>The identification of affected businesses and employees</li> <li>Provide a co-ordinated link to support services for affected employees (for example, access to a range of services such as training advice, careers advice, resume workshopping, advice on government entitlements, referral to other job support services, and skills assessments).</li> <li>The identification of relevant government agencies and support services</li> </ul> <p>Procedures to disseminate information including through the Business Liaison Group (EPR B5), regarding the employee assistance strategy and services, key project milestones that may impact on business closures and relocations, and other changes that may affect businesses and their employees during the closure of existing operations.</p> <p><b>In parallel with the Employee Assistance Strategy, the State Government, led by the Department of Transport with appropriate expert advice, must prepare and implement a package of individual employee assistance plans prepared with and for each employee who requests it, in consultation with the employer, that:</b></p> <ul style="list-style-type: none"> <li>understands at a fine-grained level their future employment plans</li> <li>need for training and development</li> <li>factors that would influence their desire to remain employed with a Bulleen Industrial Precinct business</li> </ul> <p><b>practical and reasonable assistance to implement their assistance plan.</b></p>	Design, construction
	B2	<p><b>Minimise disruption to businesses from land acquisition and temporary occupation</b></p> <p>Minimise disruption to businesses from permanent acquisition or temporary occupation of land to the extent practicable, and work with affected businesses and land owners to endeavour to reach agreement on the terms for possession of the land in accordance with relevant legislation.</p>	Design, construction
	B3	<p><b>Minimise and remedy damage or impacts on third party property and infrastructure</b></p> <p>Through detailed design and construction, and in consultation with relevant land owners and parties as necessary, design and construct the works to minimise, to the extent practicable, impacts to, and interference with, third party property and infrastructure and to ensure that infrastructure and property is protected during construction and operation. Any damage caused to property or infrastructure as a</p>	Design, construction

		result of North East Link must be appropriately remedied in consultation with the property or asset owner.	
	B4	<p><b>Minimise access and amenity impacts on businesses</b></p> <p>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.</p> <p>As well as minimising impacts above, temporary occupation of sites for construction must not:</p> <ul style="list-style-type: none"> <li>• reduce the viability of nearby businesses</li> <li>• cause adverse amenity impacts to views and amenity experience from nearby businesses</li> <li>• significantly increase travel time from the residential areas to businesses and shopping precincts including Watsonia Village</li> <li>• reduce car parking available to shoppers and traders in shopping areas including Watsonia Village.</li> </ul> <p>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.</p>	Design, construction
	B5	<p><b>Protect utility assets</b></p> <p>Protect or, where required, relocate utility assets to the reasonable satisfaction of the service provider and/or asset owners.</p>	Design, construction
	B6	<p><b>Business liaison groups</b></p> <p>Contractors must participate in the Business Liaison Groups established and managed by the North East Link Project to facilitate business and stakeholder involvement for the construction phase of the project. Participation must include:</p> <ul style="list-style-type: none"> <li>• Attendance at meetings</li> <li>• Regular and timely reporting of design and construction activities and key project milestones</li> <li>• Provision of advance notice about changes to traffic and parking conditions and the duration of impact</li> <li>• Timely provision of relevant information, including response to issues raised by the group</li> <li>• Regular reporting and monitoring of business community feedback, impacts and discussion of mitigation measures and their effectiveness</li> <li>• Recording, managing and resolving complaints from affected businesses in accordance with the complaints management process required under EPR SC2.</li> </ul>	Design, construction
<b>NEW. Construction Compound Management</b>			
<p><i>Environment Protection Act 1970</i></p> <p><i>Planning and Environment Act 1987</i></p> <p><i>Water Act 1989</i></p> <p>State Environment Protection Policy (SEPP) – Prevention and Management of Contamination of Land</p> <p>State Environment Protection Policy (SEPP) – Waters of Victoria</p>	CC1	<p><b>Implement a Construction Compound Management Plan</b></p> <p>Prepare and implement a Construction Compound Management Plan (CCMP) in accordance with the requirements of relevant regulations, standards and best practice guidelines.</p> <p>The CCMP must accord with the approved Construction Compound Plan under the Incorporated Document.</p> <p>The CCMP must define roles and responsibilities and include requirements and methods for:</p> <ul style="list-style-type: none"> <li>• Complying with applicable regulatory requirements</li> <li>• Identifying the nature and extent of construction activity at the particular site including buildings and works</li> <li>• Safe access that minimises impacts on local streets</li> <li>• Storage, handling, transport and disposal of spoil in a manner that protects human health and the environment and is consistent with the transport management plan(s) required by EPR T2.</li> <li>• Design and management of temporary stockpile areas</li> <li>• Minimising impacts and risks to waterways</li> <li>• Avoid and minimise increases to flood risk</li> <li>• Management of the construction compound, including health, safety and environment procedures that address risks associated with construction activities for visitors and general public; contain measures to control exposure in accordance with relevant regulations, standards and best practice guidance and to the requirements of WorkSafe and EPA Victoria; and include method statements detailing monitoring and reporting requirements</li> </ul>	Design, construction
<b>6. Contamination and soil (CL)</b>			
<p><i>Dangerous Goods Act 1985</i></p> <p><i>Environment Protection Act 1970</i></p> <p><i>Occupational Health and Safety Act 2004</i></p> <p>National Environment Protection (Assessment of Site Contamination) Measures 2013 (ASC NEPM)</p> <p>PFAS National Environmental Management Plan 2018</p> <p>Environment Protection (Industrial Waste Resource)</p>	CL1	<p><b>Implement a Spoil Management Plan</b></p> <p>Prepare and implement a Spoil Management Plan (SMP) in accordance with relevant regulations, standards and best practice guidelines and with reference to the Spoil Management Strategy contained within the EES (Technical Report O). The SMP must be developed in consultation with the EPA Victoria, any public land managers and in respect of transport of spoil, the relevant road authorities. The SMP must and include processes and measures to manage spoil, <del>The SMP must</del> define roles and responsibilities and include requirements and methods for:</p> <ul style="list-style-type: none"> <li>• Complying with applicable regulatory requirements</li> <li>• Completing a detailed site investigation (in accordance with Australian Standard AS 4482.1:2005 Guide to the investigation and sampling of sites with potentially contaminated soil and the EPA Victoria Industrial Waste Resource Guidelines) prior to any excavation of potentially contaminated areas to identify location, types and extent of impacts and to characterise spoil to inform spoil and waste management</li> <li>• Identifying the nature and extent of spoil (clean fill and contaminated spoil)</li> <li>• Storage, handling, transport and disposal of spoil in a manner that protects human health and the environment and is consistent with the transport management plan(s) required by EPR T2. This includes requirements and methods for the appropriate treatment/remediation of any contaminated excavated spoil and contaminated residual material left on site</li> <li>• Design and management of temporary stockpile areas</li> </ul>	Design, construction

<p>Regulations 2009 Occupational Health and Safety Regulations 2007 State Environment Protection Policy (SEPP) – Prevention and Management of Contamination of Land</p>	<ul style="list-style-type: none"> <li>Minimising impacts and risks from disturbance of acid sulfate soils (as per EPR CL2), odour (as per EPR CL3) and vapour and ground gas intrusion (as per EPR CL4)</li> <li><a href="#">Transport of spoil along appropriate roads</a></li> <li>Management of hazardous substances, including health, safety and environment procedures that address risks associated with exposure to hazardous substances for visitors, <del>and</del> the general public; and <a href="#">local fauna</a>; contain measures to control exposure in accordance with relevant regulations, standards and best practice guidance and to the requirements of WorkSafe and EPA Victoria; and include method statements detailing monitoring and reporting requirements.</li> </ul>	
<p>State Environment Protection Policy (SEPP) – Air Quality Management, 2001 (odour) Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999 AS1940 Storage Handling of Flammable and Combustible Liquids AS 4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil Relevant Industrial Waste Resource Guidelines (IWRG). Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil, 2003 EPA Victoria publications: 1698 Liquid Storage and Handling Guidelines 480 Environmental Guidelines for Major Construction Sites 655.1 Acid Sulfate Soil and Rock EPA Publication 1624 Industrial Waste 2016</p>	<ul style="list-style-type: none"> <li>Identifying where any contaminated or hazardous material is exposed during construction (notably through former landfills, service stations and industrial land) and how it will be made safe for the public and the environment. Beneficial uses of land and National Environment Protection (Assessment of Site Contamination) Measures 2013 guidance on criteria protective of those beneficial uses must be considered for the land uses in these areas. This must include methods for: <ul style="list-style-type: none"> <li>Construction of appropriate cover (soil, concrete, geofabric etc) such that no contamination is left exposed at the surface or where it may be readily accessed by the public and <a href="#">local fauna</a> such that it cannot generate runoff or leachate during rain events</li> <li>Maintenance of the cover</li> <li>Identification of the nature and depth of the contaminants</li> <li>Mitigating impacts during sub-surface works in those areas, eg drilling and excavation</li> </ul> </li> <li>Monitoring and reporting</li> <li>Identifying locations and extent of any prescribed industrial waste (PIW), other waste, and the method for characterising PIW and other waste prior to excavation</li> <li>Application of the <i>Environment Protection Act 1970</i> waste management hierarchy, including: <ul style="list-style-type: none"> <li>Ongoing identification and, where practicable, adoption of options for the re-use of spoil</li> <li>Identification of options for management of spoil</li> <li>Identifying suitable sites for disposal of any waste. This includes identifying contingency arrangements for management of waste, where required, to address any identified capacity issues associated with the licensed landfill's ability to receive PIW and other waste</li> </ul> </li> <li>In areas used for temporary construction works, <a href="#">and the construction of surface water management works</a>, contamination attributable to the project must be appropriately remediated in consultation with the relevant land manager.</li> </ul>	
	<p>CL2 <a href="#">Minimise impacts from disturbance of acid sulfate soil</a> The SMP referenced in EPR CL1 must include requirements and methods to minimise impacts from disturbance of acid sulfate soil, including but not limited to:</p> <ul style="list-style-type: none"> <li>Characterising acid sulfate soil and rock prior to excavation</li> <li>Developing appropriate stockpile areas including lining, covering and runoff collection to prevent release of acid to the environment, <a href="#">including wetlands</a>, and impact to human health</li> <li>Identifying suitable sites for re-use management or disposal of acid sulfate soil and rock</li> <li>Preventing oxidation that could lead to acid formation if possible through cover and/or scheduling practices, ie ensuring acid sulfate soil and rock is not left in stockpiles for any length of time and/or addition of neutralising compounds.</li> </ul> <p>Requirements and methods must be in accordance with the Industrial Waste Management Policy (Waste Acid Sulfate Soils), EPA Victoria Publication 655.1 Acid Sulfate Soil and Rock, and the Department of Sustainability and Environment's Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil.</p>	<p>Construction</p>
	<p>CL3 <a href="#">Minimise odour impacts during spoil management</a> The SMP referenced in EPR CL1 must include requirements and methods for odour management (in accordance with EPA Victoria requirements) during the excavation, stockpiling and transportation of contaminated material including:</p> <ul style="list-style-type: none"> <li>Identifying the areas of contamination that may pose an odour risk</li> <li>Monitoring of the excavated material for possible odour risk</li> <li>Management measures to minimise odour.</li> </ul>	<p>Construction</p>
	<p>CL4 <a href="#">Minimise risks from vapour and ground gas intrusion</a> Relevant North East Link sections must be designed and constructed to prevent ingress of vapours and gases associated with any construction that interfaces with landfill sites or contaminated areas. The SMP referenced in EPR CL1 must include requirements for assessment, monitoring and management of intrusive vapour including potentially <a href="#">toxic</a>, flammable or explosive conditions in enclosed spaces or other impacts on human health and the environment. The plan must address vapour risks associated with excavation of impacted soils, extraction of impacted groundwater, open excavations and stockpiles and gases associated with landfills. This must include, where relevant:</p> <ul style="list-style-type: none"> <li>Securing of the excavation and stockpile area from the public and signage warning of open excavations</li> <li>Monitoring of vapours and odours while excavations are open and stockpiles remain onsite</li> <li>Mitigation measures to prevent fugitive releases of vapours and gasses during construction.</li> </ul>	<p>Design, construction</p>
	<p>CL5 <a href="#">Manage chemicals, fuels and hazardous materials</a> The CEMP and OEMP must include requirements for management of chemicals, fuels and hazardous materials including:</p> <ul style="list-style-type: none"> <li>Minimise chemical and fuel storage on site and store hazardous materials and dangerous goods in accordance with the relevant guidelines and requirements</li> <li>Comply with the Victorian WorkCover Authority and Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids and EPA Victoria publications 480 Environmental Guidelines for Major Construction Sites and 1698 Liquid Storage and Handling Guidelines</li> </ul>	<p>Design, construction, operation</p>

		<ul style="list-style-type: none"> <li>Develop and implement management measures for hazardous materials and dangerous substances, including: <ul style="list-style-type: none"> <li>Creating and maintaining a dangerous goods register</li> <li>Disposing of any hazardous materials, including asbestos, in accordance with Industrial Waste Management Policies, regulations and relevant guidelines</li> <li>Implementing requirements for the installation of bunds and precautions to reduce the risk of spills</li> </ul> </li> <li>Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits.</li> </ul>	
	CL6	<p><b>Minimise contamination risks during operation</b></p> <p>The OEMP must include requirements and methods for minimising contamination risks during operation and maintenance of North East Link including:</p> <ul style="list-style-type: none"> <li>Maintaining relevant controls and preventing impacts during operation from contaminated material, odour, vapour and gas</li> <li>Maintaining controls implemented as part of North East Link to make any known areas of contamination or hazardous material that were exposed during construction (notably through former landfills) safe for the public and the environment</li> <li>Mitigating impacts during sub-surface works in any identified areas of contamination or hazardous materials, eg drilling and excavation</li> <li>Implementing contingency measures, where required, to address any potential contamination, odour, vapour or gas impacts or incidents.</li> <li>Monitoring any potential mobilisation of contaminants towards ecological and recreational assets including the Yarra River and wetlands and must include a groundwater monitoring program, intervention trigger levels and mitigation actions.</li> </ul>	Operation
<b>7. Flora and Fauna (FF)</b>			
<p><i>Environment Protection and Biodiversity Conservation Act 1999</i></p> <p><i>Conservation, Forests and Lands Act 1987</i></p> <p><i>Flora and Fauna Guarantee Act 1988</i></p> <p><i>Planning and Environment Act 1987</i></p> <p><i>Water Act 1989</i></p> <p><i>Wildlife Act 1975</i></p> <p>State Environment Protection Policy (SEPP) Waters 2018 (Vic)</p> <p>Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017</p>	FF1	<p><b>Avoid and Minimise impacts on fauna and flora</b></p> <p>The CEMP must include requirements and methods for avoiding, where practicable, and otherwise minimising to the extent practicable for:</p> <ul style="list-style-type: none"> <li>Managing fauna that may be displaced due to vegetation removal or encountered on site during construction works in compliance with the <i>Wildlife Act 1975</i> and in consultation with public land managers where relevant</li> <li>Complying with the <i>Fisheries Act 1995</i></li> <li>Undertaking pre-clearing surveys and inspections to confirm the on-site location of fauna immediately prior to habitat removal or, where relevant, works on waterways, and to assist fauna to safety as necessary</li> <li>Prepare a Kangaroo Management Plan for the Simpsons Barracks and M80 interchange in consultation with DELWP</li> <li>Contingency and reporting procedures for the event that a listed threatened species is identified in order to mitigate any potential for significant impacts on the listed threatened species.</li> <li>Protection of all vegetation inside and adjacent to the Project area that is not required to be removed</li> </ul> <p>Surveys, inspections and management actions must be undertaken by a qualified wildlife ecologist or aquatic ecologist with all necessary authorisations obtained prior to removal of fauna habitat.</p> <p>The CEMP must be prepared in consultation with relevant land managers.</p> <p>A copy of the approved CEMP must be provided to relevant land managers and each relevant municipal Council.</p>	Construction
	FF2	<p><b>Minimise and offset native vegetation removal</b></p> <p>Through detailed design, avoid where practicable, and otherwise minimise the removal of native vegetation and fauna habitat and impacts on habitat connectivity, in particular in relation to <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> or <i>Flora and Fauna Guarantee Act 1988</i> listed threatened species. This must include minimising removal of Matted Flax Lily, the locally endemic Studley Park Gum and the loss of potential foraging habitat for the Powerful Owl, Swift Parrot and Grey-headed Flying Fox. Key areas for minimisation efforts must include Simpson Barracks, Yarra Bend, Trinity Grammar wetlands, Banksia Parkland, River Gum Walk Creek Bend Reserve and the Koonung Creek valley.</p> <p>The CEMP must include requirements for protection of native vegetation and listed species, including establishment of no-go-zones to protect vegetation and habitat to be retained and Tree Protection Plan(s) as required by EPR AR2. No-go-zones must also be established for:</p> <ul style="list-style-type: none"> <li>The Grey-headed Flying fox Campsite within the Yarra Bend Park</li> <li>Bolin Bolin Billabong</li> <li>Simpson Barracks</li> <li>The Plains Grassy Woodland community between Enterprise Drive and the M80 Ring Road in Bundoora</li> <li>The portion of 49 Greenaway Street, Bulleen (former Drive-in) heavily vegetated with trees along the Yarra River</li> <li>Trees at and adjacent to Macleod Station (to protect habitat for Swift Parrots)</li> <li>Surface impacts in the Banyule Flats and Warringal Parklands and the Heide Museum of Modern Art.</li> </ul> <p>Every effort must be made to avoid ecological impacts in other locations that are known to provide high habitat value for significant fauna species.</p> <p>Where the removal of native vegetation is unavoidable the project must meet the offset requirements of the Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017 except as otherwise agreed to by the Secretary to DELWP.</p> <p>Where appropriate for the landscape and project location, tree replacement (as required by EPR AR3) and landscaping is to use locally indigenous species (utilising seed collected from species within the project boundary where appropriate and practical), which are suited to the landscape profile and setting being revegetated, and seek to maximise habitat value and connectivity for native fauna. Where practicable and appropriate for the landscape and project location, best practice measures must be applied to retain and reinstate topsoil to support growing conditions for native species. Where topsoil cannot be retained or reused for North East Link, alternative opportunities for reuse must be explored.</p> <p>Where direct impacts on Studley Park Gum occur, a Studley Park Gum Management Framework should be developed and corresponding management plan must be developed and implemented.</p>	Design, construction
	FF3	<p><b>Avoid introduction or spread of weeds and pathogens</b></p> <p>The CEMP must include measures to avoid the spread or introduction of weeds and pathogens during construction, including vehicle and equipment hygiene.</p>	Construction

FF4	<p><b>Protect aquatic habitat</b></p> <p>In consultation with public land managers and Melbourne Water where relevant, design, locate and construct structures to minimise short and long term adverse impacts on riparian, riverbed and aquatic habitat in waterways and wetlands, including billabongs. The CEMP must contain and require implementation of measures to minimise adverse impacts from construction activities on riparian, riverbed and aquatic habitat and aquatic fauna connectivity.</p>	Design, construction
FF5	<p><b>Obtain Flora and Fauna Guarantee Act 1988 permits</b></p> <p>Prior to construction, a permit(s) must be obtained to take and destroy flora species protected under the Flora and Fauna Guarantee Act 1988.</p>	Construction
FF6	<p><b>Implement a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan</b></p> <p>Prepare and implement a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan to the satisfaction of the relevant water authorities. The Groundwater Dependent Ecosystem Monitoring and Mitigation Plan must be informed by the groundwater modelling and groundwater monitoring required by EPR GW1 and EPR GW2, and must include (but not be limited to):</p> <ul style="list-style-type: none"> <li>• Identification of Groundwater Dependent Ecosystems (GDEs) predicted to be impacted prior to construction commencing, including Bolin Bolin Billabong</li> <li>• Details of the monitoring procedures and program for each relevant GDEs including monitoring periods appropriate to each GDE</li> <li>• Specific procedures to monitor groundwater levels at GDEs predicted to be impacted including monitoring as close as possible to the GDE (considering ecological and access constraints) and for aquatic GDEs monitoring the surface water levels and quality as appropriate, including Bolin Bolin Billabong. These procedures should include: <ul style="list-style-type: none"> <li>• Groundwater monitoring of the alluvium by specific monitoring bores as close as possible to billabongs must be undertaken before, during and after construction.</li> <li>• Monitoring of water levels and water quality in billabongs must be undertaken before, during and after construction.</li> <li>• Monitoring of water balance input and output volumes to and from billabongs must be undertaken before, during and after construction.</li> </ul> </li> <li>• Identification of relevant monitoring and management programs by Melbourne Water or other authorities and how these are referenced in the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan</li> <li>• Measures to mitigate monitored changes in water levels and quality that could impact the billabongs or other GDEs, which take into account the natural variability</li> <li>• Where the survival of Groundwater Dependent Large Trees not requiring removal is predicted to be affected by groundwater drawdown during construction or operation based on groundwater modelling outputs, include measures to maintain the health of large trees</li> <li>• In relation to any trees unlikely to survive during operation as a consequence of groundwater drawdown, processes for offsets to be obtained in accordance with EPR FF2.</li> <li>• The process for review of the Plan, including how the groundwater modelling and monitoring under EPR GW1 and EPR GW2 will be considered and the GDE monitoring program and periods subsequently reviewed.</li> </ul>	Construction, operation
FF7	<p><b>Implement a salvage and translocation plan for Matted Flax-lily</b></p> <p>Where direct impacts on Matted Flax-lily occur, a salvage and translocation plan must be developed and implemented to the satisfaction of the Department of Environment, Land, Water and Planning and the Commonwealth Department of Environment and Energy, prior to the commencement of the Project.</p>	Construction, operation
FF8	<p><b>Minimise intense noise and vibration impacts on Australian Grayling</b></p> <p>The CEMP must include and require implementation of reasonable measures to avoid and mitigate intense noise and vibration impacts in or near the Yarra River (eg from activities such as pile driving and similar activities). This must include, to the extent practicable:</p> <ul style="list-style-type: none"> <li>• Selection of work methods to minimise noise and vibration</li> <li>• Avoiding activities that may generate intense noise and vibration and impact on the Australian Grayling during critical migration or breeding periods (March to June, September to November) as defined within the National Recovery Plan for the Australian Grayling <i>Prototroctes maraena</i> (Backhouse, G, Jackson, J &amp; O'Connor, J 2008)</li> <li>• Management and monitoring of noise and vibration in accordance with the CNVMP (EPR NV4).</li> </ul>	Construction
FF9	<p><b>Protect fauna habitat values in existing waterbodies that are modified for drainage purposes</b></p> <p>Where existing waterbodies within or near the project boundary are to be modified for drainage purposes (for example Simpson's Lake, billabongs, and the southernmost waterbody in the Freeway golf course), the CEMP must include and require implementation of measures to minimise impacts on waterbirds and other fauna that use the wetlands including:</p> <ul style="list-style-type: none"> <li>• Retain dead and alive standing trees and other vegetation in and surrounding the waterbody</li> <li>• As far as practicable, undertake activities outside the typical nesting period for waterbirds (typically Sept to Jan)</li> <li>• Minimise the construction period to the extent practicable and refill the wetlands post construction if they have been drained.</li> <li>• Include gross pollutant traps and water quality treatment measures to the satisfaction of the relevant waterway manager.</li> </ul>	Construction
NEW FF10	<p><b>Studley Park Gum Mitigation</b></p> <p>To mitigate impacts on the Studley Park Gum, a Studley Park Gum Management Framework must be developed and corresponding management plan must be developed and implemented in consultation with DELWP.</p>	
<b>8. Ground Movement (GM)</b>		
N/A	<p><b>Design and construction to be informed by a geotechnical model and assessment</b></p> <p>Develop and maintain geological and groundwater model(s) (as per EPR GW1) to inform tunnel and trench design and the construction techniques to be applied for the various geological and groundwater conditions. The model(s) are to:</p> <ul style="list-style-type: none"> <li>• Identify sensitive receptors that may be impacted by ground movement</li> <li>• Inform monitoring of ground movement and ground water levels prior to construction to identify pre-existing movement</li> </ul>	Design, construction

		<ul style="list-style-type: none"> <li>• Inform tunnel design and the construction techniques to be applied for the various geological and groundwater conditions</li> <li>• Assess potential drawdown and identify trigger levels for implementing additional mitigation measures to minimise potential primary consolidation settlement</li> <li>• Assess potential ground movement from excavation and identify trigger levels for implementing additional mitigation measures to minimise potential ground movement.</li> </ul>	
	GM2	<p><b>Implement a Ground Movement Plan to manage ground movement impacts</b></p> <p>Develop and implement a Ground Movement Plan(s). The Ground Movement Plan must be informed by EPR GM1 and EPR GW1 (predictive model) and:</p> <ul style="list-style-type: none"> <li>• Address the location of structures/assets which may be susceptible to damage by ground movement</li> <li>• Identify baseline ground movement monitoring prior to construction. A baseline monitoring report is to be compiled summarising the results of the baseline surveys undertaken and included in the plan</li> <li>• Identify appropriate ground movement impact acceptability criteria</li> <li>• Identify appropriate mitigation measures should the geotechnical model (EPR GM1), predictive groundwater model (EPR GW1), or subsequent monitoring program indicate acceptability criteria may not be met</li> <li>• Establish ground movement monitoring requirements for the area surrounding proposed project works to measure ground movement consistency with the anticipated ground movement in the predictive model.</li> </ul>	Design, construction
	GM3	<p><b>Carry out Condition surveys for potentially affected property and infrastructure</b></p> <p>Conduct condition survey(s) of property and infrastructure predicted to be affected by ground movement based on the results of the geological and groundwater model (EPR GM1) or, where a property owner reasonably expects to be potentially affected and has requested a pre-construction condition survey. Develop and maintain a database of pre-construction and as-built condition information for each potentially affected structure identified as being in an area susceptible to damage (see EPR GM1) or where a property owner has requested a pre-construction condition survey, specifically including:</p> <ul style="list-style-type: none"> <li>• A list of identified structures/assets which may be susceptible to damage resulting from ground movement resulting from project works</li> <li>• Results of pre-construction condition surveys of structures, pavements, significant utilities and parklands to establish baseline conditions and potential vulnerabilities</li> <li>• Records of consultation with land owners in relation to the condition surveys</li> <li>• Post-construction stage condition surveys conducted, where required, to ascertain if any damage has been caused as a result of project works.</li> </ul> <p>Pre- and post-condition assessments must be proactively shared with the property owner. All stakeholder engagement activities must be undertaken in accordance with the Communications and Community Engagement Plan (see EPR SC2).</p>	Construction
	GM4	<p><b>Rectify damage to properties and assets impacted by ground movement or settlement</b></p> <p>For properties and assets (including natural landscapes and parklands) damaged by ground movement caused by the project, undertake necessary repair works or other actions as agreed with the relevant property or asset owner (or land manager). For places listed on the Victorian Heritage Register, consultation with Heritage Victoria must be undertaken. Establish an independent mediation process for the assessment of claims for property and asset damage that cannot be agreed between the Project and the property or asset owner.</p>	Construction
<b>9. Groundwater (GW)</b>			
<p><i>Water Act 1989</i> <i>Water Industry Regulations 2006 (Vic)</i> <i>State Environment Protection Policy (SEPP) Waters 2018</i> <i>State Environment Protection Policy (SEPP) Prevention and Management of Contaminated Land 2002</i> <i>VicRoads Integrated Water Management Guidelines (June 2013)</i></p> <p>EPA Publications:</p> <ul style="list-style-type: none"> <li>• 480 Environmental Guidelines for Major Construction Sites</li> <li>• 275 (1991) Construction techniques for sediment pollution control</li> <li>• 668 (2006) Hydrogeological assessment groundwater quality} guidelines</li> <li>• 669 (2000) Groundwater Sampling</li> </ul>	GW1	<p><b>Design and construction to be informed by a groundwater model</b></p> <p>Develop a predictive and numerical groundwater model in consultation with EPA Victoria, informed by field investigations, to predict changes in groundwater levels and flow and quality, as they are affected by construction, and develop mitigation strategies, as per EPR GM1. The groundwater model must be of a standard that is at least comparable to the modelling documented within the Report on Additional Groundwater Modelling prepared by GHD and dated July 2019 and must be updated to take account of any changes to construction techniques or operational design features, and additional monitoring data from EPR GW2. The groundwater model must be developed with a process that involves independent review by the EPA appointed Independent Environmental Auditor consistent with the Australian Groundwater Modelling Guidelines (June 2012).</p>	Design, construction
	GW2	<p><b>Monitor groundwater</b></p> <p>Develop and implement a pre-construction, and construction groundwater monitoring program to:</p> <ul style="list-style-type: none"> <li>• Establish baseline water level and quality conditions throughout the study area, including the <b>identification (where possible) delineation (to the extent practicable) of those portions of existing contaminant plume(s) that may be impacted by the project to the extent required to manage groundwater impacts to acceptable levels</b></li> <li>• Calibrate the predictive model prior to commencement of construction, manage construction activities, and verify the model predictions</li> </ul> <p>Assess the adequacy of proposed A post-construction groundwater monitoring program must be developed and implemented to:</p> <ul style="list-style-type: none"> <li>• Confirm the acceptability of resultant water quality and water level recovery (and potential mounding) as predicted by the numerical groundwater model. Acceptability is to be assessed with consideration to the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan (as required by EPR FF6) and other identified beneficial uses of groundwater</li> <li>• Confirm the effectiveness of applied measures as identified in the Groundwater Management Plan (refer EPR GW4) and if required, identify and implement contingency measures to restore groundwater to an acceptable level.</li> </ul> <p>The duration of post-construction monitoring must be a minimum of two years or until acceptable restoration of groundwater <b>and a stable hydrogeological regime</b> has been confirmed by the Independent Environmental Auditor, in consultation with EPA Victoria and Melbourne Water. The pre-construction, construction and post-construction monitoring program(s) must be developed in consultation with EPA Victoria and Melbourne Water, and be consistent with EPA Victoria Publication 668 Hydrogeological assessment groundwater quality guidelines, EPA Victoria Publication 669 Groundwater Sampling Guidelines, and the State Environment Protection Policy (Waters).</p>	Design, construction, operation
	GW3	<p><b>Minimise changes to groundwater levels through tunnel and trench drainage design and construction methods</b></p> <p>Design long term tunnel and trench drainage and adopt construction methods which minimise changes to groundwater levels during construction and operation to manage, mitigate and/or minimise to the extent practicable:</p> <ul style="list-style-type: none"> <li>• Requirements for groundwater management and disposal</li> </ul>	Design, construction



<p>Guidelines.</p> <ul style="list-style-type: none"> <li>Ministerial Guidelines for Groundwater Licensing and the Protection of High Value Groundwater Dependent Ecosystems (2015)</li> </ul> <p>Australian groundwater modelling guidelines (Barnett et al. 2012)</p>	<ul style="list-style-type: none"> <li>Mobilisation of contaminated groundwater</li> <li>Dewatering and potential impacts of acid sulfate soils, including both unconsolidated sediments and lithified sedimentary rock</li> <li>Potential impacts on waterways and potential groundwater dependent ecosystems, including terrestrial ecosystems</li> <li>Any other adverse impacts of groundwater level changes such as subsidence.</li> </ul> <p>Design and implement engineering control measures and/or ground treatment to limit to the extent practicable groundwater inflow and groundwater drawdown during excavation, construction and operation of tunnels and trenches, cross passages and subsurface excavations.</p> <p>The Groundwater Management Plan (as required by EPR GW4) must contain measures and/or controls to minimise groundwater inflow during construction to excavations and groundwater drawdown, including contingency measures should monitoring indicate adverse impacts are occurring. These must include measures to:</p> <ul style="list-style-type: none"> <li>Manage, mitigate and minimise to the extent practicable reduction or loss of groundwater discharge to waterways or loss of water availability for terrestrial ecosystems</li> <li>Manage, mitigate and minimise the oxidation of acid sulfate soil materials and acidification of groundwater</li> <li>Manage, mitigate and minimise any movement of contamination that is identified</li> <li>Manage, mitigate and minimise impacts on beneficial uses and risk of vapour intrusion</li> <li>Ensure that groundwater seepage is collected, treated and disposed during construction in accordance with the <i>Environment Protection Act 1970</i> waste management hierarchy and EPA Victoria requirements. Obtain a trade waste agreement from the relevant water authority where disposal to sewer is required. Groundwater discharge to waterways must be approved by the relevant authority prior to discharges occurring and meet the State Environment Protection Policy (Waters) requirements.</li> </ul>	
	<p>GW4 <b>Implement a Groundwater Management Plan to Protect groundwater quality and manage groundwater interception</b></p> <p>A Groundwater Management Plan must be developed in consultation with EPA Victoria and Melbourne Water and implemented to protect groundwater quality and manage interception of groundwater including documenting the measures required to achieve EPR GW2 and EPR GW3. The Groundwater Management Plan must be informed by the groundwater modelling required by EPR GW1 and updated where required in response to modelling results, new information resulting from the monitoring programs required by GW2 and assessment of the adequacy or effectiveness of controls.</p> <p>The Groundwater Management Plan must include requirements and construction methods to protect groundwater quality including where appropriate, but not limited to:</p> <ul style="list-style-type: none"> <li>Selection and use of sealing products, caulking products, lubricating products and chemical grouts during construction that will not diminish the groundwater quality</li> <li>Selection and use of fluids for artificial recharge activities that will not diminish the groundwater quality</li> <li>Requirements to ensure compatibility of construction material with groundwater quality to provide long term durability for infrastructure design life</li> <li>Design and development of drainage infrastructure that minimises clogging and maintenance risks from dissolved constituents in groundwater precipitating out of solution</li> <li>Measures to assess, remove and dispose of contaminated groundwater and impacted soils associated with excavation and construction</li> <li>Reinjection borefields for hydraulic control of drawdowns (or contaminated groundwater plumes)</li> <li>Remedial grouting.</li> </ul> <p>The Groundwater Management Plan must include requirements and methods for management of groundwater interception during construction including where appropriate, but not limited to:</p> <ul style="list-style-type: none"> <li>Identification, treatment, disposal and handling of contaminated seepage water and/or slurries including vapours in accordance with relevant legislation and guidelines</li> <li>Assessment of barrier/damming effects</li> <li>Subsidence management</li> <li>Dewatering and potential impacts on acid sulfate soils, including both unconsolidated sediments and lithified sedimentary rock</li> <li>Protection of waterways and potential groundwater dependent ecosystems</li> <li>Management of unexpected contaminated groundwater eg using treatments, hydraulic controls, grouting and exclusion methods</li> <li>Management of possible impact to groundwater monitoring and management by third parties of existing contamination plumes</li> <li>Contingency actions when interventions are required.</li> </ul> <p>The Groundwater Management Plan must also include a review to confirm the status of potential use of extraction bores within the estimated construction drawdown area. Where required, measures must be developed and implemented, to the satisfaction of Southern Rural Water, to maintain water supply to identified, impacted groundwater users.</p>	Design, construction
	<p>GW5 <b>Manage groundwater during operation</b></p> <p>Prepare as part of the OEMP and implement measures for management, monitoring, reuse where possible and disposal of groundwater inflows during operation that comply with relevant legislation and guidelines (and include provisions of EPR FF6 where relevant), including but not limited to:</p> <ul style="list-style-type: none"> <li>State Environment Protection Policy (Waters)</li> <li>State Environment Protection Policy (Prevention and Management of Contaminated Land)</li> <li><i>Water Act 1989</i> and Water Industry Regulations 2006</li> <li><i>Occupational Health and Safety Act 2004</i> and Occupational Health and Safety Regulations 2017.</li> </ul> <p>The OEMP must include contingency measures and emergency response plans if unexpected groundwater contamination is encountered and requires disposal.</p> <p>A trade waste agreement from the relevant water authority must be obtained in accordance with regulatory requirements, where disposal to sewer is proposed. Approval from EPA and the relevant water authority (as required) must be obtained in accordance with regulatory requires, where discharge to waterways is proposed.</p>	Operation
<b>10. Historical Heritage (HH)</b>		
<p><i>Heritage Act 2017</i></p> <p>Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage</p>	<p>HH1 <b>Design and construct to minimise impacts on heritage</b></p> <p>Undertake detailed design of the permanent and temporary works to minimise impacts with capacity to <del>where practicable</del>, on the cultural heritage values of heritage places in consultation with Heritage Victoria and/or local councils (as applicable).</p> <p>Prior to commencement of works with capacity to <del>that</del> affect heritage places, structures or features, <del>directly or indirectly</del>, develop and implement in consultation with the relevant heritage authority:</p>	Design, construction

Victoria 2014		<ul style="list-style-type: none"> <li>Physical protection measures for <b>potentially affected</b> heritage places, structures or features as appropriate</li> <li>Where required, a methodology for any required dismantling, storage or reinstatement of heritage fabric (with reference to the ICOMOS Burra Charter 2013) <b>and works to ensure an appropriate setting if relocation is required.</b></li> </ul>	
	HH2	<p><b>Implement an Archaeological Management Plan to avoid and minimise impacts on historic archaeological sites and values</b></p> <p>Develop and implement an Archaeological Management Plan in consultation with Heritage Victoria detailing measures to avoid, minimise, mitigate and manage disturbance of archaeological sites and values affected by the project. Undertake investigations in accordance with the Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage Victoria 2015 and to the satisfaction of the Executive Director, Heritage Victoria.</p> <p>The Archaeological Management Plan must include:</p> <ul style="list-style-type: none"> <li>Requirements for background historical research, excavation methodology, research design, reporting and artefact management, artefact conservation, and analysis</li> <li>Protocols for managing previously unidentified historical archaeological sites discovered during the works.</li> </ul>	Construction
	HH3	<p><b>Monitor condition of heritage sites</b></p> <p>Undertake pre-construction and post construction condition survey(s) in accordance with EPR GM3 for heritage places at risk of impact from settlement and structural integrity disturbance as a result of the project. Measures to manage and monitor potential vibration impacts on heritage places during construction must be implemented in accordance with the Construction Noise and Vibration Management Plan required by EPR NV4 <b>and Groundwater Management Plan required by EPR GW4.</b> Report the results of monitoring for heritage places to the Executive Director, Heritage Victoria and take remedial action, if required, to the satisfaction of the Executive Director, Heritage Victoria.</p>	Construction
	HH4	<p><b>Undertake archival photographic recording</b></p> <p>Prior to construction, undertake archival photographic recording of all heritage places <b>or trees</b> demolished or modified by the works in accordance with Heritage Victoria's specification for the archival photographic recording of heritage places or alternative applicable Heritage Victoria guidelines as updated, to the satisfaction of the Executive Director, Heritage Victoria.</p>	Construction
	HH5	<p><b>Minimise impacts on heritage trees</b></p> <p>Comply with any requirements of Heritage Victoria if the trees that are to be impacted by the project are listed on the Victorian Heritage Register.</p>	Construction
<b>11. Land Use Planning (LP)</b>			
<i>Planning &amp; Environment Act 1987</i>	LP1	<p><b>Minimise land use impacts</b></p> <p>The project must be designed and constructed to:</p> <ul style="list-style-type: none"> <li>Minimise the <b>construction and design footprint</b> and avoid, <b>or, where avoidance is not feasible, minimise to the greatest extent possible to the extent practicable</b>, any temporary and permanent impacts on the following land uses: <ul style="list-style-type: none"> <li>Parks and reserves <b>including passive and active open space and pathways</b></li> <li>Significant landscapes <b>including those</b> around the Yarra River</li> <li>Other sensitive land uses such as educational facilities</li> <li><b>Sport, r</b>Recreational and community facilities</li> <li>Residential properties</li> <li>Commercial and industrial sites.</li> <li><b>Sites of identified cultural or social value including Heide Museum of Modern Art and Bulleen Art and Garden.</b></li> </ul> </li> <li>Consolidate or minimise the fragmentation of, and provide access to, residual land parcels to support future viable land use to the extent practicable.</li> <li><del>Adopt an integrated approach to the Manningham interchange which supports viable future land uses (such as commercial and industrial) and includes maximising the developable area at surface level to the extent practicable.</del></li> </ul>	Design, construction
	LP2	<p><b>Minimise impacts from location of new services and utilities</b></p> <p>New above ground services and utility infrastructure are to be located in a way that minimises impacts to existing residential areas, public open space and recreational facilities. This must include considering options to co-locate infrastructure where practicable.</p>	Design
	LP3	<p><b>Minimise inconsistency with strategic land use plans</b></p> <p><del>Design and development of the The project must avoid and minimise, to the extent practicable, impacts on residential, commercial, industrial, open space and community facility land uses from project development and operations which are inconsistent with strategic land use policy. Development of the project must have regard to relevant urban design and strategic land use strategies, plans and frameworks including the Yarra Strategic Plan and Draft Yarra River Bulleen Precinct Land Use Framework Plan when approved or any superseding document. Ceonsultation must occur with land managers and/or authorities responsible for the implementation of the relevant strategic land use plans and policies in preparing Urban Design Framework Plans required by the Incorporated Document.</del></p> <p>An integrated approach must be adopted to the Manningham Interchange in consultation with Manningham City Council which supports viable future land uses (such as commercial and industrial) and includes maximising the developable area at surface level to the extent practicable in addition to requirements for the Urban Design Framework Plan for this interchange to be approved under the Incorporated Document.</p> <p>The project must avoid and minimise impacts on residential, commercial, industrial, open space, culturally valued and community facility land uses from project development and operations which would be inconsistent with strategic land use policies.</p>	Design
	LP4	<p><b>Minimise overshadowing from noise walls and elevated structures and overlooking from elevated structures</b></p> <p>Overshadowing from elevated structures and noise walls to residential properties (including existing solar panels), community facilities, open spaces, waterways and valuable natural habitats must be minimised through detailed design. <b>Consultation must occur with directly affected property owners and occupiers to formulate acceptable parameters for these structures including location, design and materials.</b></p>	Design

		<p>Unless with the consent of an affected landowner or in exceptional circumstances, the extent of additional overshadowing of residential properties from non transparent structures:</p> <ul style="list-style-type: none"> <li>Should be no greater than the existing shadowing of secluded private open spaces associated with residential properties cast by existing structures including existing noise walls and other structures (e.g. elevated walkways) between the hours of 9:00 am to 3:00 pm as measured on September 22.</li> <li>If additional overshadowing occurs it must not be greater than 50% of the secluded private open space or 40 sqm, whichever is the greater, between the hours of 9:00 am to 3:00 pm as measured on September 22.</li> </ul> <p>Overlooking from elevated structures, especially within a distance of 15 metres to secluded open space and habitable room windows of residential properties, must be minimised through detailed design as far practicable. Consultation must occur with directly affected property owners and occupiers to formulate acceptable parameters, designs and materials for these structures.</p>	
	LP NEW1	<p><b>Open Space Replacement</b></p> <p>The Proponent and the State must replace all public open space permanently required for the Project on a like-for-like basis by the commencement of operation of the Project. <del>develop and implement a strategy with the objective to replace public open space permanently required for the Project. The strategy should</del> The Proponent in conjunction with the State must develop and implement a Relocation and Replacement Plan which must include:</p> <ul style="list-style-type: none"> <li>The replacement of all land used for parkland, reserves, passive open space and active open space including recreation facilities (where not addressed in SC4).</li> <li>Priorities for the acquisition of land within the Public Acquisition Overlay or private land in key strategic locations and a program identifying the timing of the acquisition or re-purposing of the identified new public open space sites.</li> <li>An assessment of the suitability of the replacement land for public open space by reference to relevant strategic documents, including the Yarra Strategic Plan (when released), reference to the Yarra River Bulleen Draft Land Use Framework Plan (or final document) and policies within relevant local planning schemes</li> <li>Functional concept plans for the future use of each site, prepared with input from relevant councils, land managers, public asset owners and stakeholders (in the case of formal sporting uses being replaced)</li> <li>A program identifying the timing and scope of works to be undertaken to provide appropriate or upgraded facilities to provide like-for-like facilities or to meet enhanced user needs beyond like-for-like status. This must identify temporary and permanent land use allocation. Identification of committed proposals to be provided by the Project to enhance the natural values of open space to be provided for conservation or passive recreation, including tree planting works, river bank improvements, water management upgrades and the like and complementary proposals to be achieved by others for this land.</li> </ul> <p><del>The definition of the public open space required for the Project (noting that this will not include land within a Road Zone).</del></p> <p><del>The identification of options to acquire private land or re-purpose land in public ownership for use as public open space. This will include:</del></p> <p><del>1 The assessment of the suitability of the land for public open space</del></p> <p><del>2 A general plan for the future use of the land (e.g. active open space, conservation land etc.)</del></p> <p><del>A program identifying the timing of the acquisition or re-purposing of the identified new public open space sites and the process to be used to ensure fair procedures with the aim of completing the acquisition/re-purposing and development program by the completion of construction of the Project.</del></p>	Design, construction
<b>12. Landscape and Visual (LV)</b>			
<p>Planning &amp; Environment Act 1987</p> <p>Australian Standards AS 4282-1997 Control of the obtrusive effects of outdoor lighting</p>	LV1	<p><b>Design to be in accordance with the Urban Design Strategy</b></p> <p>Urban Design and Landscape Plans must be developed and implemented for permanent above-ground buildings or structures (excluding preparatory buildings and works) in accordance with the North East Link Project – Incorporated Document. The design response must be in accordance with the North East Link Urban Design Strategy and, to the extent practicable:</p> <ul style="list-style-type: none"> <li>Avoid or minimise landscape and visual, overlooking, and shading (with reference to EPR LP4) impacts in extent, duration and intensity</li> <li>Maximise opportunities for enhancement of public and private receptors including public amenity, open space and facilities, and heritage places <del>by resulting from</del> the project <del>including by facilitating value add/capture opportunities.</del></li> <li>Respond to opportunities and constraints identified in an Urban Design Framework Plan for key interchanges, activity centres and interfaces identified in the Incorporated Document (where applicable).</li> <li>Identify residential areas with the potential for high visual impact and develop targeted design options to avoid or minimise amenity impacts on these areas, including as a result of the proposed noise walls.</li> <li>Detailed design to ensure landmark elements balance visual impact with minimal overshadowing</li> </ul>	Design
	LV2	<p><b>Minimise landscape and visual impacts during construction</b></p> <p>Temporary and construction works <del>are to</del> must be located designed and carried out in accordance with the <del>Construction Compound Plan to be approved under the Incorporated Document and the</del> Urban Design Strategy guidance on using design to help manage construction impacts. Areas disturbed by temporary and construction works <del>must are to</del> be reinstated to the satisfaction of the relevant land manager, waterway manager and any relevant public asset owners.</p> <p><del>Design of acoustic sheds, used during construction, to contribute to the image and identity of the area.</del></p> <p>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.</p> <p>Implement landscaping enhancement <del>including early tree planting</del> (as part of permanent works) prior to construction works commencing, where practicable.</p>	Design, construction
	LV3	<p><b>Minimise construction lighting impacts</b></p> <p>Develop and implement <del>effective</del> measures to minimise light spillage and glare during construction <del>including from vehicles and equipment</del> to protect the amenity of adjacent neighbourhoods, parks, community facilities and any known significant native fauna habitat to the extent practicable. <del>Such measures must have regard to the content of guidelines or Australian Standards pertaining to outdoor lighting and best available technology.</del></p>	Design, construction
	LV4	<p><b>Minimise operation lighting impacts and maximise operational lighting benefits for open space</b></p> <p>Design and install lighting used during operation of permanent structures and <del>resulting from the orientation of all permanent structures (including from vehicle headlights)</del> in accordance with relevant standards, including but not limited to <del>relevant guidelines and Australian Standards pertaining to outdoor lighting and the protection of beneficial uses AS 4282-1997 Control of the obtrusive effects of outdoor lighting.</del></p>	Design, operation

		Design and install lighting to minimise light spill and disturbance to significant fauna sites (eg, including the Grey-headed Flying-fox colony at Yarra Bend, wetlands and waterways immediately adjacent to roadways). Provide sensitively designed lighting to shared user paths and open spaces to provide improved safety for users without causing unreasonable effects on residential amenity or environmental and landscape values. Designs must consider Crime Prevention Through Environmental Design, including effects on safe movements of pedestrians and cyclists; including within undercrofts, bicycle and pedestrian tunnels and open spaces areas							
<b>13. Noise and Vibration (NV)</b>									
State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1) Australian Standards AS 2187.2, Explosives – Storage and use – Use of explosives Australian Standard 2436 2010 Guide to Noise Control on Construction, Maintenance and Demolition Site (reconfirmed 2016) VicRoads Road Design Note RDN 6-1 Interpretation and application of VicRoads traffic noise reduction policy 2005 VicRoads Traffic Noise Measurement Requirements for Acoustic Consultants – September 2011 EPA Publications: <ul style="list-style-type: none"> <li>480 Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites</li> <li>1254 Noise Control Guidelines</li> </ul> New South Wales Interim Construction Noise Guideline (ICNG) (2009) New South Wales Roads and Maritime Services Construction Noise and Vibration Guideline (CNVG) (2016)	NV1	<p><b>Achieve traffic noise objectives</b></p> <p>Design <b>and</b> construct <b>and maintain</b> the works to meet the following <math>L_{A10}</math> traffic noise objectives.</p> <table border="1"> <thead> <tr> <th>Aspect</th> <th>External traffic noise levels</th> </tr> </thead> <tbody> <tr> <td>External traffic noise levels</td> <td> <p>(a) Traffic noise from North East Link Project Roads* must be no greater than:</p> <ul style="list-style-type: none"> <li>63 dBA (L10,18hr) measured between 6 am and midnight at Category A buildings**</li> <li>63 dBA (L10, 12hr) measured between 6 am and 6 pm at Category B buildings**.</li> </ul> <p>(b) For Category A and Category B buildings on non-Project Roads which:</p> <ul style="list-style-type: none"> <li>Abut the North East link project roads, or directly intersect with North East Link project roads, and</li> <li>where total traffic noise for the design year and with Project exceeds the thresholds listed in paragraph (a).</li> </ul> <p>The combined noise from North East Link Project Roads and non-Project Roads must not be more than 2 dBA higher than the predicted traffic noise level under the design year 'do nothing' scenario. <b>Intersecting n</b>Non-Project Roads must be modelled for a distance of 100 m from the intersection with North East Link Project Roads or to the first traffic intersection (whichever is the lesser).</p> <p>(c) Night-time traffic noise for category A buildings must meet the WHO 2009 interim target of LAeq night 55dB when adjusted to Australian conditions as per the EES Technical Appendix C i.e be no greater than 58dB LAeq 8hr (including façade correction). The 8hour time period is to be between 2200-0600hrs as consistent with the Better Apartment Design Standards.</p> </td> </tr> <tr> <td>Applies at</td> <td> <p>The noise criteria in paragraphs (a) and (b) above are to apply <b>at all levels to the lowest habitable level</b> of Category A buildings and Category B buildings at both the year of opening and 20 10 years thereafter <b>(the design year)</b>. Traffic noise mitigation measures must be maintained throughout this period. For the purposes of this EPR, Category A buildings and Category B buildings to be considered are those that are either existing or known to have planning approval prior to exhibition of the North East Link Environment Effects Statement.</p> <p>Where external traffic noise cannot be mitigated through project design solutions to meet the criteria outlined in paragraphs (a), <b>and</b> (b) <b>and</b> (c), at-property treatments <b>may will</b> be required <b>to ensure that internal noise levels achieve the following:</b></p> <p>35dBA for bedrooms assessed as an LAeq, 8 h from 10pm -6am 40dBA for living areas assessed as LAeq, 16h from 6am-10pm <b>an equivalent internal level of attenuation is provided to the building.</b></p> <p>At-property treatments would be undertaken with reference to section 7.3 of the NSW Road and Maritime Services document 'Noise Mitigation Guidelines 2015 – Roads and Maritime Services', and in consultation with the owner of the relevant building. In circumstances where at-property treatments are proposed, the Independent Environmental Auditor must review the project design solutions to confirm that the criteria outlined in paragraphs (a), <b>and</b> (b) <b>and</b> (c), could not be achieved by the adoption of reasonable and feasible detailed design measures.</p> </td> </tr> </tbody> </table> <p>* Project Roads are defined to be the M80 Ring Road (east of Plenty Road), the Greensborough Bypass (west of the Plenty River bridge and up to the M80 interchange with North East Link), the upgrade of the Eastern Freeway (between Hoddle Street and Springvale Road) and the new North East Link freeway (connecting the M80 Ring Road to the Eastern Freeway), including all access ramps.</p> <p>** Category A Buildings and Category B Buildings means:</p> <ul style="list-style-type: none"> <li>Category A Buildings – Residential dwellings, aged persons homes, hospitals, motels, caravan parks and other buildings of a residential nature</li> <li>Category B Buildings – Schools (including buildings within the Carey Sports Complex), kindergartens, libraries and other noise-sensitive community buildings.</li> </ul> <p>*** If a resident of a dwelling advises NELP that they consider their residence to be noise affected, NELP must assess external and internal noise levels against the above criteria. If the external noise levels do not comply and mitigation is not feasible then internal levels as above must be achieved. If the internal levels are not achieved then NELP must undertake at property treatment to achieve the required internal noise levels</p>	Aspect	External traffic noise levels	External traffic noise levels	<p>(a) Traffic noise from North East Link Project Roads* must be no greater than:</p> <ul style="list-style-type: none"> <li>63 dBA (L10,18hr) measured between 6 am and midnight at Category A buildings**</li> <li>63 dBA (L10, 12hr) measured between 6 am and 6 pm at Category B buildings**.</li> </ul> <p>(b) For Category A and Category B buildings on non-Project Roads which:</p> <ul style="list-style-type: none"> <li>Abut the North East link project roads, or directly intersect with North East Link project roads, and</li> <li>where total traffic noise for the design year and with Project exceeds the thresholds listed in paragraph (a).</li> </ul> <p>The combined noise from North East Link Project Roads and non-Project Roads must not be more than 2 dBA higher than the predicted traffic noise level under the design year 'do nothing' scenario. <b>Intersecting n</b>Non-Project Roads must be modelled for a distance of 100 m from the intersection with North East Link Project Roads or to the first traffic intersection (whichever is the lesser).</p> <p>(c) Night-time traffic noise for category A buildings must meet the WHO 2009 interim target of LAeq night 55dB when adjusted to Australian conditions as per the EES Technical Appendix C i.e be no greater than 58dB LAeq 8hr (including façade correction). The 8hour time period is to be between 2200-0600hrs as consistent with the Better Apartment Design Standards.</p>	Applies at	<p>The noise criteria in paragraphs (a) and (b) above are to apply <b>at all levels to the lowest habitable level</b> of Category A buildings and Category B buildings at both the year of opening and 20 10 years thereafter <b>(the design year)</b>. Traffic noise mitigation measures must be maintained throughout this period. For the purposes of this EPR, Category A buildings and Category B buildings to be considered are those that are either existing or known to have planning approval prior to exhibition of the North East Link Environment Effects Statement.</p> <p>Where external traffic noise cannot be mitigated through project design solutions to meet the criteria outlined in paragraphs (a), <b>and</b> (b) <b>and</b> (c), at-property treatments <b>may will</b> be required <b>to ensure that internal noise levels achieve the following:</b></p> <p>35dBA for bedrooms assessed as an LAeq, 8 h from 10pm -6am 40dBA for living areas assessed as LAeq, 16h from 6am-10pm <b>an equivalent internal level of attenuation is provided to the building.</b></p> <p>At-property treatments would be undertaken with reference to section 7.3 of the NSW Road and Maritime Services document 'Noise Mitigation Guidelines 2015 – Roads and Maritime Services', and in consultation with the owner of the relevant building. In circumstances where at-property treatments are proposed, the Independent Environmental Auditor must review the project design solutions to confirm that the criteria outlined in paragraphs (a), <b>and</b> (b) <b>and</b> (c), could not be achieved by the adoption of reasonable and feasible detailed design measures.</p>	Design, operation
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	NV NEW	<p>Noise at public open space and school recreation grounds</p> <p>Predicted noise levels at existing public open space and school grounds detailed in updated noise modelling for the final design and as-built construction of the Project must not exceed the predicted design year noise levels +2dB detailed in the EES -Technical Appendix C.</p> <p>Noise monitoring at appropriate locations must be performed post construction to verify that predicted levels have been achieved. Monitoring must be performed 10 years and 20 years after Project opening.</p>	Design						
New South Wales Roads and Maritime Services Noise Mitigation Guideline (2015)	NV2	<p><b>Monitor traffic noise</b></p> <p>Traffic noise monitoring must be carried out for at least the following time periods:</p>	Design, operation						

<p>ASHRAE Chapter 48 Sound and Vibration Control Standards German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) British Standard BS6472-1:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting.</p>	<ul style="list-style-type: none"> <li>• Baseline traffic noise must be re-measured after project award and prior to construction works</li> <li>• Traffic noise must be re-measured within six months of project opening during normal traffic flows (outside school or public holidays). For the purpose of determining compliance, the measurements conducted after project opening must be adjusted to the 10 year traffic flows.</li> <li>• Traffic noise must be re-measured 10 years <b>and 20 years</b> after project opening</li> </ul> <p>All traffic noise monitoring must be undertaken in accordance with the VicRoads Traffic Noise Measurement Requirements for Acoustic Consultants – September 2011, to verify conformance with the external traffic noise objectives set out in EPR NV1. The adequacy of the monitoring program is to be verified by the Independent Environmental Auditor.</p> <p>Remedial action must be taken as soon as practicable in the event that the measured traffic noise levels demonstrate that the external traffic noise objectives set out in EPR NV1 are not met.</p>																											
	<p>NV3 <b>Minimise construction noise impacts to sensitive receptors</b></p> <p>Construction noise and vibration must be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) required by EPR NV4.</p> <p>Non-residential sensitive receptors</p> <p>For sensitive land uses (based on AS/NZS 2107:2016) implement management actions as per EPR NV4 if construction noise is predicted to or does exceed the internal <b>and or</b> external noise management levels set out in the table below, and a noise sensitive receptor is, or is predicted to be, adversely impacted. If construction exceeds the noise management levels below, in determining whether a noise sensitive receptor is, or is predicted to be, adversely impacted:</p> <ul style="list-style-type: none"> <li>• Consider the duration of construction noise</li> <li>• Consider the existing ambient noise levels</li> <li>• Consult with the owner or operator of the noise sensitive receptor</li> <li>• Consider any specific acoustic requirements of land uses listed below to determine whether a noise sensitive receptor is adversely impacted.</li> </ul> <table border="1"> <thead> <tr> <th>Land use</th> <th>Construction noise management level, <math>L_{Aeq(15\ min)}</math> applies when properties are in use</th> </tr> </thead> <tbody> <tr> <td>Classrooms in schools and other educational institutions</td> <td>Internal noise level 45 dB(A)</td> </tr> <tr> <td>Healthcare facilities including hospital wards and operating theatres, and rehabilitation centres</td> <td>Internal noise level 45 dB(A)</td> </tr> <tr> <td>Places of worship</td> <td>Internal noise level 45 dB(A)</td> </tr> <tr> <td>Active recreation areas characterised by sporting activities and activities which generate their own noise, making them less sensitive to external noise intrusion</td> <td>External noise level 65 dB(A)</td> </tr> <tr> <td>Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation <i>School grounds used for sport and associated teaching purposes are to be considered as passive recreation areas</i></td> <td>External noise level 60 dB(A)</td> </tr> <tr> <td>Community centres</td> <td>Depends on the intended use of the centre. 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All reasonable strategies to mitigate the impacts of such Unavoidable Works must be applied.</p> <table border="1"> <thead> <tr> <th>Time of day</th> <th>Construction noise guideline targets</th> </tr> </thead> <tbody> <tr> <td>Normal working hours: 7 am – 6 pm Monday to Friday 7 am – 1 pm Saturday</td> <td>Noise affected: Background <math>L_{A90}+10</math> dB Highly noise affected: 75 dB(A) Source: NSW Interim Construction Noise Guideline (ICNG) Chapter 4.1.1 Table 2 The noise affected level represents the point above which there may be some community reaction to noise The highly noise affected level represents the point above which there may be strong community reaction to noise.</td> </tr> <tr> <td>Weekend/evening work hours:</td> <td>Noise level at any residential premises not to exceed background noise (<math>L_{A90}</math>) by:</td> </tr> </tbody> </table>	Land use	Construction noise management level, $L_{Aeq(15\ min)}$ applies when properties are in use	Classrooms in schools and other educational institutions	Internal noise level 45 dB(A)	Healthcare facilities including hospital wards and operating theatres, and rehabilitation centres	Internal noise level 45 dB(A)	Places of worship	Internal noise level 45 dB(A)	Active recreation areas characterised by sporting activities and activities which generate their own noise, making them less sensitive to external noise intrusion	External noise level 65 dB(A)	Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation <i>School grounds used for sport and associated teaching purposes are to be considered as passive recreation areas</i>	External noise level 60 dB(A)	Community centres	Depends on the intended use of the centre. 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	<p>6 pm – 10 pm Monday to Friday 1 pm – 10 pm Saturday 7 am – 10 pm Sunday and public holidays</p>	<ul style="list-style-type: none"> <li>• 10 dB(A) or more for up to 18 months</li> <li>• 5 dB(A) or more after 18 months</li> </ul> <p>Source: EPA Publication 1254 Section 2</p> <hr/> <p>Night period: 10 pm – 7 am Monday to Sunday</p> <p>Noise inaudible within a habitable room of any residential premises Source: EPA Publication 1254 Section 2 and EPA Publication 480 Section 5</p> <p>Note: Where any reference is made to the rating background level (RBL) or background <math>L_{A90}</math>; the 'average background' over the assessment period as per Victorian noise policy practices is to be used. This applies to all receptors and all time periods.</p>	
	<p><u>Unavoidable Works</u> Unavoidable Works must be verified by the Independent Environmental Auditor for each instance they are undertaken, as per EPR NV4 and <b>may</b> include the following:</p> <ul style="list-style-type: none"> <li>• The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads</li> <li>• Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm</li> <li>• Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours</li> <li>• Tunnelling works including mined excavation elements and the activities that are required to support tunnelling works (ie spoil treatment facilities)</li> <li>• Road and rail occupations or works that would cause a major traffic hazard</li> <li>• Other works where a contractor demonstrates and justifies a need to operate outside normal working hours and exceed the noise guideline targets such as work that once started cannot practically be stopped.</li> </ul>		
NV4	<p><b>Implement a Construction Noise and Vibration Management Plan (CNVMP) to manage noise and vibration impacts</b> Prepare, implement and maintain a Construction Noise and Vibration Management Plan (CNVMP) in consultation with EPA Victoria, <b>and</b> relevant councils <b>and</b> relevant stakeholders. The CNVMP must comply with and address the Noise and Vibration EPRs, be informed by the noise modelling and monitoring results and must include (but not be limited to):</p> <ul style="list-style-type: none"> <li>• <b>Identification and assessment of noise and vibration sensitive receptors along the project alignment, including but not limited to :</b> <ul style="list-style-type: none"> <li>– habitat for listed threatened fauna likely to be impacted by the project</li> <li>– buildings used for shop, gallery, commercial, office or industrial purposes including Bulleen Art and Garden and the Heide Museum of Modern Art</li> <li>– school buildings and school grounds</li> <li>– Residential buildings</li> </ul> </li> <li>• <del>Identification and assessment of noise and vibration sensitive receptors along the project alignment, including habitat for listed threatened fauna likely to be impacted by the project, and the Heide Museum of Modern Art.</del></li> <li>• Construction noise and vibration targets as per EPRs NV3, NV5, NV8, NV9, NV10, NV11 and NV12, including any details of conversions between alternative metrics</li> <li>• Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities that have the potential to generate airborne noise and/or surface vibration impacts on surrounding sensitive receivers</li> <li>• How construction noise (including truck haulage) and vibration would be minimised (see EPR T2)</li> <li>• A requirement for preliminary tests using the actual equipment to validate modelling for vibration and regenerated noise and review, with predictions to be remodelled as necessary and confirm prevention/mitigation/remediation measures confirmed</li> <li>• Management actions and notification and mitigation measures to be implemented with reference to the Appendix B and Appendix C of the New South Wales Roads and Maritime Services Construction Noise and Vibration Guideline 2016 (CNVG)</li> <li>• Any processes and measures to be implemented as part of the Communications and Community Engagement Plan including managing matters of interest raised by key stakeholders through CCEP processes, and measures concerning complaints management (see EPR SC2)</li> <li>• Requirements to assess and manage vibration impacts to scientific or medical establishments to the higher of ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook), or manufacturers equipment levels (unless by agreement with occupant)</li> <li>• Measures to ensure effective monitoring of noise and vibration associated with construction with consideration to the construction noise and vibration targets</li> <li>• Measures to minimise noise and vibration impacts from temporary traffic diversions and altered access to parking facilities</li> <li>• The Unavoidable Works <del>(as defined in NV3)</del> that would be undertaken, including their location, timing and duration. The CNVMP must either include a clear rationale for defining works or a list of the type of planned works that constitute Unavoidable Works and response strategies to mitigate the impacts of these Unavoidable Works, consistent with EPA Victoria Publication 1254 Noise Control Guidelines and with reference to Appendix B and Appendix C of the CNVG. The Independent Environmental Auditor must verify that the proposed Unavoidable Works meet the definition of Unavoidable Works <del>(as defined in NV3)</del> for each instance they are undertaken. Details of Unavoidable Works must be made publicly available. For emergency Unavoidable Work, a rationale must be provided to the satisfaction of the Independent Environmental Auditor as soon as practicable.</li> <li>• <b>Noise from construction works during weekend/evening work hours and the night period must meet the weekend/evening work hours and night period noise guideline targets unless they are unavoidable works verified by the Independent Environmental Auditor. All reasonable measures must be implemented to mitigate the impacts of such unavoidable works. A clear framework for managing Unavoidable Work must be developed and include noise level thresholds and details of mitigation measures. The framework must be approved by the Independent Environmental Auditor.</b></li> </ul> <p>The CNVMP must be reviewed (including external stakeholder review) and updated as appropriate on a six monthly basis, and verified by the Independent Environmental Auditor.</p>		Construction
NEW NV	<p><b>Monitoring of Ongoing performance of operational traffic noise mitigation measures</b> Permanent noise monitoring stations must be established in representative locations to enable the ongoing real time monitoring of operational traffic noise to demonstrate that the operational traffic noise limits in NV1 continue to be met for 20 years after project opening. If operational traffic noise limits in NV1 are not being met then mitigating works must be undertaken and completed within 6 months after the non-compliance is detected to the satisfaction of the Minister of the Crown at that time responsible for the administration or the Planning and Environment Act 1987 or any later similar enactment. Where open graded asphalt is used and is relied on to achieve compliance with noise limits the acoustic performance of the OGA must be assessed at least once in each 12 months to ensure that it continues to</p>		Operation

	<p>reduce operational traffic noise to the project traffic noise objectives in NV1.</p> <p>NELP interactive noise tool</p> <p>The following information is to be made freely available on a publicly accessible website as interactive layers:</p> <ul style="list-style-type: none"> <li>Existing (pre-Project) noise levels</li> <li>Final operational road traffic noise contours for the Project;</li> <li>Operational noise criteria for the Project;</li> <li>Operational noise monitoring data for the Project.</li> </ul> <p>The maps are to be interactive so as to enable the public to locate their position on a map, identify the operational noise criteria and data relevant to their location and submit a query or complaint to NELP online.</p>																									
NV5	<p><b>Establish vibration guidelines to protect utility assets</b></p> <p>Prior to construction undertake condition assessments of above and below ground utility assets (EPR GM3) and consult with asset owners to establish and agree construction vibration guidelines to maintain asset integrity. In all cases the asset owner’s criteria takes precedence.</p> <p>Where construction vibration guidelines are not proposed by the asset owner, reference should be made to the relevant sections of German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) for guideline assessment procedures for buried pipework or underground infrastructure. The integrity of the asset should be reviewed and assessed (by the contractor, in conjunction with the asset owner) to confirm these values are appropriate. If necessary, based on this assessment, limits must be reduced to the level necessary to maintain asset integrity.</p> <p>Monitor vibration levels during construction to demonstrate compliance with agreed vibration guidelines. Identify contingency measures to be implemented if guidelines are not met. Where necessary rectify any defects that are attributable to the project.</p> <p>An overview of the key vibration guidelines values is presented below. In all cases, the supporting documentation within the Standard which describes, clarifies and sometimes modifies the tables below must be considered.</p> <p>Table 2 Guideline values for <math>v_i</math>, max, for evaluating the effects of short-term vibration on the lining of underground cavities</p> <table border="1"> <thead> <tr> <th>Line</th> <th>Lining material</th> <th>Guideline values for <math>v_i</math>, max in mm/s perpendicular to lining surface</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Reinforced or sprayed concrete, tubbing segments</td> <td>80</td> </tr> <tr> <td>2</td> <td>Concrete, stone</td> <td>60</td> </tr> <tr> <td>3</td> <td>Masonry</td> <td>40</td> </tr> </tbody> </table> <p>Note: The guideline values were measured during nearby mine blasting operations and apply only to the lining of underground structures, but not to any associated installations.</p> <p>Table 3 Guideline values for <math>v_i</math>, max, for evaluating the effects of short-term vibration on buried pipework</p> <table border="1"> <thead> <tr> <th>Line</th> <th>Lining material</th> <th>Guideline values for <math>v_i</math>, max in mm/s perpendicular to lining surface</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Steel, welded</td> <td>100</td> </tr> <tr> <td>2</td> <td>Vitrified clay, concrete, reinforced concrete, prestressed concrete, metal (with or without flange)</td> <td>80</td> </tr> <tr> <td>3</td> <td>Masonry, plastics</td> <td>50</td> </tr> </tbody> </table>	Line	Lining material	Guideline values for $v_i$ , max in mm/s perpendicular to lining surface	1	Reinforced or sprayed concrete, tubbing segments	80	2	Concrete, stone	60	3	Masonry	40	Line	Lining material	Guideline values for $v_i$ , max in mm/s perpendicular to lining surface	1	Steel, welded	100	2	Vitrified clay, concrete, reinforced concrete, prestressed concrete, metal (with or without flange)	80	3	Masonry, plastics	50	Construction
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NV6	<p><b>Design permanent tunnel ventilation system and relevant fixed infrastructure to meet EPA requirements for noise</b></p> <p>Design and <del>construct</del> <del>implement</del> the permanent tunnel ventilation system and relevant fixed infrastructure that is subject to State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1) to achieve compliance with SEPP N-1 (or any later equivalent) and in accordance with the Works Approval.</p> <p>Where SEPP N-1 (or any later equivalent) does not apply, design and implement the permanent tunnel ventilation system to comply with the internal Satisfactory Recommended Design Sound Levels as defined in AS/NZS 2107 for relevant affected spaces. <del>teaching purposes.</del></p> <p>If the existing internal background noise level within any identified relevant already exceeds the Maximum Recommended Design Sound Level in AS/NZS 2107, then noise from the fixed plant associated with the Project must not exceed the existing background levels within these spaces.</p> <p><del>Provide detailed design of the tunnel ventilation system to the satisfaction of EPA Victoria prior to commencement of the works permitted by the Works Approval.</del></p>	Design, construction																								
NV7	<p><b>Monitor noise from tunnel ventilation system and relevant fixed infrastructure</b></p> <p>Measure noise from the permanent tunnel ventilation system and relevant fixed infrastructure that is subject to State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1) on commencing road operation and monitor noise from the tunnel ventilation system post opening of the North East Link, as agreed with EPA Victoria, to verify compliance with SEPP N-1 (or any later equivalent) and the EPA Victoria Licence. Identify and implement contingency measures to be implemented if noise level limits are not met.</p>	Operation																								
NV8	<p><b>Minimise construction vibration impacts on amenity</b></p> <p>Implement management actions if the following guideline target levels for vibration from construction activity to protect human comfort of occupied buildings (including heritage buildings) are not achieved (levels are calculated from the British Standard BS6472-1:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting.).</p>	Construction																								

Type of space occupancy		Vibration Dose Values (m/s <sup>1.75</sup> )			
		Day (7am to 10 pm)		Night (10 pm to 7am)	
		Preferred Value	Maximum Value	Preferred Value	Maximum Value
Residential		0.2	0.4	0.1	0.2
Offices, schools, educational institutions, places of worship		0.4	0.8	0.4	0.8
Workshops		0.8	1.6	0.8	1.6

Notes

1 The Guideline Targets are non-mandatory; they are goals that should be sought to be achieved through the application of practicable mitigation measures. If exceeded then management actions would be required.

2 The Vibration Dose Values may be converted to Peak Particle Velocities within a noise and vibration construction management plan.

3 For the purpose of this EPR, the guideline target levels for 'offices, schools, educational institutions, places of worship' also apply to the Heide Museum of Modern Art and the outdoor sculpture exhibition area at Heide Museum of Modern Art.

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NV9	<p><b>Minimise construction vibration impacts on structures</b></p> <p>Construction vibration targets for structures based on German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) must be adopted. All sections of the German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) standard apply, noting the guideline levels detailed in Section 5 and Section 6 (and any references sections). An overview of the key vibration guidelines values is presented below. In all cases, the supporting documentation within the Standard which describes, clarifies and sometimes modifies the tables below must be considered.</p> <p>Table 1 — Guideline values for vibration velocity, <math>v_i</math>, max, for evaluating the effects of short-term vibration on structures</p> <table border="1"> <thead> <tr> <th colspan="2">Type of structure</th> <th colspan="5">Guideline values for <math>v_i</math>, max in mm/s</th> </tr> <tr> <th rowspan="2">Column Line</th> <th rowspan="2">1</th> <th colspan="3">Foundation, all directions, <math>i = x, y, z</math>, at a frequency of</th> <th>Topmost floor, horizontal direction, <math>i = x, y</math></th> <th>Floor slabs, vertical direction, <math>i = z</math></th> </tr> <tr> <th>1 Hz to 10 Hz</th> <th>10 Hz to 50 Hz</th> <th>50 Hz to 100 Hz (a)</th> <th>All frequencies</th> <th>All frequencies</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Buildings used for commercial purposes, industrial buildings, and buildings of similar design</td> <td>20</td> <td>20 to 40</td> <td>40 to 50</td> <td>40</td> <td>20</td> </tr> <tr> <td>2</td> <td>Residential buildings and buildings of similar design and/or occupancy</td> <td>5</td> <td>5 to 15</td> <td>15 to 20</td> <td>15</td> <td>20</td> </tr> <tr> <td>3</td> <td>Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (eg listed buildings)</td> <td>3</td> <td>3 to 8</td> <td>8 to 10</td> <td>8</td> <td>20 (b)</td> </tr> </tbody> </table> <p>Note: Even if guideline values as in line 1, columns 2 to 5, are complied with, minor damage cannot be excluded.</p> <p>(a) At frequencies above 100 Hz, the guideline values for 100 Hz can be applied as minimum values.</p> <p>(b) Paragraph 2 of 5.1.2 must be observed.</p>	Type of structure		Guideline values for $v_i$ , max in mm/s					Column Line	1	Foundation, all directions, $i = x, y, z$ , at a frequency of			Topmost floor, horizontal direction, $i = x, y$	Floor slabs, vertical direction, $i = z$	1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz (a)	All frequencies	All frequencies	1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40	20	2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20	3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (eg listed buildings)	3	3 to 8	8 to 10	8	20 (b)	Construction
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Table 4 — Guideline values for $v_i$ , max, for evaluating the effects of long-term vibration on buildings			
Type of building		Guideline values for $v_i$ , max, in mm/s	
Column Line	1	Topmost floor, horizontal direction, all frequencies	Floor slab, vertical direction, all frequencies
		2	3
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar	10	10



		design																			
	2	Residential buildings and buildings of similar design and/or occupancy		5	10																
	3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (eg listed buildings)		2.5	10 (a)																
	<p>Note: Even if guideline values as in line 1, column 2, are complied with, minor damage cannot be ruled out.                  (a) Section 6.1.2 must be observed.                  Vibration levels above apply to all works, including unavoidable works as defined in NV3.</p>																				
	NV10	<p><b>Minimise impacts from ground-borne (internal) noise</b>                  Implement management actions in consultation with potentially affected land owners to protect amenity at residences where the following ground borne noise guideline targets based on Section 4.2 of the New South Wales Interim Construction Noise Guidelines are exceeded during construction.</p> <table border="1"> <thead> <tr> <th>Time of Day</th> <th>Internal noise level measured at the centre of the most affected habitable room</th> </tr> </thead> <tbody> <tr> <td>Evening (6 pm to 10 pm)</td> <td><math>L_{Aeq(15 \text{ minute})} = 40 \text{ dBA}</math></td> </tr> <tr> <td>Night (10 pm to 6 am)</td> <td><math>L_{Aeq(15 \text{ minute})} = 35 \text{ dBA}</math></td> </tr> </tbody> </table> <p>Notes                  1 Levels are only applicable when ground borne noise levels are higher than airborne noise levels.                  2 Management actions include community consultation to determine acceptable level of disruption and provision of respite accommodation in some circumstances.                  3 Noise levels above apply to all works, including unavoidable works as defined in NV3.</p>			Time of Day	Internal noise level measured at the centre of the most affected habitable room	Evening (6 pm to 10 pm)	$L_{Aeq(15 \text{ minute})} = 40 \text{ dBA}$	Night (10 pm to 6 am)	$L_{Aeq(15 \text{ minute})} = 35 \text{ dBA}$		Construction									
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	NV11	<p><b>Minimise amenity impacts from blast vibration</b>                  Implement management actions if the following vibration values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.</p> <table border="1"> <thead> <tr> <th>Category (as defined in AS 2187.2-2006)</th> <th>Type of blasting operations</th> <th>Peak component particle velocity (mm/s)</th> </tr> </thead> <tbody> <tr> <td>Sensitive site</td> <td>More than 20 blasts</td> <td>5 mm/s for 95% blasts per year 10 mm/s maximum (unless by agreement with occupier)</td> </tr> <tr> <td>Sensitive site</td> <td>Less than 20 blasts</td> <td>10 mm/s maximum (unless by agreement with occupier)</td> </tr> <tr> <td>Non-sensitive site (with occupants)</td> <td>All blasting</td> <td>25 mm/s maximum value (unless by agreement with occupier).</td> </tr> <tr> <td>Scientific equipment</td> <td>All blasting</td> <td>Existing ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook) (whichever is the higher) or manufacturers equipment levels (unless by agreement with occupier)</td> </tr> </tbody> </table>			Category (as defined in AS 2187.2-2006)	Type of blasting operations	Peak component particle velocity (mm/s)	Sensitive site	More than 20 blasts	5 mm/s for 95% blasts per year 10 mm/s maximum (unless by agreement with occupier)	Sensitive site	Less than 20 blasts	10 mm/s maximum (unless by agreement with occupier)	Non-sensitive site (with occupants)	All blasting	25 mm/s maximum value (unless by agreement with occupier).	Scientific equipment	All blasting	Existing ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook) (whichever is the higher) or manufacturers equipment levels (unless by agreement with occupier)		
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	NV12	<p><b>Minimise amenity impacts from blast overpressure</b>                  Implement management actions if the following overpressure values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.</p> <table border="1"> <thead> <tr> <th>Category (as defined in AS 2187.2-2006)</th> <th>Type of blasting operations</th> <th>Peak Overpressure Value (dBL)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Sensitive Site</td> <td>More than 20 blasts</td> <td>115 dBL for 95% blasts 120 dBL maximum (unless by agreement with occupier)</td> </tr> <tr> <td>Less than 20 blasts</td> <td>120 dBL for 95% blasts 125 dBL maximum (unless by agreement with occupier)</td> </tr> <tr> <td>Occupied non-sensitive sites such as factories and commercial premises</td> <td>All blasting</td> <td>125 dBL maximum (unless by agreement with occupier) For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturers specification or levels that can be shown to adversely affect the equipment operation</td> </tr> </tbody> </table>			Category (as defined in AS 2187.2-2006)	Type of blasting operations	Peak Overpressure Value (dBL)	Sensitive Site	More than 20 blasts	115 dBL for 95% blasts 120 dBL maximum (unless by agreement with occupier)	Less than 20 blasts	120 dBL for 95% blasts 125 dBL maximum (unless by agreement with occupier)	Occupied non-sensitive sites such as factories and commercial premises	All blasting	125 dBL maximum (unless by agreement with occupier) For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturers specification or levels that can be shown to adversely affect the equipment operation		Construction				
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	NV13	<p><b>Noise mitigation – noise walls</b>                  Construction of permanent noise attenuation must, where feasible, be installed in advance of adjacent works.                  Where the ultimate wall cannot be constructed prior to demolition of the existing wall and noise sensitive premises will be exposed to significantly increased traffic noise for an extended period, install temporary noise walls where practicable.</p>				Construction															
	NV14	<p><b>Reduce impacts from engine brake noise</b>                  Measures to encourage heavy vehicle drivers to reduce use of engine brakes must be considered and implemented, where practicable.</p>				Design, construction, operation															
<b>14. Social and Community (SC)</b>																					
Planning and Environment Act 1987	SC1	<p><b>Reduce community disruption and adverse amenity impacts</b>                  Design and construct the project to reduce disruption to residences, community infrastructure facilities and open space from direct acquisition or temporary occupation, as far as is practicable to the</p>				Design, construction															

<p>Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations.</p>	<p>SC NEW1</p>	<p>maximum extent possible to preserve acceptable levels of amenity.</p> <p>Manage impacts of land acquisition and occupation</p> <p>Where private land is to be permanently acquired or temporarily occupied, the project must will:</p> <ul style="list-style-type: none"> <li>• Minimise the extent of the acquisition or the extent or duration of the occupation</li> <li>• Use a case-management approach for project interactions with affected land owners and occupants including appointing a social worker, buyers’ advocate or equivalent to assist households with special needs to manage the transition</li> <li>• Endeavour to reach agreement on the terms for possession of the land including purchasing properties early when identified for permanent acquisition and supported by the landowner</li> <li>• Consider the relative vulnerability and special needs of land owners and occupants.</li> <li>• Communicate likely timing and steps to be taken including updates as relevant.</li> </ul> <p>Return private land not required for permanent project infrastructure to its pre-existing use post-construction as soon as practicable, unless otherwise agreed with the land owner.</p> <p>Where public land is to be permanently acquired or temporarily occupied, the project will:</p> <ul style="list-style-type: none"> <li>• Minimise the extent of the acquisition or the extent or duration of the occupation</li> <li>• Stage works to the maximum extent possible to maintain functionality of the land for all users either within the site or on proximate land, subject to the Relocation and Replacement Plan</li> <li>• Endeavour to reach agreement with the land manager on the terms for possession of the land</li> <li>• Return public land not required for permanent project infrastructure to its pre-existing use post-construction as soon as practicable, including with all relevant reinstatement works, unless otherwise agreed with the land manager.</li> <li>• In the case of public land used for formal active recreation, ensure that impacts are minimised in accordance with SC4.</li> </ul>	<p>Design, construction</p>
	<p>SC2</p>	<p>Implement a Communications and Community Engagement Plan</p> <p>Prior to construction, Before the project starts, 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:</p> <ul style="list-style-type: none"> <li>• A process for identifying community issues and the recording, management and resolution of complaints from affected stakeholders including business owners, community service providers, education providers, public and active transport key user groups and residents, consistent with Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations</li> <li>• Approach to stakeholder identification</li> <li>• Enquiry management and record keeping approach and procedures including making available an attended 24 hour telephone number, postal address, and an email address and publishing these on the project website</li> <li>• Approach to communicating and engaging with the community and potentially affected stakeholders in relation to:             <ul style="list-style-type: none"> <li>– Construction activities including temporary facilities and impacts that may affect the community, businesses or individual stakeholders (eg dust, noise, vibration and light) and relevant mitigation (eg relocations policy)</li> <li>– Changes to transport conditions and relevant mitigation (eg road closures, detours)</li> <li>– Timelines and an outline of works that will affect particular local areas, to be updated to reflect current and anticipated conditions.</li> </ul> </li> <li>• Identifying how stakeholders can access information on environmental performance that is to be made publicly available</li> <li>• Incident and emergency communications, including notification methods and timeframes in the event of a major incident or overrun</li> <li>• Approach and processes to ensure that the workforce has appropriate community awareness and sensitivity including to prevent the workforce from parking in local roads and in public parking in the vicinity of local shopping areas except when frequenting those areas for private purposes.</li> <li>• Innovative communications tools and methods to enhance the project’s ability to effectively communicate and engage with the community and stakeholders including best available technology in addition to conventional means.</li> <li>• Approach to engaging with local schools to ascertain safety requirements (including evacuation opportunities) and to provide education opportunities on project activities.</li> <li>• Approach to making relevant project information available to the community with specific consideration to vulnerable groups (including culturally and linguistically diverse groups) and a responsive process for resolving complaints by vulnerable groups or individuals.</li> <li>• How it will evaluate the effectiveness of the communication and engagement under the Communications and Community Engagement Plan.</li> </ul> <p>The Communications and Community Engagement Plan must consider and where appropriate address matters of interest or concern to the following stakeholders, and provide for the appointment of a dedicated liaison officer (as appropriate):</p> <ul style="list-style-type: none"> <li>• Municipal councils</li> <li>• Recreation, sporting clubs and community groups</li> <li>• Schools and other educational institutions</li> <li>• Potentially affected residents and property owners</li> <li>• Potentially affected business</li> <li>• Other public facilities in proximity</li> <li>• Religious and worship groups</li> <li>• Vulnerable groups</li> <li>• Traditional owners</li> </ul>	<p>Design, construction, operation</p>

		<ul style="list-style-type: none"> <li>Public transport users.</li> </ul>	
	SC3	<p><b>Participate in the Community Liaison Group</b></p> <p>Contractors must participate in the Community Liaison Group (CLG) that has been established and managed by North East Link Project, to facilitate community and stakeholder involvement for the design and construction phases of the project. Participation must include:</p> <ul style="list-style-type: none"> <li>Attendance at meetings</li> <li>Regular reporting of design and construction activities</li> <li>Timely provision of relevant information, including response to issues raised by the group</li> <li>Regular reporting and monitoring of community feedback, impacts and discussion of mitigation measures and their effectiveness.</li> </ul>	Design, construction
	SC4	<p><b>Minimise impacts of displacement of formal active recreation facilities</b></p> <p>The project must be designed and delivered to avoid and minimise displacement of formal active recreation facilities including activities on private land such as schools.</p> <p>Where formal active recreation facilities are displaced by the construction or operation of the project, the project <del>identify relocation opportunities with the objective of accommodating displaced facilities and maintaining the continuity of those formal active recreational activities, except where otherwise agreed with the relevant facility owner. The project will prepare and implement a relocation plan, designed to achieve replacement of displaced facilities at suitable locations within a defined timeframe, to meet this objective.</del> must facilitate the relocation of all such facilities to an acceptable location to enable their continued functionality at a reasonable level of service for those activities (except where otherwise agreed with the relevant facility owner or where other compensation is provided by agreement or under relevant legislation).</p> <p>The Proponent must <del>will</del> work in collaboration with facility operators, local Councils <del>public land managers and</del> and relevant State authorities to <del>prepare and implement a Facilities Relocation Plan. The Plan must:</del></p> <ul style="list-style-type: none"> <li>seek to relocate all formal active recreation facilities to the extent possible before existing facilities are discontinued</li> <li>document measures to be provided by the Proponent to provide suitable replacement facilities at all relocated sites</li> <li>document measures to be provided by the Proponent to restore facilities that have been vacated to the same or higher standard than when the use was discontinued, accounting for identified growth of clubs (where applicable) and for any decline in condition of the facility during the time of disuse. .</li> </ul> <p>consider and provide a suite of reasonable measures to enable the ongoing viability of relevant sporting and recreation clubs affected by displacement and to reduce material disadvantage.</p>	Design, construction, operation
	SC NEW2	<p><b>Minimise impacts on formal active recreation and other facilities</b></p> <p>Where construction or operation activities directly impact formal active recreation facilities or community infrastructure facilities <del>not on public land</del> such as schools, child care centres, and aged care centres, consultation must occur with facility operators, owners and user groups of the facilities to understand and, implement any practical measures that can be taken to avoid or minimise impacts. Such measures <del>must provide for should achieve</del> the continued operation of each facility, with suitable access <del>provision of generally proximate parking comparable to pre-development conditions (where possible),</del> reasonable protection of amenity, <del>and maintenance of the current level and nature of activity,</del> except where otherwise agreed with relevant facility owners.</p>	Design, construction, operation
<b>15. Surface Water (SW)</b>			
Water Act 1989 Conservation, Forests and Lands Act 1987	SW1	<p><b>Discharges and runoff to meet State Environment Protection Policy (Waters)</b></p> <p>Meet the State Environment Protection Policy (Waters) requirements for discharge and run-off from the project, including by complying with the Victorian Stormwater Committee's Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others).</p>	Design, construction, operation
Water Industry Regulations 2006 (Vic) State Environment Protection Policy (Waters) 2018 (Vic)	SW2	<p><b>Design and implement spill containment</b></p> <p>Design and construct the spill containment capacity of the stormwater drainage system for all freeway pavements (including ramps) to manage the risk of hazardous spills from traffic accidents at or prior to every stormwater outlet, to meet AustRoads requirements (Part 5 Drainage – General &amp; Hydrology Considerations). The design and location of spill containment must consider the risk and potential impact of a spill, as well as the effectiveness in reducing the risks associated with a spill on the environment. Develop procedures for freeway roads and ramps to be implemented in response to a hazardous spill. The OEMP must include requirements to maintain spill containment infrastructure and implement associated procedures.</p>	Design, construction, operation
State Environment Protection Policy Prevention and Management of Contaminated Land 2002 (Vic)	SW3	<p><b>Waste water discharges to be minimised and approved</b></p> <p>The Surface Water Management Plan (refer EPR SW5) and OEMP must include requirements and methods for minimising, handling, classifying, treating, disposing and otherwise managing waste water. Any proposed discharge of waste water from the site must be approved by the relevant authority prior to discharges occurring and meet the State Environment Protection Policy (Waters) requirements.</p>	Construction, operation
Victorian WorkCover Authority and Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids DELWP Integrated Water Management Framework for Victoria (September 2017) VicRoads Integrated Water Management Guidelines (June 2013) EPA Publications: 275 (1991) Construction techniques for sediment pollution control	SW4	<p><b>Monitor water quality</b></p> <p>Develop and implement a surface water monitoring program prior to commencement of, and during construction, to assess surface water quality in multiple locations at suitable distances upstream and downstream of works to establish baseline conditions, and enable assessment of construction impacts on receiving waters.</p> <p>The surface water quality monitoring program must be implemented for a period up to three years after commencement of North East Link operation, or a lesser period agreed with the EPA, to assess the discharges and runoff from the project against SEPP requirements and confirm the effectiveness of environmental controls.</p> <p>The monitoring program must be developed in consultation with EPA Victoria and the asset owner/manager and as appropriate with reference to applicable policies and guidelines, including SEPP (Waters), Victorian Stormwater Committee's Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others), EPA Victoria Publication 596 Point source discharges to streams: protocol for in-stream monitoring and assessment and Industrial Waste Resource Guideline 701 Sampling and analysis of waters, wastewaters, soils and wastes. The surface water monitoring program is to be used to inform the development and refinement of the Surface Water Management Plan (EPR SW5).</p>	Design, construction, operation

480 Best Practice Environmental Management Environmental Guidelines for Major Construction Sites  
 596 (1998) Point source discharges to streams: protocol for in-stream monitoring and assessment  
 960 (2004) Temporary Environmental Protection Measures for Subdivision Construction Sites  
 Victorian Stormwater Committee's Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others)  
 Industrial waste resource guidelines IWRG701 Sampling and analysis of waters, wastewaters, soils and wastes

SW5	<p><b>Implement a Surface Water Management Plan during construction</b></p> <p>Develop and implement a Surface Water Management Plan, in consultation with EPA Victoria, for construction that sets out requirements and methods for:</p> <ul style="list-style-type: none"> <li>Best practice sediment and erosion control and monitoring, in general accordance with EPA Victoria publications 275 Construction techniques for sediment pollution control, 480 Best Practice Environmental Management Environmental Guidelines for Major Construction Sites, 960 Temporary Environmental Protection Measures for Subdivision Construction Sites, and Industrial Waste Resource Guideline 701 Sampling and analysis of waters, wastewaters, soils and wastes</li> <li>Maintaining the key hydrologic and hydraulic functionality and reliability of existing flow paths, drainage lines and floodplain storage</li> <li>Retain existing flow characteristics to maintain waterway stability downstream of construction</li> <li>Location and bunding of any contaminated material (including tunnel spoil and stockpiled soil) to the 1% AEP flood level and to the requirements of EPA Victoria and the relevant drainage authority</li> <li>Works scheduling to reduce flood related risks</li> <li>Bunding of significant excavations including tunnel portals and interchanges to an appropriate level during the construction phase</li> <li>Protecting against the risk of contaminated discharge to waterways when working in close proximity to potential pollutant sources (eg landfill or sewer infrastructure)</li> <li>Documenting the existing condition of all drainage assets potentially affected by the works (including their immediate surrounds) to enable baseline conditions to be established and potential construction impacts on these assets to be assessed and managed.</li> </ul>	Construction
SW6	<p><b>Minimise risk from changes to flood levels, flows and velocities</b></p> <p>Permanent works and associated temporary construction works must not increase overall flood risk at relevant locations or modify the flow regime of waterways without the acceptance of the relevant flood plain manager, drainage authority or asset owner (typically Melbourne Water) and in consultation with other relevant authorities (eg Council, Department of Transport, Parks Victoria, SES, emergency services).</p> <p><b>Prior to construction</b>, flood risk should be appropriately assessed using modelling of the design of permanent and temporary works to demonstrate the resultant flood levels and risk profile in accordance with Melbourne Water Standards for Infrastructure Projects in Flood-Prone Areas (2019).</p> <p>This modelling analysis is to include sufficient events (at least up to and including the 1% AEP event) and scenarios (eg with and without blockage) to support the estimation of tangible (eg average annual damages) and intangible flood damages. If significant increases in flood risk are predicted for any events analysed, an assessment of overall flood risk considering tangible and intangible flood damages must be prepared and presented with appropriate mitigation measures for the acceptance of the relevant drainage authority or asset owner prior to commencement of construction for the relevant section of the works. If there are significant design changes during construction, the model must continue to be updated, as appropriate to represent those changes.</p>	Design, construction
SW7	<p><b>Develop flood emergency management plans</b></p> <p>Develop and implement flood emergency management plans for each of construction and operation. Flood emergency management plans are to include but not be limited to measures to manage flood risk to construction sites (including consideration of scheduling works), the tunnels and tunnel portals including interchanges and substations, and operation, maintenance and emergency management procedures for flood protection works.</p>	Construction, operation
SW8	<p><b>Minimise impacts from waterway modifications</b></p> <p>Where waterway or flow regime modification is necessary, modifications will be designed and undertaken in a way that mitigates to the extent practicable the effects of changes to flow and minimises, to the extent practicable, the potential for erosion, sediment plumes, impacts on bed or bank stability and exposure or mobilisation of contaminated material during construction and operation to the requirements of Melbourne Water or the relevant drainage authority.</p> <p>Waterway modifications are to be designed and undertaken in a way that supports the visual and aesthetic amenity and environmental conditions (including habitat, connectivity, refuge and hydraulic conditions) to support aquatic ecosystems of the waterways having regard to relevant strategies, policies and plans for that waterway and in consultation with Melbourne Water or the relevant drainage authority.</p>	Design, construction
SW9	<p><b>Maintain bank stability</b></p> <p>Develop and implement appropriate measures to minimise erosion and protect bank stability of waterways affected by construction or operation activities both directly or indirectly (for example as a result of site access), to the requirements of Melbourne Water or the relevant drainage authority.</p>	Design, construction, operation
SW10	<p><b>Provide for access to Melbourne Water and other drainage assets</b></p> <p>Provide adequate clearances and access for ongoing maintenance of Melbourne Water and other drainage authority assets to the requirements of the relevant drainage authority.</p>	Design, construction
SW11	<p><b>Adopt Water Sensitive Urban and Road Design</b></p> <p>Adopt and implement water sensitive urban design and integrated water management principles in the stormwater treatment design in consultation with the relevant flood plain manager, drainage authority, asset owner or land manager and in general accordance with the Urban Design Strategy, the specifications of the relevant local council as applicable, and VicRoads Integrated Water Management Guidelines (June 2013), the Victorian Stormwater Committee's Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others) and the DELWP Integrated Water Management Framework for Victoria (September 2017).</p>	Design
SW12	<p><b>Minimise impacts on irrigation of sporting fields</b></p> <p>Maintain existing storage and available water supply of a quality that is suitable for the irrigation of sporting fields impacted by the project as necessary in consultation with the impacted stakeholders.</p>	Design, construction, operation
SW13	<p><b>Consider climate change effects</b></p> <p>The flood risk assessment (as required by EPR SW6) must consider current climate conditions as well as the potential effects of climate change on pre and post work scenarios for future climate conditions (ie increased rainfall intensity and sea-level rise) as predicted at the end of the asset's design life using RCP8.5 projections from CSIRO to the requirements of Melbourne Water or the relevant drainage authority.</p>	Design
SW14	<p><b>Meet existing water quality treatment performance</b></p> <p>Retain or replace existing water quality treatment assets to meet or exceed water quality treatment performance as originally designed for that asset. In consultation with relevant asset owner or land manager, consider climate change effects and the potential for improved treatment outcomes where practicable.</p>	Design, construction
SWNE W1	<p><b>Water Sensitive Urban Design asset transfer strategy</b></p> <p>Prepare a strategy identifying Water Sensitive Urban Design assets constructed as part of the Project to be transferred to public authorities. The strategy must include a process to consult with relevant asset</p>	Design, construction, operation

		managers to confirm the relevant delivery and maintenance standards to be met.	
<b>16. Sustainability and Climate Change (SCC)</b>			
Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry) Infrastructure Sustainability Council of Australia rating tool	SCC1	<b>Implement a Sustainability Management Plan</b> North East Link Project must set sustainability targets and specify ratings to be achieved under the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability Rating Tool. Contractors must develop and implement a Sustainability Management Plan that contains measures to meet, as a minimum, the sustainability targets and specified ratings.	Design, construction, operation
	SCC2	<b>Minimise greenhouse gas emissions</b> Integrate sustainable design practices <b>which are best practice for major infrastructure projects</b> into the design process and implement these to minimise, to the extent practicable, greenhouse gas emissions arising from construction, operation and maintenance of North East Link. <b>These measures will, as a minimum, include the following (except where otherwise agreed with EPA Victoria):</b> <ul style="list-style-type: none"> <li>Achieve at least a 30% reduction in carbon emissions from the construction of North East Link against an Infrastructure Sustainability Council of Australia (ISCA) verified base case calculated in accordance with their independent standards</li> <li>Use a minimum of 50% of renewable energy for all electricity used to construct North East Link. (IS v1.2 Ene-2 Level 1.5)</li> <li>Achieve net zero emissions in the operation and maintenance of North East Link (excluding emissions from traffic)</li> </ul> Reduce the amount of Portland Cement content in concrete across the project by a minimum of 30% against Green Building Council of Australia reference mix design levels subject to durability and strength requirements.	Design, construction, operation
	SCC3	<b>Apply best practice measures for energy usage for tunnel ventilation and lighting systems</b> Best practice measures for energy usage are to be applied for the tunnel ventilation and lighting systems in accordance with the Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry), the EPA Victoria Works Approval and the EPA Victoria Licence.	Design, operation
	SCC4	<b>Minimise and appropriately manage waste</b> Develop and implement management measures for waste (excluding soils) minimisation during construction and operation in accordance with the <i>Environment Protection Act 1970</i> waste management hierarchy and management options, to address: <ul style="list-style-type: none"> <li>Litter management</li> <li>Construction and demolition wastes including, but not limited to, washing residues, slurries and contaminated water</li> <li>Organic wastes</li> <li>Inert solid wastes.</li> </ul>	Construction, operation
	SCC5	<b>Minimise potable water consumption</b> Stormwater, recycled water and groundwater inflow to tunnels or other water sources must be used in preference to potable water for construction activities, including concrete mixing and dust control, where this is available, practicable, of suitable quality, and meets health and safety requirements.	Construction
<b>17. Traffic and Transport (TT)</b>			
Planning and Environment Act 1987 Road Management Act 2004	T1	<b>Optimise design performance</b> 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: <ul style="list-style-type: none"> <li>Minimise adverse impact on travel times for all transport modes, including walking and cycling</li> <li>Maintain, and where practicable, enhance the traffic movements at interchanges and adjacent intersections within the project boundary</li> <li>Design the road, walking and cycling and public transport elements to meet relevant road and transport authority requirements</li> <li>Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths, including access (both vehicular and pedestrian) to public open space and reserves</li> <li>Work with relevant public transport authorities and road 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</li> <li>Replace and enhance commuter car parking, where affected by the Project, in consultation with the Department of Transport</li> <li>Minimise loss of other car parking in consultation with relevant local councils <b>and other stakeholders.</b></li> </ul>	Design
	T2	<b>Transport Management Plan(s) (TMP)</b> 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: <ul style="list-style-type: none"> <li>Requirements for maintaining transport capacity for all travel modes in the peak demand periods</li> <li>Requirements for limiting the amount of construction haulage during the peak demand periods</li> <li>A monitoring program to assess the effectiveness of the TMPs on all modes of transport</li> <li>Where monitoring identifies adverse impacts, implement practicable and appropriate mitigation measures</li> <li>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</li> <li>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</li> </ul>	Construction

	<ul style="list-style-type: none"> <li>• Suitable measures, developed in consultation with emergency services, to ensure emergency service access is not inhibited as a result of project construction activities</li> <li>• Provision of alternative parking where practicable to replace public, private and commuter parking lost as a result of project construction activities</li> <li>• Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable</li> <li>• Measures to ensure connectivity and safety for all transport network users during construction</li> <li>• Measures to limit the extent of road closures</li> <li>• Consultation with the Department of Transport <del>and</del> relevant transportation authorities <del>and</del> local Councils.</li> </ul> <p>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.</p>	
T3	<p><b>Transport Management Liaison Group</b></p> <p>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, the Department of Transport, emergency services, the project, relevant transportation authorities and relevant local councils.</p> <p>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 to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes.</p> <p>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, relevant sections of road safety audit reports and other reports, as relevant.</p> <p>Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, the TMLG should be satisfied that there has been adequate consultation to inform the Transport Management Plans.</p> <p>The TMLG must meet at least monthly until the completion of construction.</p>	Design, Construction
T4	<p><b>Road safety design</b></p> <p>Undertake independent road safety audits after each stage of detailed design and during 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.</p>	Design, construction, operation
T5	<p><b>Traffic monitoring</b></p> <p>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. <b>Ensure any adverse impacts of the Project are mitigated by implementing <del>Implement</del> local area traffic management works, or other works as required</b> in consultation with the local relevant councils.</p> <p>Develop and implement traffic performance management to monitor conditions during construction. Real time traffic information must be provided to drivers.</p>	Design, construction, operation