

## 7 Land Use and Infrastructure

### 7.1 Introduction

#### 7.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(b) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to land use and infrastructure:

*Whether the impacts of the project on land use and infrastructure in its immediate environs, including on housing, recreation and community facilities, have been appropriately addressed.*

The relevant applicable approval informed by the Land Use and Infrastructure assessment contained in Chapter 8 of the CIS is proposed Planning Scheme Amendment GC2 pursuant to the provisions of the *Planning and Environment Act 1987*. The proposed amendment seeks to remove permit triggers, apply overlay controls across sections of the Proposed Project Boundary and otherwise permit the Project's development in accordance with a project specific incorporated document to be introduced into the Melbourne, Moonee Valley, Moreland and Yarra Planning Schemes.

#### 7.1.2 Conclusion of the CIS

Chapter 8 of the CIS concluded that the specialist assessment undertaken identified a number of positive land use impacts from the project, especially in relation to its potential contribution to urban renewal within part of inner Melbourne.

The assessment concluded that the adoption of good design principles and practices, including the adoption of an Urban Design Framework, would reduce the potential for adverse impacts from permanent and elevated structures.

A number of significant temporary and permanent impacts were highlighted in the conclusion, including:

- 1.36ha of Royal Park required for permanent infrastructure (0.8% of the Park's total area);
- Sporting activities currently based at Ross Straw Field would need to be relocated;
- The acquisition of residential and commercial properties;
- Temporary occupation and permanent partial acquisition of public open space (including Debney's Park, Ormond Park and Holbrook Reserve); and
- Impacts on neighbourhood character and conditions from new elevated structures.

#### 7.1.3 Objectives and Performance Requirements

The CIS evaluation objective (set by the Scoping Directions) for "Land use, dwellings and infrastructure" is:

*To minimise adverse impacts and to achieve appropriate integration with adjoining land uses, including minimal displacement of existing land use activities, dwellings and infrastructure.*

There is one accompanying "land use and utility asset" Performance Objective:

- *Minimise impacts on existing land use and utility impacts.*

Four land use and utility asset Performance Requirements are specified in Chapter 8 of the CIS (Table 8-4) to meet this Performance Objective. The CIS stated that “*would be up to the contractor to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”.

#### 7.1.4 Land Use and Infrastructure Issues

The Committee heard land use and infrastructure evidence from the following experts:

- Ms Heather Nesbitt of GHD for the LMA on social impacts;
- Ms Marianne Stoettrup of Matters More Consulting for the LMA on business impacts;
- Ms Bonnie Rosen of Symplan for Moonee Valley City Council, on social impacts;
- Mr John Henshall of Essential Economics for City of Melbourne and Moonee Valley City Council on economic and business impacts;
- Associate Professor Mardie Townsend of Deakin University for the City of Melbourne;
- Mr Graham Porteous of the City of Melbourne for the City of Melbourne;
- Mr Rob McGauran of McGauran Giannini Soon for Moonee Valley City Council and Yarra City Council on urban design;
- Mr Craig Czarny of Hansen Partnership for Ms Peterson and Mr Peck on urban design.

Other evidence that was referred to in consideration of land use and infrastructure issues included:

- Mr Jim Higgs of TTM Consulting for the City of Melbourne on traffic/road design;
- Mr Tom Brock of GHD for the LMA on road design;
- Mr Peter Fearnside of Marshall Day for the LMA on acoustics;
- Mr Robin Brown of Renzo Tonin for Moonee Valley City Council on noise impacts.

The evidence of Ms Beverley Kliger of Beverley Kliger and Assoc. for Yarra City Council on social impacts was tabled but she was not called.

Neither the LMA nor any other party to the proceedings called town planning evidence.

At the request of the Committee, all experts met to discuss the relevant issues and determine points of agreement and dispute. At the conclusion of the conclave and further discussions an ‘*Agreed Statement*’ (Document 7), was provided to the Committee.

At the meeting attended by Ms Nesbitt, Ms Kliger, Ms Rosen, Assoc. Professor Townsend and Mr Porteous, the following topics were discussed and generally **agreed** by the experts at the conclave.

- The Project will result in a net reduction of public open space;
- Heat island effect will be addressed by Performance Requirements and the UDF;
- The SIA should be updated to identify any community facilities within or adjacent to the Proposed Project Boundary and that the Performance Requirements will address the impacts on these additional community facilities, including access during construction, consistent with those identified in the SIA;
- The community was not adequately consulted about the Ormond Road off ramp;

- Maintaining the operation of the Flemington Community Centre, both during construction and operation, is very important to addressing social equity for the Project; and
- Community health and wellbeing should be considered in the SIA.

The following topics were discussed and generally **not agreed** by the experts at the conclave.

- Impact of the Project on future recreational land needs within the City of Melbourne;
- Adequacy of mitigation measures for home owners and tenants whose properties would be acquired;
- Perceived community safety underneath elevated roadways;
- Whether the loss of indigenous remnant vegetation in Royal Park is a Social Impact Issue or a matter for other experts;
- Consideration and rating of social impact of environmental health issues in Precinct 1;
- Consideration of urban renewal issues;
- Adequacy of the proposed mitigation measures in response to the Project's impact on the Flemington Housing Estate and whether they address social equity issues;
- Adequacy of the proposed consultation framework and Performance Requirement C1;
- Whether it is appropriate to consider cumulative and indirect impacts;
- Whether refinement of Performance Requirements should occur prior to Project assessment; and
- Environmental, social and economic factors should be considered in assessing community health and wellbeing.

Based on its consideration of the evidence, and the written and verbal submissions relevant to its Terms of Reference relating to land use and infrastructure, the Committee has grouped its assessment under the following headings:

- Impacts on Housing;
- Impacts on Recreation Facilities;
- Impacts on Community Facilities; and
- Impacts on Infrastructure/Utilities.

## **7.2 Impacts on Housing**

### **7.2.1 Introduction**

The CIS indicated that implementation of the Reference Project would require the acquisition of 105 residential properties as well as tunnel strata acquisitions affecting 195 houses. All of these identified residential acquisitions for properties that are either fully or partly contained within the Proposed Project Boundary. The following overview provides a summary of proposed residential property acquisitions on a precinct basis.

#### **(i) Precinct 1: Hoddle Street (Eastern Portal)**

The exhibited Reference Design of the Hoddle Street flyover connection with the Eastern Freeway requires acquisition of 17 residential properties. The properties to be acquired for the flyover include three in Hotham Street and 14 on Bendigo Street. A temporary road

deviation is proposed by the Reference Design in Precinct 1 to assist tunnel construction activities. Acquisition and demolition of 18 residential properties (as well as 18 commercial properties) on the northern side of Alexandra Parade between Smith Street and Copper Lane is identified as being necessary for this temporary access route. The total combined site area of the proposed road deviation works is 1.8ha. The CIS notes that the site would be made available for redevelopment post-construction.

**(ii) Precinct 2: Alexandra Parade (Tunnel)**

No surface level construction works or residential property acquisitions are proposed in this Precinct *“other than a possible air intake structure towards the western end”*. The CIS stated *“the main direct impact within this precinct would be associated with the former Fitzroy Gasworks site, which would be used for a temporary lay down area ....The site could be made available for redevelopment post-construction, potentially having a highly positive impact on the area over the longer term”*.

**(iii) Precinct 3: Royal Park (Western Portal)**

The Proposed Project Boundary which accommodates the exhibited Reference Design of the western portal and viaducts connecting with CityLink within Precinct 3 contains 55 residential properties (four houses and 51 flats/units). The properties have frontage to Manningham Street in Parkville West. As the properties are within the Proposed Project Boundary they are identified for acquisition. In addition, the CIS states that the Victorian Government has entered into a voluntary purchase agreement for the purchasers and developer of the Evo apartment complex (seven stories with 175 apartments) as *“a portion of the vacant common property of this complex would be required for the project”*.

**(iv) Precinct 4: CityLink**

Within Precinct 4 (CityLink) two houses and one townhouse (located on a block currently being developed into three townhouses) in Pattison Street, Moonee Ponds, would need to be acquired. In addition to the housing acquisitions, a small section of Debney’s Park and the Essendon Community Gardens are proposed to be acquired. Sections of Debney’s Park and Travancore Park are proposed to be occupied during construction.

**(v) Precinct 5: Port Connection**

Within Precinct 5 (Port Connection) the acquisition of 13 residential properties (and 12 commercial properties) would be required to accommodate project structures and construction laydown/depot areas. The areas required include three small groups of land off Stubbs Street and Bent Street (generally off the western bank of Moonee Ponds Creek).

The Committee notes that there are no residential properties to be acquired in Precinct 6 and that there are no residential impacts. Accordingly this assessment of housing impacts does not further consider Precinct 6.

Having highlighted the location of the 105 residential properties that are proposed to be compulsorily acquired, the Committee notes that there were limited submissions from the residents or the owners of these properties. The majority of opposing submissions concerning housing impacts were from residents and property owners that are just outside

the Proposed Project Boundary, either directly abutting it or in close proximity to it. All such submissions opposed the Project and the majority were critical of the CIS and the Reference Project's consideration of the impacts that the Project will have on the various residential communities that will have a direct or nearby interface with the Project. A common concern raised by these submitters was that the CIS *Land Use Planning Impact Assessment* at Technical Appendix F was inadequate in identification and consideration of the enduring issues that will be faced by residents located outside the Proposed Project Boundary. These submitters variously opposed the Project outright, sought design modifications to minimise impacts on their amenity, and/or sought to be acquired either by inclusion within the Proposed Project Boundary or by voluntary agreement. The concerns in relation to housing impacts varied on a Precinct basis.

The Committee's assessment in relation to housing impacts focuses on whether the impact of the Project on residential communities *"has been appropriately addressed"* (Public Hearing Matter 7(b) – Committee's Terms of Reference), and whether impacts on housing have been *"minimised"* (CIS Land Use Evaluation Objective and Performance Objective). This assessment considers both the proposed residential property acquisitions and whether impacts on remaining residential communities – both during construction and on-going operation of the new roadway - have been appropriately considered and resolved.

### **7.2.2 Key Issues**

The key issues include:

- Whether the extent of residential property acquisition is justified;
- Whether the impacts on residential properties that will be outside the Proposed Project Boundary have been appropriately considered, addressed and minimised; and
- Whether the Land Use and Infrastructure Performance Requirements are adequate.

### **7.2.3 Evidence and Submissions**

There were a number of overarching submissions made relating to the Project's likely impact on housing and abutting residential communities. The LMA's opening submission (Document 23) repeated the CIS's Chapter 8 conclusion that the Project is expected to *"generate a number of positive land use impacts, especially in relation to its potential contribution to urban renewal"*. The submission acknowledged there will be some negative impacts on land uses and infrastructure in the immediate environs of the Project, however the commentary in the CIS lacked specificity in relation to impacts in particular locations. The assessment was broad. Key observations in the CIS included:

*It is difficult to avoid direct impacts when seeking to provide linear infrastructure. However, this Project will reduce direct property impacts – at very substantial cost – by placing the major portion of the link in a tunnel.*

*Nevertheless there will still be a significant number of lots that will need to be acquired, or occupied for construction purposes, for the Project. These are set out in Chapter 8 of the CIS. The Land Acquisition and Compensation Act 1987 will apply to these acquisitions and occupations. This Act is designed to ensure that fair compensation is paid for any acquisition, or occupation, of an interest in land.*

The LMA submitted that it is difficult to avoid construction impacts and that road works always involve some disruption to traffic, including cyclists and pedestrians. Further it submitted the Project seeks to address construction impacts by:

*... provision of a temporary road, and by other means.*

*During construction substantial areas of land will be needed for laydown areas and the like. This will affect users of Royal Park and sporting clubs. The LMA has sought to address the concerns of sporting clubs by entering into a memorandum of understanding with the City of Melbourne to provide assistance to improve other facilities so as to manage this impact.*

LMA's opening submission did not identify or comment on the impacts of construction on any specific residential community remaining at the interface with the Project, other than noting that the "CIS sets out various performance requirements to manage construction impacts, such as the movement of heavy vehicles and dust".

In relation to visual impacts on residential communities, the LMA submission stated that the specialist assessment undertaken for the CIS found that:

*... adopting good design principles and practices (including the adoption of an Urban Design Framework), and giving appropriate consideration to the character of local areas within the Proposed Project Boundary, would reduce the potential for adverse impacts from permanent and elevated structures.*

The closing submission on behalf of the LMA (Document 525) stated that one of the main social impacts that will arise stems from the compulsory acquisition of properties:

*The LMA acknowledges that these types of impacts are an unfortunate (albeit necessary) component of the delivery of the Project. They are, however, impacts that arise in the case of any large linear infrastructure project of this type (including, for instance, Regional Rail Link and EastLink).*

*That said, it should equally be acknowledged that this Project will minimise direct property impacts – at very substantial cost – by placing the major portion of the link in a tunnel.*

*There will, however, still be a significant number of lots that will need to be acquired or occupied for construction purposes. These are set out in Chapter 8 of the CIS. The Land Acquisition and Compensation Act 1986 (Vic) will apply to these acquisitions and occupations. This Act is designed to ensure that fair compensation is paid for any acquisition, or occupation, of an interest in land.*

*It has been suggested that the ability of affected land owners to relocate within or around the same area is an important component of any analysis of the social impacts of compulsory acquisition. It is pertinent to note in this regard that both of the areas situated at either end of the tunnel, being those areas that are most directly affected by property acquisition, are relatively densely populated. There is accordingly no reason to suggest that there are not reasonable prospects that affected land owners will be able to relocate in relatively close proximity to their existing residences if they indeed choose to do so.*

An overview of precinct specific evidence and submissions relating to impacts on housing and residential communities is provided below.

**(i) Precinct 1: Hoddle Street (Eastern Portal)**

Mr Brock gave road design evidence for the LMA and provided presentation slides (Document 42). These contained a number of slides relating to the Hoddle Street Interchange and he acknowledged that property acquisition on the west side of Hoddle Street and north side of Hotham Street are *“Shortcomings of the Reference Project Option”*. Other identified shortcomings of the flyover identified by Mr Brock included urban design and some road geometry issues. Mr Brock identified a number of other Interchange Options including:

- *Conventional signalised diamond interchange;*
- *Single point urban diamond interchange;*
- *Direct grade separation of right turn (as per Reference Project);*
- *Loop ramp grade separated of right turn (as per existing);*
- *Diverging Diamond Interchange.*

While the above options were identified by Mr Brock, the only one where an assessment was undertaken by him was on the Diverging Diamond Interchange (DDI), an option he concluded should not be implemented. No assessment of impact on housing was provided in this assessment. Under cross examination, Mr Brock accepted that a DDI would result in fewer property acquisitions.

The accompanying presentation tendered in the acoustics evidence of Mr Fearnside for the LMA (Document 76) noted that in relation to traffic noise assessment in Precinct 1, that the *“noise levels near the Eastern Freeway could increase as traffic volumes are predicted to increase by up to 50%”*. In relation to mitigation measures, Mr Fearnside indicated that *“indicative noise mitigation measures include noise barriers up to 4.5m high with barriers 1.5m high on the flyover”*.

In providing heritage evidence Mr Lovell (Document 70) stated that he disagreed with Mr Raworth’s concerns that impacts on retained sections of streetscapes will result in demolitions in Bendigo Street, and their marginalisation on the single sides and the ability of the wider precinct to exhibit intact streetscapes. Mr Lovell considered that heritage streetscapes are not necessarily two sided as exhibited by numerous precincts throughout Melbourne. On this issue, he concluded that *“the west side of Bendigo Street is not a particularly intact streetscape on nor is the east side. While the concern is reasonable it has been considered an in my view the change does not give rise to concern regarding marginalisation”*.

Mr McGauran (Document 128) questioned whether *“the inclusion of an elevated roadway and demolition of buildings within a heritage overlay is an outcome that could be said to make a contribution to positive, memorable experiences and enhanced amenity for users of adjoining public spaces and for land uses abutting the Proposed Project Boundary?”* He concluded that the flyover should be abandoned and replaced with an at-grade solution, and that Hoddle Street, Bendigo Street and Alexander Parade should be retained and their definition improved.

Ms Nesbitt's response to other social planning evidence (Document 97) highlighted that she disagreed with other witnesses and submissions that considered that the social impact ratings regarding environmental health impacts in Precinct 1 are too low. She concluded that *"Table 2 Impact Assessment Rating Criteria in the Social Impact Assessment provides a sound methodology for weighting potential impact consistently within all precincts across the project. The identified mitigation measures provided for environmental health impacts such as noise, visual amenity, air quality and vibration is based on the advice provided by other technical experts and weighted accordingly"*.

The social impact evidence of Ms Klinger was critical of the SIA's lack of consideration of direct impacts of the Project's design on local communities, neighbourhoods and suburbs in its *"Impact Assessment Rating Criteria"*. She highlighted and was critical that the CIS contains no commitment to the development or investigation of the proposed urban renewal opportunities and accordingly categorised them as speculative. Of particular concern to Ms Klinger was the potential for significant sites may become an unsafe and a social hazard unless commitments and planning is undertaken. The evidence statement contends that a site remediation plan should be prepared and funded.

Various submissions highlighted that construction impacts on home and residential amenity were unacceptable and were one of many overarching reasons that the Project should not proceed in its exhibited form. Others argued that the Project's construction impacts would be wide-ranging and significant; there would be irrevocable loss of homes, as well as businesses and loss of residential amenity, parkland and trees, waterway habitats, playgrounds and sports fields. Submitters were concerned that homes, habitats and playgrounds will be acquired, not just for the Project, but to accommodate the construction machinery, trucks and materials.

The opening submission from the City of Yarra stated *"a massive flyover at Hoddle Street at the proposed Eastern Portal"* was one of the significant negative impacts produced by the Reference Project, which it said, will have significant adverse visual impacts on nearby resident communities. It stated that the Project includes *"an unprecedented programme of property acquisition involving numerous properties across the city as currently identified, and potentially more if the project changes"*, including those in Hotham and Bendigo Streets. Impacts on residents associated with noise, both during construction and then ongoing, were cited by the City of Yarra as being particularly significant in this location due primarily to the elevated flyover.

In response to its concerns on the impact of the flyover, the City of Yarra advised the Committee that prior to the Hearing (as well as during the Hearing), it advised the LMA that further consideration should be given to alternative designs *"which could minimise the extent of acquisition, and the visual impact of the flyover"*. Yarra submitted that the LMA treated these suggestions *"with contempt"*. The City of Yarra was particularly critical of the LMA for not calling a witness from one of the design team who had been with the Project from the start to explain and validate the flyover design. It expressed dismay that the LMA instead called a road design witness from GHD *"an expert witness whose bid to do the actual design work for the project the LMA had rejected!"*.



The presentation by Mr Goodman on behalf of 3068 Group (Document 303) reiterated that the Group is opposed to the Reference Project for its impacts on the residents of Clifton Hill (in particular) and on heritage values. They oppose the interchange flyover on many grounds but particularly due to its perceived poor pedestrian linkages and its resultant severance impacts.

Mr Herington (Submission 384) argued the impact of the height and location of the flyover could be significantly reduced with a better at grade separated design. He elaborated on this in his submission on behalf of Ms Virgona and Ms O'Toole (Submission 49 and Document 297). In relation to the land use impacts of the flyover, Mr Herington concluded that the LMA has relied on 'straw man' arguments and that the bottom line is:

*If the LMA were told East West Link could not be built unless there was a low impact intersection at Hoddle Street, they would quickly come up with solutions.*

*The virulence of their arguments against any alternatives demonstrates that they have not approached this task with an open mind.*

One of the owners of two properties in Noone Street, Clifton Hill addressed the Committee and explained that the announcement of the Project has significantly devalued the properties and as a result he has incurred substantial stress and financial hardship. Valuation documents were submitted in confidence. The submitter suggested that the LMA or the Government should provide "fair compensation" for the devaluation of the properties, rental losses, and costs incurred in getting independent valuations.

Mr and Mrs Geary (Submission 203) reside in Noone Street. Their submission highlighted that the Project will have a significant detrimental impact on their property due to "the poor and compromised design" that results in the realignment of Alexandra Parade to facilitate construction. The 5 to 7 year impacts will include noise, dust, vibration and pollution. Mr Geary concluded (Document 374) that "the project fails to achieve the objective of minimising adverse impacts and achieve appropriate integration with adjoining land use activities, dwellings and infrastructure". He requested that the Project be redesigned to avoid the need to move Alexandra Parade to their property boundary and, in the "interests of equity", he urged the Committee to recommend that property owners who are adversely affected should be compulsorily acquired by the LMA.

The submission of Mr Hardwick of Slater and Gordon (Submission 536) observed that the Project runs through some of Melbourne's oldest suburbs and that many of the properties in Clifton Hill, Collingwood, Fitzroy and Parkville are over 100 years old. Mr Hardwick advised (Document 366) that 149 property owners had contacted his company with concerns regarding potential property damage associated with the Project's construction and operation. The submission recommended that the contractor should be required to meet the reasonable costs incurred by any property owner in obtaining pre-construction and post construction property condition report from a qualified engineer or building surveyor and in the event of any damage, the contractor should be required to remediate the damage to the satisfaction of the independent inspector and/or should be made to compensate the owner.

The expert witness conclave agreed statement for Social Impact (Document 7) addressed the issue of Urban Renewal as one of the issues not agreed. It stated that "Several experts

*consider that there is a need to acknowledge that sites may not be developed for urban renewal as proposed, and negative social impacts are possible if these sites remain vacant (eg vandalism, lack of safety). Others consider that this is outside the responsibility of the LMA and is reliant on other agencies to deliver urban renewal outcomes.”* Ms Nesbitt reaffirmed in her response to other expert material (Document 97) that she considered urban renewal opportunity realisation is *“outside the responsibility of the LMA and is reliant on other agencies to manage and deliver urban renewal outcomes.”*

Mr Saunders who is a resident in Clifton Hill (Submission 524 and Document 238) was particularly concerned regarding the unknown future of many sites post construction. Among other issues he urged the Committee, if it were to support the Project, to recommend that the future of the temporary road and former gasworks site be determined prior to the signing of contracts with the bidder, including the specifying of planning and height controls.

### **(ii) Precinct 2: Alexandra Parade (Tunnel)**

There were comparatively few submissions from residential property owners along this *“in-tunnel”* section of the Project alignment. Submissions focused on concerns regarding vibration and noise as well as amenity issues.

The submission by Margaret Ng (Submission 9) called for a return of Princes Street (Nicholson Street to The Avenue) to two lanes in both directions, instead of the current three lanes to improve amenity and safety.

The submission (Submission 456) and presentation by Ms Phelan (Document 501) focused on the potential impacts of vibration and regenerated noise and the potential damage to that aged building stock, particularly along Princes Street. Ms Phelan request that in addition to performance requirements that require the contractor to perform condition assessments, they should be required to rectify the structural soundness of buildings to enable the fabric of the building to *“permit increased vibration and regenerated noise”*.

The submission noted that the amenity impacts in Precinct 2 have been overlooked in the CIS. Of particular concern was the lack of description or diagrams of how Princes Street will be traffic calmed or reconstructed. The submission concluded that the existing Heritage Overlay should be removed over all properties so that property owners are given the same exemptions for redevelopment as the Government proposes to afford itself for the Gasworks site (and other sites further east in Precinct 1).

### **(iii) Precinct 3: Royal Park (Western Portal)**

The expert witness conclave agreed statement for Social Impact (Document 7) stated that all Social Planning experts agreed that *“community health and wellbeing should be considered in the SIA”* for the Project. It addressed a number of issues relevant to the Project’s impact on housing and residential communities. The statement indicated that the social planning experts could not agree regarding *“Cumulative and indirect impacts”*, and it noted:

- *Several experts consider that this should be addressed in the SIA, consistent with leading practice, particularly relating to the existing impact of CityLink in Precinct 3 and that this project further adds to this impact.*

- *It is not agreed whether the assessment of cumulative impacts are with within the Terms of Reference.*

Ms Nesbitt's Social Impact supplementary evidence for the LMA and her supporting presentation slides (Documents 96 and 97) reaffirmed that she considered the recommended additional mitigation measures proposed by the LMA are reasonable to address social equity issues related to the Flemington Housing Estate Residents. She observed that the modified performance requirement and modified/new mitigation measures "*would adequately respond to these impacts*". The modifications to the Performance Requirements supported by Ms Nesbitt are as follows:

*Performance requirement C1 modified*

- *Identify Office of Housing and Flemington Estate tenants; potentially affected property owners; and a Community Liaison Group for the Manningham St/West Parkville*

*Performance requirement T2 modified*

- *Provide Pedestrian Access Plans, including provision for people with limited mobility, for both the construction and operation of the Project for:*
  - *Hoddle Street Interchange/Eastern Tunnel Portal*
  - *Elliott Avenue Interchange*
  - *Manningham Street/Parkville/Western Tunnel Portal*

Ms Rosen's Social Impact evidence and witness presentation slides (Document 190) for Moonee Valley noted that the community comprising the Flemington Housing Estate has multiple and complex risk factors and vulnerability. The community is highly dependent on public and active transport, and is socially and economically immobile. Ms Rosen stated that the Project will have permanent impacts on the community including visual intrusion, noise and vibration, light spill, reduction in air quality, and visual severance. Her evidence reiterated the view that permanent, cumulative negative direct impacts leads to increases in existing inequities in health and wellbeing including:

- *Inability to open windows, insomnia, lack of access to sunlight;*
- *Stigma and reduction in pride in surroundings due to road, vandalism;*
- *Potential reduced engagement in physical activity; and*
- *Loss of confidence in process.*

Mr O'Brien's presentation slides (Document 175) accompanying his traffic evidence concluded that "*the impacts on Debney's Park are substantial and probably avoidable with better freeway system design*".

The presentation notes accompanying Mr Higgs' road design evidence (Document 109) contained an alternative design concept for the western interchange that he considered will reduce the number of houses needed to be acquired. Further, it would reduce the impacts on remaining residents, housing and impacts on Ross Straw Field. His evidence stated that the Project's inclusion of the Ormond Road off ramp will add convenience for residents and possible businesses in the area that the connection can serve, although he acknowledged that "*there might be some downsides as well*".

Dr Nadebaum (Document 149) stated that he regarded Ross Straw Field to be *“well suited to function as a location for stockpiling of contaminated soil”* due to its size and *“and relative seclusion, and its proximity to the tunnelling works with are likely to commence from the western portal”*.

The submission of Ms Hicks for Moonee Valley (Document 194) was particularly critical in relation to the CIS and its consideration of land use and infrastructure impacts generally and also specifically in relation to Precinct 3. It stated:

*The impacts on land use and infrastructure have not even been adequately identified never mind “addressed”.*

*Underlying this failure is the notion that the road has to come up somewhere so it might as well be in an area already compromised.*

*Such a view merely entrenches existing disadvantage and inflicts disproportional harm on those already blighted by CityLink.*

*The level of analysis of the impact on the Flemington Housing Estate (FHE), Debney’s Park, the Flemington Community Centre (FCC) and linear park including the Sporting clubs in Moonee Valley is woefully inadequate.*

The submission reiterated that the key impacts on residents living to the west of CityLink within Precincts 3 and 4 will be associated with additional traffic on local streets as a result of the Ormond Road off ramp and likely rat-running associated with toll avoidance.

The closing submission for Moreland City Council by Mr Griffiths noted that elimination of the Ormond Road off ramp would resolve the bulk of the concerns that Council has with both traffic and recreation.

Many community and individual submissions were lodged opposing the impacts of the Project on residents and residential amenity within Precinct 3. A representative sample of the key issues raised in these submissions is provided below.

Ms Iser (Submission 92) submitted that the Project will not deliver a net community benefit, and the impacts are significant in regard to environmental, economic and social impacts. In relation to land use impacts, Ms Iser submitted (Document 145) the key impacts in the Precinct are associated the following:

- Homes to be acquired;
- Loss of Ross Straw Field for recreational sport;
- Loss of Debney’s Park Playground;
- Severe overshadowing of Flemington Community Centre;
- Viaduct 37m from 120 Racecourse Road (and noise impacts have not been adequately assessed nor resolved); and
- Business losses.

Other submitters noted that the impact of the elevated road on the housing estate at Flemington was significant. One submitter commented that *“In my view the state owes a very high duty of care to public housing tenants who live in a particular place not through choice but because the government places them there. The panel must not take lightly their responsibility to consider the impact of the project on public housing tenants”*. Many

submissions stated that the playground within the Estate should not be sacrificed for the Project and that such spaces are more than just a physical space. It was urged upon the Committee that the impact of the loss or diminishment of the playground will be significant on the whole community.

The key elements of the submission by the Flemington Neighbourhood Renewal Board (Submission 399) were expressed to the Committee by Board Members Ms Shadia Mohammed Aly and Mr Ahmed Dini (Document 309). The presentation reiterated that there are over 3,500 people living on the estate, with nearly half being born overseas. Ms Aly drew the Committee's attention to the 26 recommendations from the Board contained at pages 24 and 25 of their original submission. Their primary recommendation is that *"The option for the relocation of the proposed viaduct to the east side of the CityLink and the option for a tunnel passing under Flemington and Boundary Roads are fully independently investigated"*. The presentation and submission stressed that the residents of the estate will be significantly and unacceptably impacted if the Project Reference design is constructed. The submission highlighted that noise and air quality impacts will be unacceptable as will impacts on the playground, Community Centre and Community Gardens. Ms Aly urged the Committee to ensure that noise impacts would be resolved for the people who live in 120 and 126 Racecourse Road. If the Project is to be approved, Ms Aly submitted that *"a full master plan be prepared and implemented for the housing estate and Debney's Park combined, including the relocation of the playgrounds away from the construction zone and building of a new Community Centre somewhere near the estate, such being fully functional before road works commence"*.

Mr Krelle from the Parkville Association (Submission 317 and Document 332) noted that there are approximately 1,920 dwellings in Parkville housing a population of 6,200 people. The group opposes the Project due to its impacts on the present land use and infrastructure including housing, Royal Park, Ross Straw Field and other recreation and community facilities. The group oppose the UDF and the CIS's failure to address cultural, heritage, native vegetation and biodiversity impacts.

Mr Potts submitted on behalf of the Flemington Association Inc (Submission 682 and Document 321), and noted that the group represents people from Flemington, Newmarket and Travancore. He highlighted that these residential communities have suffered significant negative impacts due to a range of infrastructure projects, including the construction of CityLink. Mr Potts submitted that Debney's Park and the Moonee Ponds Creek trail are particularly important to these communities. He submitted that their value is also heightened due to the area having 20% more children under the age of four compared with the State average. The Association considers the Project's impact on these assets is unacceptable and should be avoided. Mr Potts concluded his presentation noting that the group *"see a danger for the area where there is return to the polarisation of advantage and disadvantage"*.

Mr Peyton stated that one of the benefits of the *"alternative option"* presented by Safety Net for Royal Park (Submission 257 and Document 335) is that 55 homes in Parkville West would be saved. The group submitted that the Project has failed the Terms of Reference obligations. Specifically they considered that the impacts of the Project on land use and infrastructure in its immediate environs, including on housing, recreation and community

facilities have not been appropriately addressed. As well, Mr Peyton argued the impacts of the Project on native vegetation and biodiversity have not been appropriately addressed, in part due to alternatives not being adequately investigated and addressed in the CIS. The group submitted that it has put forward a number of alternative considerations to the LMA dating back to May 2013. They consider that there are plenty of alternatives available to the LMA to consider. The submission on behalf of the group included a number of recommendations including requesting the LMA and bid consortia to advance development of 3 or 4 versions of an alternative design (based on the groups Option 1) for the community to review. Following this, they suggested a supplementary CIS be prepared on the most balanced triple bottom line version as a Project rather than a Reference Project.

Mr Rogers on behalf of the Parkville Gardens Residents Association submitted that the impacts on Parkville West would be such that the community would be destroyed for ever with future generations describing the community as “*waste Parkville*”. That group submitted that parkland should not be seen as “*town planners code for excess land waiting development*”. The health, visual, cultural, environmental, noise impacts associated with the portal structure and viaduct links are considered by the group to be unacceptable.

Mr George (Submission 121 and Document 288) raised significant concerns regarding the impact construction will have on the structural integrity of the units at 18 Lennon Street in Parkville. While opposing the Project, Mr George’s key concern was to ensure the inclusion of appropriate and independent inspection reports to be completed at the Project cost, both prior to and post the period in which construction works are to occur. Further, should building conditions deteriorate as a result of the Project construction or operation, Mr George considered appropriate compensation should be payable by the State, with such claims being considered by an independent body.

Ms Peterson (Submission 439 and Document 333) submitted that Parkville West is a highly urbanised and densely settled urban environment. The submission was highly critical of the CIS in that it did not adequately consider or attempt to minimise the impact on residential land use on Manningham Street, the Parkville West community nor the area’s neighbourhood character. Concern was expressed that construction noise impacts are not addressed in relation to Manningham Street and that despite the Social Impact Assessment acknowledging that the impacts on this Precinct will be the most significant, the only mitigation measure proposed beyond the UDF is “*consultation*”. The submission concluded that the combined impacts and lack of remediation render the Project design in this Precinct as unacceptable. The submission requested the Committee to reject the Reference Design and recommend that the UDF be rewritten to require measurable standards. She requested that the Committee recommend that any future Reference Project address the existing site constraints, having regard to the established and sensitive residential uses of Parkville West and the role of the western side of Royal Park as an amenity offset to the existing substantial road infrastructure and respond accordingly. Ms Peterson urged the Committee to recommend that the Safety Net for Royal Park Option 1 be further investigated.

Mr Smith (Submission 541 and Documents 295 and 296) highlighted significant concerns with the noise impacts that will result if the Project is implemented in its current form and with the current performance requirements. Mr Smith’s concerns are further discussed in the Noise and Vibration assessment (Chapter 9).

**(iv) Precinct 4: CityLink**

Ms Rosen's social impact witness presentation slides (Document 190) noted that the residential component for the suburbs of Travancore, Ascot Vale and Moonee Ponds will be impacted by visual intrusion, and vibration, light spill, noise, reduction in air quality, visual severance; property acquisition and displacement. Ms Rosen concluded that these residential communities will suffer "*permanent, direct and cumulative social impacts*" that will "*detract from health and wellbeing*".

In relation to likely impacts on individual residential properties within Moonee Valley, Mr Henshall concluded (Document 152) that:

- *Three residential properties in Moonee Ponds will be directly impacted through acquisition;*
- *Others will be potentially impacted by noise, dust etc in proximity to the Link;*
- *Rat-running to access the EWL/other destinations, and also to avoid paying a toll; and*
- *Such effects not mentioned in CIS.*

**(v) Precinct 5: Port Connection**

Mr Henshall's presentation slides (Document 152) highlighted that the CIS does not adequately address potential negative impacts on land use in immediate environs of Arden-Macaulay. He is of the opinion that the impacts in the CIS are specifically project-related (and falling within the tightly-defined Proposed Project Boundary), and do not have specific regard for externalities (eg, impacts on amenity and property values). He noted that impacts relate to individual properties to be acquired for the project, or used as work areas during construction. Of relevance to the impacts on housing, Mr Henshall highlighted what he considered to be the Project's local amenity impacts. These include:

- *Adverse impacts (noise, dust, light spill, visual) will have adverse impacts on property values and therefore on urban renewal prospects;*
- *Land reserved for Part B for "longer term" development effectively quarantines the land from development that would otherwise in a timely manner;*
- *Adverse impact on efforts to rejuvenate Moonee Ponds Creek due to proposed elevated roadway; and*
- *Wider impacts beyond Proposed Project Boundary are not considered.*

Mr Higgs' presentation notes (Document 109) stated that he does not consider the Arden Street Ramps as necessary given that there are multiple other ways for all relevant vehicle movements to occur.

The opening submission by Mr Pitt on behalf of the City of Melbourne stated that if Part B of the Project was constructed as per the Reference Project, it would not appropriately address or manage the impacts on Moonee Ponds Creek and its environs for public use or adjacent lands identified for residential development by way of visual bulk, overshadowing, noise and intrusions into the waterway.

Mr Pitt tendered and walked the Committee through the '*Moonee Ponds Creek Concept Plan*' which is Incorporated Plan IPO5 in the City of Melbourne Planning Scheme (Document

275), with reference to the section of the Creek identified as ‘*Reach 2: Railyards – from New Footscray Road to Arden Street*’ (pages 20 and 21)”. The Plan was prepared by Melbourne Water for the Moonee Ponds Creek Association in 1992. The corresponding planning scheme map extract provided by Mr Pitt (Document 276) identified IPO5 covering land between on the eastern side of Stubbs Street and the western side of Moonee Ponds Creek, for the length of the Creek between Racecourse Road in the North and Macaulay Road in the South. This land area corresponds with Part B alignment from Chainage 29700 to 30400. Mr Pitt advised:

*Pursuant to clause 43.03-1 Moonee Ponds Creek between Racecourse Road and Macaulay Road is within Schedule 5 to the Incorporated Plan Overlay [IPO5] which requires that a permit must be generally in accordance with the Moonee Ponds Concept Plan (an incorporated document).*

Mr Pitt stated that the viaduct route proposed in Part B of the Project “*couldn’t be said to be in accordance with the Vision or Action Program detailed in the Plan*”. The Plan variously seeks to restore creek habitat creating a natural environment and conserving remnant vegetation, providing an important habitat corridor with a theme of “*bringing the ponds back to Moonee Ponds and reducing the impact of the concrete drain*”. Mr Pitt submitted that the Arden-Macaulay Structure Plan advances these outcomes. Part B of the Project by comparison, he said, will devalue such outcomes and values in the interest of transport infrastructure.

The LMA’s closing submission (Document 525) stated:

*While Part B will impact upon Arden Macaulay, it cannot be concluded that the impacts would be of such a magnitude as to compromise its ability to be developed in a manner that generally accords with the objectives contained in the Arden Macaulay Structure Plan.*

*Further, that Structure Plan is not yet at the stage where it could be regarded as being a ‘seriously entertained planning proposal’. ...*

*The Structure Plan contemplates that relatively dense, residential and mixed use development can be established along the length of the existing CityLink alignment. It proposes this despite recognition of the significant impact of the road noise levels from CityLink, and in the absence of any effective strategy to reduce noise (aside from ‘advocating’ for its reduction). Consequently, in order to achieve its objectives, planning measures will need to be introduced to address existing noise from CityLink. This will be the case regardless of whether the Project, or Part B, is approved.*

*Mechanisms exist to manage noise from roadways. Design and Development Overlays can ensure that new sensitive land uses protect themselves to an appropriate degree from existing noise. Further, recent developments along the length of CityLink (such as apartments at 18 Bent Street and the ALT Tower development) show that high standards of residential amenity can be achieved in close proximity to unprotected freeways.*



*While the Moonee Ponds Creek will be impacted, it will not be fatally compromised by Part B. Nor will it be unable to contribute to the amenity of the Arden Macaulay precinct. It is a largely artificial waterway that can be reshaped, modified and improved so as to become a valued space. The impact of the elevated road structure will be significant, but not unacceptable.*

*The evidence of Mr Wyatt demonstrates how spaces in or around elevated road structures can be made successful as urban spaces. The UDF will ensure that careful consideration is given to the spaces, and to spaces in and around the elevated viaduct.*

*Finally, it needs to be noted that, contrary to what has been suggested by the City of Melbourne and others, planning for the Arden Macaulay precinct has not proceeded in ignorance of the East West Link. Rather, the Melbourne Planning Scheme acknowledges plans for the East West Link and calls for growth and development in Urban Renewal Areas to be 'integrated' with it.*

Numerous community and individual submissions were lodged opposing the impacts of the Project on residents and the residential amenity within Precinct 5. A representative sample of the key issues raised in the submissions is provided below.

Submission 552, while noting that there are many opportunities for improvement to the Creek submitted (Document 281) that the Creek is a beautiful place and *"the proposed elevated road will effectively make the creek nothing more than a drain-this will be a significant loss to the people who live near the creek as well as those who walk and cycle along the creek and the birdlife that use and live on the creek"*. Further, it was submitted that the elevated road will have a devastating impact on the businesses and homes in the area and that this impact has not been properly articulated in the CIS which undervalues the amenity of the area.

The presentation by Mr Woodland on behalf of the Kensington Association (Documents 400 and 401) noted that constructing Part B of the road link would have *"very substantial impacts on inner Melbourne and on the Kensington community in particular"*. He commented that the Part B alignment will *"derail the State Government's own urban renewal aspirations for the Arden-Macaulay area"*. He said that the Government has identified the Arden-Macaulay area as one of Melbourne's *"urban renewal jewels"* and its vision is to see the suburb rejuvenate with housing, businesses, open space and facilities. Mr Woodland argued that *"dropping another elevated four land freeway right on top of the supposed open space jewel in the Arden Macaulay crown"* is totally contrary to the long held strategic land use vision and ambitions for the area.

The Residents about Integrated Development (RAID 3051) submitted that they have been actively working with the City of Melbourne and other groups in helping develop the Arden-Macaulay Structure Plan (Submission 686 and Document 287). The group considered that as the full range of options and alternatives have not yet been explored, it cannot support the Project until further investigations and a compelling case has been made. It considered the long-term impact of the Project requires further investigation. In particular RAID 3051 contended that possible mitigation of negative impacts on local amenity and environment has yet to be fully explored. It submitted *"the proposed construction over the Moonee Ponds*

*Creek does not comply with the stated Urban Design Principles, and therefore must not proceed”.*

In relation to impact on land use, dwelling and infrastructure, the submission of “*Inner Melbourne Planning Alliance Inc*” (IMPA) (Submission 394) stated that highly affected areas will include the playing fields of Ross Straw Field, the Moonee Ponds Creek Wetlands and the dwellings adjoining the Stage 2 connection to the Port of Melbourne. They said: “*The negative impact on existing land use has not been fully recognised in the CIS, nor have any clear offset measures been proposed or secured*”. Dr O’Brien, President of the Alliance concluded that for a range matters concerning health of residents, environmental impacts, social impacts and urban design flaws “*Precinct 5 and 6 cannot form part of the EWL Project at this time*”. The presentation slides tendered by Dr O’Brien (Document 289) contained a number of before and after images highlighting the resultant impact of the Project on the urban landscape of the Arden-Macaulay Precinct and its non-compliance with the CIS’s urban design principles and aspirations. The Committee found the graphic images compelling.

Similarly compelling graphics were included in the presentation of Mr Ingram (Document 466) including numerous before and after scenarios highlighted in his walking tour of Kensington. The submission concluded that “*the current East West Link location and design, at least for Kensington is the worst possible option*”.

Ms Iser (Submission 92) in her presentation to the Committee (Document 145) expressed the view that the CIS does not seek to avoid impacts or adequately minimise them. She said:

*By focusing on minimising rather than avoiding impacts, the CIS has not appropriately addressed the impacts. This is most evident with respect to the impact that cannot be effectively minimised on Royal Park, Debney’s Park and other open space and homes: homes and open space lost to roadway is irreparably removed and unrecoverable through ‘minimisation’. Avoidance is the most appropriate means of addressing these impacts.*

The submissions and presentation by the Araneda’s sisters (Submissions 420 and 569, and Document 409) noted that Kensington was “*one of the suburbs who stands to lose the most and gain the least*” from the Project. They considered the CIS does not give sufficient weight to the negative impacts of the proposed design, particularly the impacts on the Moonee Ponds Creek and the noise, visual, overshadowing impacts on the Bent Street apartments. They submitted that far too great a reliance has been placed on the Urban Design Framework to offset/mitigate such impacts, many of which have yet to be properly identified and assessed.

The submission of Ms Colasante (Submission 245), also a resident of the Bent Street apartments, expressed similar opposition to the Part B viaduct and its location generally 8 to 10 metres from the apartments in the complex. The submission provided a detailed review of the CIS and chronicled significant impacts for Kensington residents that she argued, design will not be able to mitigate. Ms Colasante concluded that the Project and in particular the Part B viaduct will create an urban wasteland and leave a negative legacy for the community for generations to come

## 7.2.4 Discussion

### (i) Precinct 1: Hoddle Street (Eastern Portal)

As an opening observation, the Committee highlights that a significant portion of the Project alignment post construction will be in tunnel. For those areas in the Precinct where the road is in-tunnel, the Committee accepts that the impacts of the Project on residential properties have been effectively minimised, once the Project is in operation. The road is in-tunnel for only about one third of the Precinct as it emerges from underground just west of Hoddle Street where it extends and rises east to pass under a proposed elevated flyover at Hoddle Street.

The *'Impact assessment'* within *'Land Use Planning Impact Assessment'* at Technical Appendix F (Section 7.4) states that the construction of the *'Gateway bridge structure'* to provide the ultimate connection from Hoddle Street to the Eastern Freeway *"would see the construction of a significant structure that could impact on residential amenity (south-west of Hoddle Street and Alexandra Parade)"*. Through the opening submission of Mr Morris, the LMA advised the Committee that this flyover structure and other on-off access ramps (as well as other elements of the Project not specified in *"the Project as Declared"*) are *"ancillary aspects"* of/to the Project.

In relation to the flyover, the technical assessment notes that there would be impacts to residential properties moving west from Bendigo Street (including those dwellings on Bendigo Street which would not be acquired) during both construction and operation *"as the bridge would become a highly visible and defining element in the local environment."* While the Committee accepts these observations, it considers that the consequences and impacts of the gateway bridge on residents have been significantly understated.

Having noted the impact, Technical Appendix F then identifies the following opportunities within the Urban Design Framework which purport to meet *"the objective of minimising adverse impacts"*:

- *Replacement of existing sound walls along the northern end of Bendigo Street;*
- *Construction of new 'green wall'/sculptural noise walls integrate with any elevated structure;*
- *An elevated shared use path, with sweeping views and optimising connectivity;*
- *Integrated screening on any elevated shared path for safety and to limit overlooking;*
- *A linear park that can create a landscape buffer and visual outlook for residents;*
- *Integrate art and active play.*

In relation to the flyover's impacts on south side of Alexandra Parade, the Committee does not accept that the proposed design opportunities/elements that purport to minimise impacts sufficiently offset and justify the demolition of 17 houses that are within a Heritage Overlay in the Yarra Planning Scheme. In this regard the Committee considers that the Reference Design of the flyover fails the CIS Land Use Objective and Performance Objective

to minimise adverse impacts, including the minimal displacement of existing land use activities, including dwellings. In reaching this conclusion, the Committee supports the road design evidence of Mr Brock that the property acquisition on the west side of Hoddle Street and north side of Hotham Street represents a “*shortcoming of the Reference Project Option*” and that other options exist that would result in fewer property acquisitions.

In relation to the flyover’s impact on south side of Alexandra Parade, the Committee considers the impacts to be unacceptable on remaining residential properties on the west side of Bendigo Street and on the east side of Hoddle Street that will have a direct view line to the ramp as it rises to the north. The Committee does not consider that the proposed design treatments will adequately offset the visual intrusion and screening effects of the noise barriers on these residential properties. Matters concerning noise mitigation measures are further discussed in Chapter 9.4 and matters concerning urban design considerations and heritage value of the properties to be demolished in this location are addressed in Chapters 8.2 and 11.2.

In relation to the flyover’s impact on the north side of Alexandra Parade, the Land Use Planning Impact Assessment Technical Report states:

*Land to the north side of Alexandra Parade (around the north-east corner of the intersection) would be impacted during construction and operation of the bridge structure as it ‘touches ground’ and connects with east-bound lanes of the Eastern Freeway. While noise would likely be an impact during construction and operation the Urban Design Principles and various design measures would assist in mitigating noise during operation. Overshadowing would not be an issue in this location as properties are located on the north side of the structure.*

The report notes that no private property acquisition “*would be required*” on the north side of Alexandra Parade to facilitate the flyover, however “*the scale of the bridge would be a permanent visual impact and would require a considered design response that address the residential interfaces.*” A number of opportunities are identified:

- *Replace existing sound walls on the southern side of Alexander Parade east with an integrated structure of high quality with enduring design elements to improve residential outlook;*
- *Rationalise Alexandra Parade east to utilise the area under the new road infrastructure to maximise opportunities for green space such as linear or pocket parks forming a landscape buffer; and*
- *Use new road infrastructure for an elevated shared user path across the existing freeway, which realises the sweeping views and offers rest spaces.*

The Committee considers the above assessment and mitigation measures to be inadequate. In reaching this finding, it supports the submissions of the City of Yarra that further consideration should be given to alternative designs, which in addition to minimising the extent of property acquisition to the south, should also minimise the visual impact of the flyover to residential properties to the north, south, east and west. In the view of Committee, the CIS assessment and proposed urban design opportunities fail to acknowledge or respond to the significance of the visual impact of the flyover, as well as the adverse noise and air quality impacts associated with the flyover on the residential

properties located to the north side of Alexandra Parade. For the above reasons, as it relates to the Hoddle Street flyover, the Committee does not support the CIS's conclusion that *"the adoption of good design principles and practices, including the adoption of an Urban Design Framework, will reduce the potential for adverse impacts from permanent and elevated structures"*.

In respect to the proposed sidetrack/deviation of Alexandra Parade the Committee has a fundamental concern that 18 residential properties, (as well as 18 commercial properties) many of which have heritage value, will be demolished to provide temporary access for construction. This issue has substantially been addressed in Chapters 6.3 and 8.2 of this report. Suffice to comment here in respect of residential impacts, the Committee does not consider that demolition of 18 houses represents an outcome that sufficiently minimises the impact of construction in this Project location.

The Committee highlights that the Impact assessment within Land Use Planning Impact Assessment at Technical Appendix F states that the acquisition and demolition of the 36 residential and commercial properties on the north side of Alexandra Parade to build the sidetrack will:

*... ultimately result in the opportunity for urban renewal of a sympathetic form that integrates with its setting.*

Demolition of the existing urban fabric in order to facilitate a temporary construction site in the view of the Committee cannot be reasonably argued as being offset by the *"urban renewal opportunity"* created by the demolition. The Committee is concerned that the process for realising the *"urban renewal opportunities"* are not tangible, lacks consideration of community input, and are, significantly, proposed to be left for the consideration of others, at some unspecified time. In this regard the Committee highlights the evidence of Ms Nesbitt which stated that urban renewal opportunity realisation is *"outside the responsibility of the LMA and is reliant on other agencies to manage and deliver urban renewal outcomes"*.

#### **(ii) Precinct 2: Alexandra Parade (Tunnel)**

The Committee accepts that the impacts of the Project on housing within this Precinct have been minimised by the construction of the road alignment in-tunnel. The Committee considers the impacts on housing have on the whole, been appropriately addressed in this Precinct. Having noted this, the Committee considers further thought needs to be given to the urban design outcomes post development within the Precinct, including opportunities to reduce the number of traffic lanes along Princes Street, as well as Alexandra Parade in Precinct 1. These issues are further discussed in Chapter 8.2 of this report. The impacts potentially arising from increased vibration and regenerated noise are addressed in Chapter 9.7.

#### **(iii) Precinct 3: Royal Park (Western Portal)**

The residential impacts within Precinct 3 are arguably amongst the most significant for any community along the Project alignment, both during construction and then ongoing once traffic on the new road link commences. A total of 55 residential properties (four houses

and 51 flats/units) are within the Proposed Project Boundary and will be demolished. This represents just over half of all residential properties to be acquired. As noted in the introduction to this Chapter, not many submissions were lodged by the owners of the properties to be acquired. The magnitude of property acquisition, on its own in this location, is however of serious concern to the Committee. It is not an outcome that can be considered to be responsive to the CIS evaluation or performance objective for Land Use and Infrastructure which seeks to minimise impacts on dwellings.

The Committee is concerned about the construction impacts of the Project within Precinct 3, and in particular on the Parkville West residents. The evidence across multiple disciplines is that the impacts will be significant for the whole of the construction period. The disruption period associated with construction was described by some as “*a generation*”, and by others as a period extending for “*a child’s lifetime*”. All agreed the disruption would be at least five years. Ross Straw Field is identified as the launch site for the tunnelling machine and is anticipated to be a major construction site for the duration of Project’s build. Section 11.4 of the Traffic Impact Assessment of CIS, Technical Appendix E, with reference to Precinct 3, states that this area:

*... would have the greatest impact. The majority of spoil from the tunnel would be transported away from this precinct and a significant portion of the tunnel construction material would be transported in via this precinct. As a result, high traffic volumes associate with construction would be occurring on the existing road network surround the precinct.*

*The main site would be established at Precinct 3, and as a consequence, staff parking would need to be provided either on site or off site with appropriate transport provisions for works to arrive safely at the site. Due to the size of the project it is estimated that the car park would be in the order of 500 car spaces ...*

*The construction activities would result in surplus of soil that may need to be treated if it is found to be contaminated prior to transportation outside the construction area for disposal or re-use purposes. Soil that is contaminated may need to be treated on site or transported to a licensed treatment facility...*

*The haulage of contaminated soil through minor roads to the designated temporary stockpiling/treatment location may increase risk of exposure of sensitive receptors such as residents in the event of a road accident occurring where the contaminated materials are spilled.*

The CIS identifies four potential local haulage routes through the Precinct to connect with the arterial network and CityLink. It states the route “*would be determined by the contractor and would be required to be approved by the relevant road authority*”. The four identified routes include:

- Haulage Route 1: Travelling north from Precinct 3, along Oak Street, Park Street, Brunswick Road to CityLink.
- Haulage Route 2: Travelling south-west from the precinct, along Oak Street, Manningham Street, Church Street, and Flemington Road to CityLink.
- Haulage Route 3: Constructing the north-facing ramps connecting Precinct 3 directly with CityLink.

- Haulage Route 4: Construction of a new track through Royal Park and connecting to Brens Drive and Elliott Avenue.

The impacts on the local road network will be significant for the life of construction with more than 1,000 truck movements per day projected on some of the above haulage routes.

The Committee does not accept the evidence of Ms Nesbitt that the amended Performance Requirements C1 and T2 are adequate to offset social impacts of the Project, nor does it accept that these appropriately address social equity issues as they relate to the Flemington Housing Estate Residents. The Committee favours the competing evidence of Ms Rosen that residents in the Flemington Housing Estate have multiple and complex risk factors and vulnerability. She said that the Project's proposed placement of the Part B viaduct adjacent to the Estate's window sill and doorstep will have permanent impacts on the community including visual intrusion, noise and vibration, light spill, reduction in air quality, and visual severance. The Committee agrees with her evidence that permanent, cumulative negative direct impacts on these residents is a relevant consideration and that the increases in existing inequities in health and wellbeing include:

- *Inability to open windows, insomnia, lack of access to sunlight;*
- *Stigma and reduction in pride in surroundings due to road, vandalism;*
- *Potential reduced engagement in physical activity; and*
- *Loss of confidence in process.*

The key elements of the portal design that the Committee considers are flawed in relation to the impacts on dwellings and residential communities as the Reference Design is drafted, are the two main elevated structures identified as '*Footscray Rd to EWL (Stage One)*' and '*EWL (Stage One) to Footscray Road*' that head south. These two links are responsible for the demolition of the 55 dwellings on Manningham Street and the corresponding severance and disturbance to this Parkville West community (including houses and flats along Manningham Street, Lennon Street, Oak Street including the Elderly Chinese Home and newer houses within the former Commonwealth Games Village complex). Other than for the portion of the Project's (Stage One) ramp to Footscray Road that deviates to provide a southerly ramp link to CityLink, this proposed overhead infrastructure heading south extends to the west of the current CityLink alignment. This has the potential to cause additional interface conflicts with substantial established residential communities including the Flemington Housing Estate at 120 and 126 Racecourse Road which comprise 920 apartments with approximately 3,500 residents, apartments on the east side of Mount Alexander Road and to the west of CityLink, and the Bent Street apartments and residential properties in Kensington.

All of these residential communities are identified as being outside the Proposed Project Boundary. While the CIS acknowledges that the new elevated structures would have permanent visual impacts on the area's character and amenity, the Committee agrees with the many submissions that stated the impacts on these communities have been subject of cursory assessment and consideration. The Committee does not accept that the application of the UDF will have the capacity of "*mitigating these visual impacts*". The Committee considers that the impacts need to be avoided through adoption of a different design outcome. In this regard, it accepts the evidence of both Mr Higgs and Mr O'Brien, the submissions by Ms Aly of the Flemington Neighbourhood Renewal Board, and Mr Peyton for Safety Net for Royal Park and the many other community groups and individuals that

alternatives design could be undertaken that would reduce residential impacts. These should be further investigated and a solution found that does not impact on existing residential communities.

In relation to the residential impacts arising from the construction of the Ormond Road off-ramp, the Committee acknowledges submissions lodged by residents within suburbs such as Moonee Valley, Brunswick West, and Ascot Vale that they are concerned with likely increases in traffic, and corresponding negative impacts on residential amenity, arising from new traffic on the local network. In this regard, the Committee agrees with the evidence of Mr Henshall that a range of properties may be negatively impacted by additional noise and rat-running. However, the Committee agrees with the LMA and the majority of road design and modelling experts that appeared at the Hearing who found that the inclusion of the Ormond Road off ramp will add convenience for residents and possible businesses in the area. The merits or otherwise of the Ormond Road off ramp have been discussed already in some depth in Chapters 6.5 and 6.6. The Committee found that the ramp is justified from a traffic aspect, although the Reference Project should be modified to reduce impacts. Nothing in relation to the likely impacts on housing within this Precinct justifies altering this position.

On balance having considered the evidence and submissions before it, in response to the Committee's Terms of Reference 7(b), the Committee considers that the impacts of the Project on housing within Precinct 3 have not been appropriately addressed. In this regard the Committee agrees with the submission of Ms Hicks.

While these communities are located outside the narrowly defined Proposed Project Boundary, it is the view of the Committee that these local communities will experience significant reduced amenity and adverse impacts, both during construction and ongoing operation of the southerly elevated road structures. The resultant negative impacts of these southerly links on the residential communities of Parkville West, Travancore South, Flemington Public Housing Estate and Kensington residents are of such a scale that in the view of the Committee, they should not form part of the approved Project and that further work needs to be done.

The Committee does not share the same level of concern regarding the two northerly links – identified as '*CityLink North Connection to EWL (Stage One)*' and '*EWL (Stage One) to City North Connection*'. Both of these northerly links do not require residential property acquisition and the Committee considers that flexibility exists within the Proposed Project Boundary to orientate these links to further reduce permanent impacts on Ross Straw Field.

#### **(iv) Precinct 4: CityLink**

The Committee has discussed the potential residential impacts on people living west of the CityLink alignment that may be impacted by the construction of the Ormond Road off ramp in its assessment of Precinct 3. In essence the Committee considers that the impacts on housing will not be significant, assuming the alignment stays within the Proposed Project Boundary.



**(v) Precinct 5: Port Connection**

In addition to the 13 residential properties (and 12 commercial properties) that are earmarked for demolition in the Precinct in order to accommodate “*project structures and construction laydown/depot areas*”, the major immediate and enduring impacts on housing within Precinct 5 relate to the significant noise, visual intrusion, overshadowing, air quality, light spill and safety impacts that will result for existing residents in Kensington whose properties will abut the Part B viaduct connection to the Port. The most significant property impacts in this category are on the 53 apartment owners at 18 Bent Street.

In relation to these properties, the CIS states that the recently finished apartment complex at 18 Bent Street “*would not be acquired, but its close proximity to the project viaduct would result in adverse amenity impacts, particularly for those apartments facing the viaduct*”. Based on the submissions and evidence presented to it, and the lack of identification or any mention of the Bent Street apartments in the October 2013 background Land Use Planning Impact Technical Report, the Committee accepts submissions that the early planning of the alignment through Precinct 5 was undertaken in absence of awareness that the apartments existed. This is unfortunate as the impacts of the viaduct on the apartments will not only be significant, they are compounding and enduring. In reaching this finding the Committee accepts the adverse evidence of Mr Henshall and the many objecting submissions from community groups and individual submitters.

As noted in the evidence and submission summary, the proposed Part B alignment traverses through the Arden-Macaulay Structure Plan Area, an area acknowledged by the LMA being planned as “*a dense, mixed-use inner city suburb*”. The Committee accepts the evidence of Mr Henshall and the submissions of Mr Pitt over those advanced by the LMA in regard to the likely long terms impacts of the Part B viaduct on the planned residential and mixed use redevelopment ambitions for the Arden-Macaulay Structure Plan Area. Additionally, the impacts on the continued restoration of the Moonee Ponds Creek as reflected in the Incorporated Document that is IPO5 in the City of Melbourne Planning Scheme may be compromised. The Committee is concerned that the construction of the Arden Street Ramps may further compromise the existing and future mixed use residential amenity of the area.

**7.2.5 Findings****(i) Precinct 1: Hoddle Street – (Eastern Portal)**

In respect to the impacts on residential land use and dwellings within Precinct 1, the Committee finds that post construction, the in-tunnel roadway responds well to the CIS evaluation and performance requirement objectives which seek to minimise impacts on residential properties. However, the Committee does not consider the ancillary aspects of the Project within this Precinct, these being the Hoddle Street flyover and the temporary sidetrack, adequately address the objective of minimising residential impacts. The Committee finds that both these ancillary elements fail the CIS evaluation and performance objective for Land Use and Infrastructure as they pose unacceptable impacts on dwellings and residential amenity.

Based on the submissions and evidence presented during the Hearing, the Committee considers that alternative design options should be explored that would be more responsive

to the Land Use objective. The Committee notes that any redesign of the road in this Precinct that achieves more of it being covered/in-tunnel, particularly by relocating the portal to the east of Hoddle Street, and adoption of construction techniques and scheduling to negate the need for a temporary road deviation or sidetrack, would represent significant improvements that would better achieve consistency with the CIS objective to minimise residential impacts. The Committee considers that Project Approval should be conditional on the ancillary project elements in Precinct 1 being re-designed.

Should these outcomes ultimately not be supported, and a flyover and sidetrack similar to those reflected by the Reference Project are determined to be acceptable design outcomes, the Committee recommends further property acquisitions should be offered to residential property owners that have an interface with these ancillary elements of the Project.

**(ii) Precinct 2: Alexandra Parade (Tunnel)**

In respect of Precinct 2, the Committee accepts that the impacts of the Project on dwellings within this Precinct have been minimised by the construction of the road alignment in-tunnel. Issues concerning urban design outcomes post construction, and ongoing vibration and regenerated noise issues are addressed elsewhere in this report.

**(iii) Precinct 3: Royal Park**

In respect to the impacts on residential land use and dwellings within Precinct 3, the Committee finds that the two main elevated structures identified as '*Footscray Rd to EWL (Stage One)*' and '*EWL (Stage One) to Footscray Road*' that head south are unresponsive to the CIS objective Land Use and Infrastructure objective of minimising impacts on dwellings. The Committee concludes that the impacts of these two elevated structures are unacceptable and that alternative options should be explored. The Committee recommends their exclusion from the Project.

Should this outcome ultimately not be supported, and elevated viaducts heading south similar to those reflected by the Reference Design are determined to be acceptable design outcomes in this Precinct, the Committee recommends further property acquisitions should be offered to property owners that have an interface with, or are significantly impacted by, with these ancillary elements of the Project. Equitable mitigation actions for Flemington Housing Estate residents should be identified and implemented in consultation with the Flemington Neighbourhood Renewal Board and the Department of Housing (eg, apply double glazing to easterly facing windows and installation of air-conditioners). Further recommendations regarding the Flemington Community Centre and Flemington Community Gardens are provided in Chapter 7.4 of this Report.

In relation to the housing impacts arising from the construction of the Ormond Road off ramp, the Committee considers that while that the off ramp will generate additional through traffic on the local road network, it does not consider that the impacts on housing and residential amenity will be such that warrant its removal from the project.

**(iv) Precinct 4: CityLink**

The Committee does not consider that the Project will pose unacceptable housing impacts within Precinct 4.

**(v) Precinct 5: Port Connection**

In relation to the Committee's Terms of Reference in respect of Public Hearing Matter 7(b), the Committee does not accept that the impacts on housing in Precinct 5 have been appropriately addressed, nor is it satisfied that the impacts on either existing or planned residential development in the Precinct been minimised. The Committee recommends that the Part B viaducts and ancillary off ramps should be excluded from this Stage of the Project.

If this outcome is ultimately not supported by Government, residents abutting the alignment within the Precinct, including apartment owners at 18 Bent Street should be afforded the opportunity to have their properties acquired.

**7.3 Impacts on Recreation Facilities and Open Space****7.3.1 Introduction**

The CIS identifies sporting and recreational facilities as community resources and has included them in its overarching assessment together with parks, schools and education institutions, health centres and hospitals, community centres, community gardens, museums, and libraries. It acknowledges that sporting and recreation facilities, as well as other community assets, can serve either a regional or local catchment, or in some cases a mixture of the two.

Table 8-1 within Chapter 8 of the CIS is titled '*Existing land uses within or adjacent to the Proposed Project Boundary*', and contains the following description of '*Sport and Recreation*' facilities:

*A variety of sporting facilities and recreational opportunities are available within and adjacent to the project area, including parkland and walking and cycling trails. Sporting facilities are generally located towards the western end of the project area (precincts 2 and 3). These facilities provide a valued recreation resource to both the local and wider population.*

*Royal Park is a major recreational land use in its own right, comprising 170 hectares of open space, sporting facilities, walking paths and native gardens.*

The significant Sport/Recreation assets or values identified in Table 8-1 include:

*Royal Park, Ross Straw Field, Princes Park, Edinburgh Gardens, Fitzroy Pool, Debney's Park, Merri Creek and Moonee Ponds Creek trails, State Netball and Hockey Centre, Royal Park Golf Course, North Melbourne Cricket Ground, Moonee Valley Racecourse, Travancore Park, Delhi Reserve, Holbrook Reserve, Ormond Park.*

The '*Impact Assessment*' documented at Chapter 8.2.1 of the CIS notes that during construction, temporary access will be required across a small section of Moonee Valley Racecourse and that temporary occupation of sections of parkland and open space will be

required including “sections of Travancore Park, Debney’s Park, Holbrook Reserve, Ormond Park and Moonee Ponds Creek Linear Reserve”.

In relation to works at the Western Portal in Precinct 3, the assessment indicates that there will be significant temporary disturbance to the western end of Royal Park, resulting in “areas of the park not being accessible for recreational use (including shared walking/bicycle paths) as well as acquisition of public land at Ross Straw Field and disruption to sporting clubs”. Once construction is completed, the ongoing operational impacts identified include “partial acquisition of a small strip of Debney’s Park and partial acquisition of small sections of Ormond Park, Holbrook Reserve and council-owned and Crown land south of Ormond Road”.

The Committee’s assessment in relation to recreation facilities focuses on whether the impact of the Project on active playing fields and local parks “has been appropriately addressed” (Public Hearing Matter 7(b) – Committee’s Terms of Reference), and whether impacts on local parks and sporting facilities have been “minimised” (CIS Land Use Evaluation Objective and Performance Objective). This assessment considers construction impacts and permanent impacts and the adequacy of proposed measures to make good adverse impacts attributable to the Project.

Impacts on community facilities (including the Flemington Community Centre, and the Flemington and Essendon Community Gardens) are addressed in Chapter 7.4 and cultural heritage, visual, and passive open space impacts on Royal Park are addressed in Chapter 8 of this report.

### **7.3.2 Key Issues**

The assessment focuses on physical impacts as well as utilisation impacts for key local parks and active recreational facilities, and active and passive open space affected by the Project which include:

- Impacts on City of Melbourne facilities including playing fields in Ross Straw Field and Royal Park, as well as the Manningham Street Playground;
- Impacts on City of Moonee Valley facilities including the playing fields in Debney’s Park, Fenton Street Reserve (Essendon Hockey Fields), and Ormond Park as well as impacts on the local parks within the Moonee Ponds Creek Linear Park (Delhi Reserve, Travancore Park, Brisbane Reserve, and Fenton Reserve); and
- Impacts on Moreland City Council facilities including playing fields at Holbrook Reserve.

### **7.3.3 Evidence and Submissions**

#### **(i) Linking Melbourne Authority**

The Social Impact evidence of Ms Nesbitt for the LMA (Document 96) is that she does not support submissions that concluded that the impacts of the Project on sportsgrounds, sporting activities, open space and community space/facilities in Royal Park will impact negatively on community health and wellbeing. Her reasoning was that:

- Community health and wellbeing is more reliant on Social Determinants of Health;

- The capacity of sportsgrounds can be increased which is more efficient and sustainable than additional land acquisition; and
- The \$15 million package of works to increase playing field capacity at Royal Park will make good the negative impacts of the Project.

Ms Nesbitt recommended modifications to Performance Requirements and inclusion of new mitigation measures *“to ensure that the desired social outcomes for the project are delivered”*. Those that relate to active or passive open space include:

- *Consultation with relevant sporting facilities, community facilities including the Flemington Community Centre and councils to explore potential relocation/design improvements of equal or improved access and quality. Where possible, relocation/redesign is to be undertaken prior to closure of the facility for public use;*
- *Relocate the Debney’s Park playgrounds to another site within Debney’s Park undertaken in consultation with the Office of Housing, City of Moonee Valley and Flemington estate residents; and*
- *Establish a Community Grant program to operate during the construction of the project to fund community support activities and small capital works targeting community, supporting and recreation facilities in the local region as defined in the Social Impact Assessment.*

In relation to the LMA’s acceptance of the above measures, Ms Nesbitt noted that *“This modified mitigation measure is consistent with the LMA’s response to the Assessment Committee Request for Information Item No 81 which is supported”*. The Committee notes however that while the s57(4) response includes these actions, they specifically respond to the needs of the Flemington Housing Estate residents, as opposed to having Project wide application. Question 81 from the Committee was specific to identification of impacts and mitigation measures on residents of Debney’s Park. The lead sentence in the LMA’s s57(4) response where these additional performance measures are listed stated:

*Potential mitigation measures that could be put in place to address social impacts on residents living within the Estate include ... (Committee emphasis)*

Accordingly, in relation to the proposed *“consultation with relevant sporting facilities”* the recommended additional measure, as noted in the s57(4) response, relates to the facilities at Debney’s Park fields, not throughout the entire project area.

In relation to the Community Grant measure, the LMA submitted in closing that *“it is not appropriate to include establishment of a community grant program in the PR’s as the administration of any such program would be the State and not the private contractor”*.

Having noted the above, the Committee highlights that the final version of the LMA’s Performance Requirements does include requirements to relocate both the Debney’s Park Playground and the Manningham Street Play Ground, (Refer Land Use and utility assets PR code LU4).

The LMA provided a supplementary response by Ms Nesbitt to other tendered social impact expert reports (Document 97). In this response Ms Nesbitt stated that addressing the future recreational needs of the City of Melbourne was outside the scope of the Project. She

stated that the LMA and Council's agreement to a \$15m works program to upgrade existing playing fields in Royal Park is an appropriate response to accommodate existing users through increased field capacity. The statement noted that *"opportunities also exist through the community use of both private and school sportsgrounds to minimise land acquisition and provide a more sustainable approach to sports ground provision. This approach is consistent with sustainable leading practice used by land managers across Australia to address future recreational needs"*.

The LMA provided additional information during the Hearing relating to the reinstatement of sporting facilities affected by the Project (Document 203). It noted that the construction of the Project will impact directly on Royal Park (Manningham Parklands/Ross Straw Field, Old Hockey Fields south of the State Netball and Hockey Centre), and *"may have a much less invasive impact on facilities at Ormond Park and Holbrook Reserve"*. The document noted that reinstatement of facilities will be addressed through:

- *Works being undertaken by the Cities of Melbourne, Hume and Moonee Valley in advance of East West Link works to accommodate displaced sporting clubs; and*
- *Works to be undertaken in the Cities of Melbourne, Moonee Valley and Moreland by the EWL project company as part of their reinstatement or Accommodation.*

Stated 'Initial works' will total approximately \$15m, and are made up as follows:

- *City of Melbourne (CoM). A Memorandum of Understanding (MoU) between CoM and LMA was finalised in December 2013 regarding works to be undertaken in Royal Park and Princes Park. The agreed estimate for these works was \$13.1m although a contingency of up to \$1m has been provided. No drawdown of this contingency can be made without the prior agreement of the State and it may be that a scope modification would be employed first. At this stage, the CoM is about to award the first contract relating to works in Princes Park. The breakdown and estimate of costs associated with the CoM works is provided as Appendix D in the MoU.*
- *City of Hume. Agreement has been reached with the City of Hume on the construction of a new oval at Greenvale Reserve to accommodate the junior Greenvale Cricket teams that currently play at JJ Holland Park. This will allow Mercantile Cricket Club, which currently plays at Ross Straw Field, to play at JJ Holland pending a longer term relocation back to Royal Park. The agreement with Hume has been confirmed by way of an exchange of correspondence between LMA and Hume where an amount of \$840,000 will be contributed to the oval costs.*
- *City of Moonee Valley. Sports and Recreation Victoria (SRV) has negotiated with Moonee Valley the temporary relocation of Melbourne University Baseball Club, that currently uses Ross Straw Field, to the Moonee Valley facility at Boeing Reserve Strathmore. SRV has confirmed a payment of \$250,000 (plus an additional annual operating fee) and this will be transferred via an existing agreement between SRV and Moonee Valley. This*

*arrangement is in lieu of the temporary relocation to the baseball facility at Altona and is the preferred outcome by the affected parties.*

*In addition, discussions have been held at officer level with Moonee Valley about possible effects on Ormond Park during the EWL construction period. Whilst there is no impact on the playing surfaces, there may be a requirement for co-ordination of access to the pavilion for a short period during construction. It is also likely that there would be some permanent loss of existing car parking east of the soccer pitch. The EWL contractor will need to work with Moonee Valley to mitigate any such impacts.*

In addition to the above works, the LMA advised that it “has sought from the bidding parties by way of a Pre-Agreed Modification, pricing for the construction of sporting fields as part of the reinstatement of areas disturbed at the Old Hockey Fields.” These works (within Royal Park to the South of the State Hockey Centre) are to provide:

- Two purpose build and designed baseball diamonds;
- Two full sized soccer pitches;
- Two synthetic cricket wickets;
- Three half sized soccer/touch fields; and
- Together with appropriate irrigation, lighting and change rooms.

These additional works (Appendix 3 of the MoU) would not occur until after the Project construction works in this area has been completed. The LMA advised that they are part of the arrangements to achieve the permanent relocation of sporting clubs displaced by the Project.

Appendix B of the MoU titled Land, shows the location of the proposed works which extend to the south and west of the State Hockey and Netball Centre, and to the south of Urban Camp. In addition to the marked sports fields, the plan indicates seven light towers, and a pavilion. The construction of the sports fields and accompanying works will require vegetation clearance. Mr Morris confirmed on behalf of the LMA that the works listed in Appendix C of the MoU (Document 204) are to be funded separately and in addition to the \$15m reinstatement works.

The closing submission for the LMA discussed and challenged the evidence and submissions presented by the City of Melbourne, sporting groups and individual submitters in respect to impacts of the City’s active playing fields and local parks. These matters are addressed by the Committee later in this chapter.

## **(ii) Impacts on City of Melbourne Facilities**

The presentation slides of Mr Porteous for the City of Melbourne (Document 127) noted that the City has a number of adopted strategies and Master Plans for its active and passive open spaces. He submitted that based on anticipated population growth projections, and projections of sport participation rates at 2031, the City will require an additional 10 AFL grounds, 12 Cricket grounds, and 12 Soccer fields. Mr Porteous advised that Ross Straw Field is currently utilised formally by nine clubs including baseball, cricket, soccer and touch. The old grass hockey field/lawn is utilised by seven clubs including soccer, touch and AFL. He advised that the MoU will “effectively accelerate development of Council approved Park

*Master Plans for facilities within Royal Park and at Princes Park.* On top of this contribution, he noted that the Old Grass Hockey fields will be upgraded post construction with an extensive range of facilities at the cost of the project contractor. Mr Porteous acknowledged that these initiatives will address medium term capacity issues. In relation to negative impacts of the Project, Mr Porteous advised that the loss of Ross Straw Field “*reduces the long term opportunity to build capacity which was the Master Plans original intent*”.

The presentation slides of Associate Professor Townsend for the City of Melbourne (Document 120) noted the recreational value of parks, and highlighted their importance in child development, in alleviating stress, and preventing obesity, diabetes, and cardiovascular disease. She concluded that the loss of Manningham Street Reserve Playground, and reduction in active sports field areas will have detrimental impacts on direct neighbouring populations as well as broader metropolitan wide impacts during both construction and operation.

Mr Pitt submitted that the \$15m worth of open space enhancement works specified in the MoU and the works to be provided by the contractor, do not detract from Melbourne City Council’s primary position that the construction and operational impacts of the Project are unacceptable on Royal Park and Ross Straw Field, and should be avoided.

### **(iii) Impacts on City of Moonee Valley Facilities**

Ms Rosen’s Social Impact presentation slides (Document 190) noted that the Debney’s Park Precinct (including the \$2.6m Debney’s Park Playground and the Sports Oval) will suffer severance, displacement, visual intrusion, air pollution, groundwater pollution, compromised real and perceived safety, overshadowing, loss of vegetation, and storage of construction materials. She concluded that these direct, cumulative permanent and temporary social impacts compromise health and safety in a number of ways, are unacceptable and not adequately addressed.

In relation the Moonee Ponds Creek Linear Park, (Delhi Reserve, Travancore Park, Brisbane Reserve, and Fenton Reserve), Ms Rosen’s evidence was that it will variously suffer physical and visual severance, noise, visual intrusion, air pollution, groundwater pollution, compromised real and perceived safety, overshadowing, loss of vegetation, and property acquisition. Ms Rosen highlighted that direct, cumulative permanent and temporary social impacts compromise health and safety by:

- *Detracting from both the quality and quantity of public open space, affecting capacity to provide opportunities for engagement in social and physical activities; and*
- *Reducing capacity to function as an integrated regional open space resource.*

In relation to the Moonee Valley Sports Club and the Essendon Hockey Club, Ms Rosen highlighted that the facilities will suffer severance, displacement, visual severance, visual intrusion, light spill, noise, air pollution, groundwater pollution, compromised real and perceived safety, overshadowing, loss of vegetation, property acquisition and property damage. These impacts concerned her as she considered they will result in:

- *Increasing pressure on existing space;*



- *Detracting from both the quality and quantity of public open space, affecting capacity to provide opportunities for engagement in social and physical activities and operate sustainably (financially and environmentally); and*
- *Reducing capacity to function as an integrated regional open space resource.*

In relation to likely impacts on sport and recreation areas within Moonee Valley, Mr Henshall (Document 152) concluded:

- *Areas likely to be impacted: Ormond Park, Debney's Park, Debney's Park Community Centre, Debney's Park Playground, Delhi Reserve, Travancore Park, Moonee Valley Racecourse, Essendon Community Garden, Essendon Hockey Centre;*
- *Recognised in CIS as "significant assets or values", but they lose access to land and facilities during construction, and may have no or limited access post-construction;*
- *Impacts: noise and air pollution, visual intrusion, land loss, access loss. Direct financial costs in some cases;*
- *'Knock-on' effect with loss of access to playing fields/facilities at Royal Park. Places pressure on other inner/near city playing areas and facilities;*
- *Moonee Ponds Creek Trail- potential disruption will need to be addressed by LMA; and*
- *These impacts not adequately recognised in CIS. Evidently a need for more consultation, based on my review of submissions.*

The submission of Ms Hicks (Document 194) was particularly scathing in relation to the CIS and its consideration of land use and infrastructure impacts. She stated:

*It was agreed at the social conclave that a list of community facilities be drawn up. This is an excellent starting point but that this starting point is agreed at this stage of the process is indicative of the insubstantial level of analysis that has been undertaken to date.*

The submission noted that unlike the City of Melbourne, Moonee Valley has no MoU with the LMA and further, unlike the "two other Councils", which Ms Hicks understood to be Darebin and Moreland, Moonee Valley has not received \$1.9m in compensation payments.

As a result of the lack of a MoU, Ms Hicks advanced through the Hearing that new performance measures and or conditions are required to achieve the mitigation measures necessary to make good the impacts on open space and sporting clubs as a result of the Project (as proposed by Appendix A of Council's original written Submission, 712). Ms Hicks was particularly critical that the LMA had not progressed discussions with Moonee Valley in order to resolve its concerns via a MoU. Ms Hicks submitted:

*Where significant impacts are not avoided and cannot be mitigated by application of the UDF/UDP, other methods to address impacts must be found. As for City of Melbourne so also for Moonee Valley, replacing areas of land lost to open space or significantly compromised will be hard to replace.*

*The suggestions Council makes at Appendix A are some ways to "manage" the impact. The necessary connection with the project is made out in the table*

*Design Interventions for Moonee Ponds Creek Budget and Justification and Moonee Valley response to LMA's response in its material of 11 February.*

*Much of the response calls for a consideration at the detailed design stage but this provides no certainty to Moonee Valley and robs it of the chance to secure an appropriate package of mitigation for its residents and visitors.*

Ms Hicks reiterated in closing that Moonee Valley City Council was not in such a fortunate position as the City of Melbourne, *"It is inequitable to treat different Councils differently. Council is happy to sit down with the LMA and work through issues, costs. The offer has been made previously and remains open"*.

A detailed list of design interventions noted in the extract above, those sought by Moonee Valley for Moonee Ponds Creek are listed in Document 172. These include Evans Street Access Path, Evans-Hope Pedestrian Bridge, Bent Street Reserve, Wilson Street Underpass, Moonee Valley Racecourse, Dean Street Underpass, Ormond Road, Travancore Park, Mount Alexander Road Underpass, Mount Alexander Road and Flemington Street Bridge.

Ms Hicks noted that other than the Evans Street Access Path, all of the items listed will be impacted if the Reference Project is realised. With respect to the Evans Street Access Path, Ms Hicks acknowledged that the works would represent a good offset, and should be considered, even though access could be provided further north.

With regard to the Flemington Street Bridge, Ms Hicks tendered a *"conceptual view"* (Document 195) which her Council sought to ensure that its realisation is not compromised by the Project. It was submitted that the plan provides for highly important/significant pedestrian and bike links to the Debney's Park Playground, as well as links to various bike trails leading north, south and east and west.

In addition to the above design interventions, Document 172 contains a table of the *"Open Space Master Plan Requirements"* that Moonee Valley City Council sought to have advanced via the LMA to ameliorate impacts of the Project on Moonee Valley's open space network. It specified that Master Plans need to be implemented and delivered through consultation and agreement with the community and Moonee Valley for the following:

- Debney's Park Playground Master Plan;
- Travancore Park Design;
- Ormond Park Master Plan; and
- Moonee Ponds Creek.

During Ms Hicks closing submission, she expressed disappointment that the LMA had resisted accepting but few of the suggested remedial actions. In support of this view, Ms Hicks submitted a consolidated table of all requested changes and Council's response to the LMA's response.

The closing submission for the LMA noted the evidence and submissions presented by the City of Moonee Valley in respect to impacts of the Project on public open space. These matters are addressed by the Committee later in this chapter.

**(iv) Impacts on Moreland City Council Facilities**

Mr Griffiths for Moreland City Council submitted that the loss of the 2.88 ha of Holbrook Reserve jeopardises Council's ability to provide adequate recreational opportunities in a location convenient to a growing population. Removal of the Ormond Road off ramp from the Project is requested, with such an outcome enabling critical elements of Holbrook Reserve to be preserved.

**(v) Representative Community and Resident Submissions**

Many sporting clubs and associations as well as many individual submissions stated that they oppose the Project due the impacts on local parks and sporting fields as well as on their organisations, participants and spectators. The Committee highlights that 1,077 submission numbers are listed in the attachment to Ms Nesbitt's evidence statement as raising the following issue:

*Loss of and impact on existing and proposed open space, sporting and community facilities (other than Royal Park) is unacceptable and will impact on community health and wellbeing.*

A representative sample of submissions that canvas issues identified is provided below.

The Mercantile Cricket Association which heavily utilises Ross Straw Field noted their strong opposition to the Project (Submission 73). The presentation by Mr Alec Kahn to the Hearing (Document 294) noted that short and long term options contained in the MoU between the LMA and City of Melbourne is a "beggar-thy-neighbour" approach where the impacts of the Project are resolved for one group, but then shifted to others. Examples cited include the upgrades to Flemington Road, Holland Park and Poplar ovals, which he said will negatively impact access currently enjoyed by various groups including W. Leadbeaters, YPPC Juniors, Flemington Colts and Royal Park Reds. The Association was critical of the lack of understanding regarding access requirements and timing, citing examples where proposed solutions are ill conceived, late and unworkable. The submission concluded that if the Project was to proceed, the Association requested:

- That the Association is able to maintain access to Ross Straw Field until its new home at Flemington Road is ready for use;
- The Project supply two extra fields by October 2016 to redeem the 5-7 year loss of access to the Old Grass Hockey Fields and permanent loss of Ross Straw Field No. 3 Oval; and
- The Project build two new fields on the City of Melbourne 'mound' proposal.

The Brunswick Zebra's Football (Soccer) Club (Submission 1291 and Document 307) and the Essendon Royals Soccer Club (Submission 430 and Document 308) addressed the Committee. Both reiterated their opposition to the Project due to the impacts on Ryder, Ransford and Macalister grounds in Royal Park, on Holbrook Reserve in Brunswick and Ormond Park. The presentations on behalf of both clubs demonstrated significant potential impacts. The *Zebbras* sought modification to the Performance Requirements which would specify actions to relocate the Club from Holbrook Reserve, including compensation to be used to upgrade the pavilion at Balfe Park, Brunswick and the installation of a synthetic pitch. The clubs considered further assessment should be completed to determine options

to purchase properties that could be incorporated into an expanded Royal Park. The *Royals* submitted further assessments should be undertaken, with involvement from Council and the Club, and suitable relocation options are identified and realised if the Project proceeds.

Moonee Valley Sporting Club Inc (Submission 572), an umbrella body for the organised sporting and recreation users of Ormond Park submitted that a raft of issues facing the users of the park have not been addressed in the CIS. The Club expressed concern that the CIS stated that temporary occupation of sections of parkland will be required for construction. Permanent impacts include loss of land, loss of parking and water storage. Detail is lacking regarding the ability to use the Park during construction for cricket and football, the extent of impacts on the Park's redevelopment plans, loss of income from gate takings due to loss of home games, and reinstatement of suitable access arrangements and parking.

Mr Rick Boykett presented on behalf of the Melbourne University Rugby Union Football Club (Submission 561 and Document 316). The Club is a founding member of Royal Park Sport, the umbrella group representing active recreation users of Royal Park and Princes Park. They are concerned about the impact of the Project on the loss of access to suitable competition-grade fields, change rooms and social facilities. Meaningful compensation was sought to offset loss of income. Mr Boykett asked that Royal Park Sport be included on any steering group established to liaise with the LMA and the contractor. Re-establishment works were also specified.

The Royal Park Sport submission (1079) and presentation (Document 315), also by Mr Boykett outlined the cascading impacts for over 20 clubs from the loss of sports fields during construction if implementation is not handled carefully. Forward planning and action in advance of construction was sought. Securing water supply from the tanks under Ross Straw Field was considered critical as was effective communication with all clubs and user groups.

The presentation by Mr Smith (Document 325) for the Kororoit Institute (Submission 313) stated that the impact on sporting grounds and user groups will be significant and the 'knock on' effects on some user groups (eg Royal Park Reds) is "*offensive*".

The submissions by Mr Pederson on behalf of the University of Melbourne Baseball Club Inc (Document 319), Mr Sinclair on behalf of the Youlden Parkville Cricket Club (Submission 54 and Document 351) and the submission by Mr Zika on behalf of the Royal Park Reds (Document 354) all raised significant logistical and scheduling issues as well as concerns regarding the impacts on their members and financial viability.

Mr Lester (Submission 321 and Document 121) expressed concern regarding the significant short and long term impacts the Project will have on recreational areas, particularly adjacent to the Moonee Ponds Creek.

#### **7.3.4 Discussion**

##### **(i) Impacts within the City of Melbourne**

With regard to the impact of the Project on sporting facilities within the City of Melbourne, the closing submission of the LMA contained significant commentary on the evidence led by the City of Melbourne in relation to the loss of sporting fields within Ross Straw Field. Mr Morris submitted that while the LMA acknowledges that demand for sporting facilities will

increase in the City as a result of population growth over time, it does not accept Mr Porteous' projections that the City will require an additional 10 AFL grounds, 12 Cricket grounds, and 12 Soccer fields by 2031. The LMA does not accept these projections for a number of reasons, including that they were based on provision rates in green-field growth areas and that they fail to appropriately acknowledge presence of facilities on the fringe, but outside of the City of Melbourne. The Committee accepts LMA's position on this and acknowledges the concession made by Mr Porteous under cross examination that upgrading of grass ovals to synthetic surfaces (as proposed for Crawford Oval and the Old Grass Hockey Fields with funding arising from the MoU between Council and the LMA) will increase capacity of those fields that are upgraded.

The Committee further accepts LMA's submission that a net increase in capacity of the City of Melbourne sporting fields will result as a consequence of the Project due to works funded by the MoU (even taking into account the loss of two fields at Ross Straw Field). In noting this, the Committee accepts the City of Melbourne's submission that the works will occur at some time, however, the Committee considers that MoU's contribution of \$14.1m from the State Government (via the LMA) and the significant package of contractor works on the Old Grass Hockey Fields have made possible the realisation of the additional facilities at this time. As acknowledged by Mr Porteous, "*no funds had been allocated by the Council to undertake these works*". It agrees with Mr Morris that:

*There is accordingly no basis upon which the Committee could conclude that, but for the Project, these works be undertaken in either the short or medium term.*

An additional positive consequence of the MoU works was highlighted by Mr Morris, that being that the funds that would have been allocated by Council to undertake the \$14.1m upgrade of facilities which are now being provided by the State can be now reallocated to other projects. The Committee accepts this as a logical argument, and on face value, represents a relevant and positive outcome of the Project, albeit at a loss of parkland that would have otherwise remained.

In relation to the sum of works proposed contained in the MoU Mr Morris concluded:

*The Committee should conclude that the impacts of the Project on active recreation within the City of Melbourne will at the very least be wholly offset. Indeed, it is apparent that the works contemplated under the MoU will in fact significantly improve the provision of sporting facilities within the municipality.*

The Committee accepts this submission. Having noted this, the Committee acknowledges that the loss of the playing fields at Ross Straw field will reduce the net long term capacity within the City and represents an undesirable outcome. The Committee prefers this outcome to be avoided.

In respect of submissions from sporting clubs, players and associations within the City that are concerned about impacts on scheduling and flow on impacts for other groups, users and spectators as a result of the loss of Ross Straw Field ovals and construction issues, the Committee considers that these issues are critically important for the LMA and the City of Melbourne to understand and militate. The Committee notes the MoU contains, at Appendix A, Part 2, an "*Indicative Strategy*" to address the relocation of sporting users of

Royal Park. It is somewhat understandable, but unfortunate, that due to the timing of the commercial negotiations between the LMA and City that this information was not contained in CIS. Had the indicative strategy been in the public arena, some or many concerns expressed by user groups may have been allayed. The Committee notes that the majority of submitters to the hearing were unaware of the MoU, let alone the detail of proposed remedial works.

Of particular interest to the Committee was the list of obligations for the City of Melbourne that are specified in Section 5 of the MoU, which stated the obligations in relation to the Relocation Works as follows:

- *to develop a construction program for each affected sporting facility to ensure that all required land is delivered on time;*
- *to provide, generally consistent with the Indicative Relocation Strategy included as Appendix A Part 2, on-going advice and to manage all existing sporting clubs (and sporting club members) about arrangements for, and timing of, the utilisation of alternative sporting facilities; and*
- *to manage and maintain interaction with all other relevant stakeholders regarding the CoM Relocation Works.*

The City of Melbourne has agreed to the above and accordingly has accepted responsibility for ensuring an effective relocation and management strategy is developed and implemented.

The Committee acknowledges that the LMA have agreed to relocate the Manningham Street playground within walking distance for local residents at the start of the Project, in consultation with City of Melbourne.

## **(ii) Impacts within the City of Moonee Valley**

As described in the overview of evidence and submissions, Ms Hicks led extensive evidence on the likely impacts of the Project on the Flemington Housing Estate generally, as well as on the corresponding sports fields and playground at Debney's Park and on other active and passive open spaces within the municipality. (Note: Impacts on the Flemington Community Centre and Community Garden are addressed and discussed in Chapter 7.4 of this report.)

The Committee accepts the evidence and submissions made, which were consistent in their conclusion that the Project poses an unacceptable impact on the Debney's Park Playground. The Social Impact evidence of Ms Nesbitt for the LMA conceded that the playground's relocation is warranted. The Committee agrees that this should occur, and acknowledges the LMA's Final Version of Performance Requirements which specifies this outcome (Refer LU4):

*Relocate the Debney's Park playground in accordance with a master plan developed in consultation with relevant stakeholders, prior to the commencement of major construction works in the area. The relocated playground is to be of the same or higher standard as the existing playground and relevant stakeholders include the Office of Housing, City of Moonee Valley and Flemington Neighbourhood Renewal Board or other representative of the estate tenants.*

While accepting the Performance Requirement that agrees to the relocation of the playground, and the requirement that it be in accordance with a master plan prepared in consultation with stakeholders, both the City of Moonee Valley and the Flemington Neighbourhood Renewal Board consider that the LMA's commitment to be shy of what is required. Both consider that the master plan should respond to and make good the relocation of the existing tennis courts, the retention of the Debney's Park Oval as a viable venue for football, soccer and cricket, as well identify the best location for the relocation of the Flemington Community Centre and Community Garden. These concepts and others are reflected in the Draft "*Flemington and Travencore Opportunities Map*" (Document 517) and "*Revisoning Flemington and Travencore – Post East West Link*" plans tendered by Ms Hicks in closing.

The LMA in closing reiterated it does not accept the evidence of Ms Rosen in relation to the impacts of the Project on other facilities in the Estate, however:

*That said, it recognises that the master planning process should properly take into account the impact of the Project and the relocation of the playground on other key facilities within the Estate, including the community centre.*

The LMA closing submission gave the following commitment:

*... whilst it is not yet possible to identify the specific impacts of the Project on the municipality's linear open space network, the LMA will engage in ongoing consultation with the City of Moonee Valley to ensure that any impacts from the Project on these assets are properly identified in advance, and that appropriate mitigation measures are developed and implemented as part of (or in conjunction with) the Project.*

Based on the evidence and submissions before it, the Committee does not accept that the above undertakings by the LMA adequately address the magnitude of impact on Moonee Valley's active recreation infrastructure and local park network. In reaching this position, the Committee supports the submissions advanced by Ms Hicks that new performance measures, an/or conditions are required to achieve the mitigation measures necessary to make good the impacts on open space and sporting clubs as a result of the Project. The Committee accepts that the submissions and evidence put by the City of Moonee Valley has demonstrated that there are tangible and clear links that tie the need for the advancement of "*Open Space Master Plans*" and "*Design Interventions for Moonee Ponds Creek*", as specified in Document 172, to the EWL Project alignment.

On the last day of the Hearing, Ms Hicks submitted a 32 page table (Document 515) that contains the City of Moonee Valley's response to the LMA's response to the Council's proposed open space design interventions and mitigation requirements. It is comprehensive and consistent with the submissions and evidence led by Council. The contents of the table clearly highlight that the LMA remains reluctant to respond to the identified remediation measures sought by Moonee Valley. The Committee considers the majority of proposed interventions are worthy of implementation and are justified.

The Committee considers that the most effective means to ensure that the scope of works are adequately addressed, without cost to Council or other affected stakeholders, is for the

LMA and Moonee Valley to negotiate an agreed Memorandum of Understanding similar to that struck between the LMA and the City of Melbourne. The Committee considers that the requirement for a MoU should become a Condition of Approval using Document 515 as the basis of a scope of works. Changes to Performance Requirements are also supported.

### **(iii) Impacts on Moreland City Council Facilities**

Neither the opening nor closing submission on behalf of the LMA specifically addressed the impacts of the Project on Holbrook Reserve. As discussed in Chapter 6.6, the Committee has determined that the Ormond Road off ramp serves an important traffic role. The Committee is concerned to ensure that any impact on Holbrook Reserve is offset and made good by the LMA/contractor. The Committee notes that Items 7 – 15 of the suite of Performance Requirements recommended by Moreland City Council in Section H of its closing submission (Document 520), specify desired outcomes and measures required to ensure the function of the Reserve is maintained.

#### **7.3.5 Findings**

With respect to whether the impact of the Project on active playing fields and local parks *“has been appropriately addressed”*, and whether impacts on local parks and sporting facilities have been *“minimised”*, the Committee finds that the CIS, and the LMA’s response, has been inconsistent along the Project alignment. The Committee considers that the LMA has adopted an inconsistent approach in dealing with the various Councils’ concerns.

Within the City of Melbourne, on balance, the Committee finds that the proposed mitigation measures provided for by the MoU between the LMA and the City of Melbourne will effectively produce a net increase in facilities available to the City’s residents. There will be impacts (some of which are significant) in the short and medium term, for the duration of construction that will need to be managed. The key long term undesirable impact associated with the project within the City of Melbourne relates to the loss of the active playing fields within Ross Straw Field. An alternative design outcome that could facilitate restoration of some or the entire Field for active sport would be a significant social and recreational benefit. It is important to note that in reaching this finding, this specific assessment has not had regard to whether the agreed scope of additional recreation works within Royal Park that are subject of the MoU between the Council and the LMA are consistent with the Master Plan for Royal Park.

Within both the City of Moonee Valley and Moreland City Council however, the Committee does not accept that the Project has adequately assessed or minimised the impacts on sporting fields and the local open space network. That is not to say that an acceptable outcome within Moonee Ponds and Moreland cannot be achieved in respect of making good the impacts of the Project on their recreational assets.

The Committee considers a range of remediation works within the City of Moonee Valley are required for the Project to be acceptable in relation to its impacts on open space in the municipality. The Committee has determined that there is sound justification for a range of works to be funded by the LMA/the contractor to make good an extensive range of impacts on Council’s active sports ovals to ensure that they remain fit-for-purpose. The Committee accepts the submission of Ms Hicks that the drafting of an MoU similar to that entered into



with the City of Melbourne would be the most transparent and effective means of addressing outstanding matters. The Committee recommends accordingly. The scope of works should be generally consistent with Council's proposed intervention measures contained in Document 515.

In respect of Holbrook Reserve, the Committee considers that the retention of the Reserve's capacity as an active playing venue supporting a range of competition sports should not be compromised by the Project. In the view of the Committee, safe road and pedestrian access, and car parking proximate to the club rooms must be maintained. The Committee does not share the view of the Moreland City Council that such access has to be "*from City of Moreland*". The design constraints may be such that this outcome is not feasible. The Committee considers that retaining the function and capacity of the ground is more important than mandating that the existing access route under CityLink be maintained. An alternative and better option may be providing new access arrangements via a bridge over Moonee Ponds Creek. The Committee has recommended Performance Requirements in Appendix E to reflect this finding.

On a final note, the Committee reiterates that it supports the revised position of the LMA to commit to the relocation of both the Debney's Park and the Manningham Street playgrounds.

## **7.4 Impact on Community Facilities**

### **7.4.1 Introduction**

The CIS identifies community resources as including parks, sporting and recreational facilities, schools and education institutions, health centres and hospitals, community centres, community gardens, museums, and libraries. It acknowledges that community resources can serve either a regional or local catchment, or in some cases a mixture of the two.

The '*Social Impact Assessment*' included as '*Technical Appendix P*' to the CIS includes Appendix D which lists a range of community resources and attractors on a Precinct basis. While a number of submitters considered the list to be somewhat narrow in scope, on the whole, submitters were generally satisfied that community facilities utilised by the community had been reasonably identified. Each Precinct is analysed in the SIA and includes a *community resources and attractors* table.

The Committee's assessment focuses on whether the impact of the Project on community facilities "*has been appropriately addressed*" (Public Hearing Matter 7(b) – Committee's Terms of Reference), and whether impacts have been "*minimised*" (CIS Land Use Evaluation Objective and Performance Objective).

### **7.4.2 Key Issues**

Noting that the previous section of this report dealt with matters concerning local parks, and active sporting and recreational facilities (and Chapter 8 includes assessment of impacts on open space and Royal Park), the key issues in relation to impact on Community Facilities included in this assessment are:

- Impacts on the Flemington Community Centre;

- Impacts on the Flemington Community Garden; and
- Impacts on Essendon Community Garden.

### 7.4.3 Evidence and Submissions

#### (i) Flemington Community Centre

The expert witness conclave agreed statement for Social Impact (Document 7) stated that all witnesses agreed that:

*Maintaining the operation of the Flemington Community Centre, both during construction and operation, is very important to addressing social equity for the project.*

The Statement addressed the issue of “*Social equity for Flemington Housing Estate residents*”. Agreement was not reached between the experts on the adequacy of LMA’s proposed late additional inclusion of mitigation measures relating to the Flemington Community Centre, relocation of the Debney’s Park Playground, establishment of a community grants program and specific identification of the Office of Housing and Flemington Housing Estate residents in the community and business involvement plan. Ms Nesbitt considered them to be “*reasonable to address social equity issues of Flemington Housing Estate residents*”.

Others considered that they “*have the potential to address social equity issues related to the SIA*”, this being contingent on the principle that no costs are incurred to Council and that the community and business involvement plan is approved by those particularly impacted (or their advocates).

Ms Rosen noted in her presentation slides (Document 190) that the Flemington Community Centre will suffer noise, visual intrusion, air pollution, displacement, compromised real and perceived safety, overshadowing, and light spill. The direct, cumulative permanent and temporary social impacts which compromise health and safety of concern to Ms Rosen in the context of the Flemington Community Centre included:

- *Potentially reducing capacity to secure continuity in delivery of services which leads to disengagement in activities that foster and enhance health and wellbeing and support material conditions.*

The submission of Ms Hicks highlighted that the social capital and community value of the Flemington Community Centre facility and its contribution to wellbeing and health is recognized in the SIA. Ms Hicks reiterated that it is a key multi-purpose facility with a significant informal role and noted that Ms Nesbitt acknowledged that “*any disruption interrupts the engagement of vulnerable members of the community*”. Further Ms Hicks stated:

*Many at the Flemington Public Housing regard it as a “second home”.*

*Ms Nesbitt’s analysis of its place in the community consisted of a desk top assessment and one unsuccessful visit – she did not attempt to revisit when she attended once and it was closed. She was not given and did not seek overshadowing diagrams. She relied on information from LMA re noise and dust impacts on the Flemington Community Centre.*

*It has a range of recreational, social and learning programs, health and training facilities. 76,000 access the centre each year.*

*But here, all that is proposed is that the community will be told how the project is going. It will be for LMA and the State architect that will make the call on whether or not the UDF has been addressed. There is no indication that the community will have any role.*

*Mitigation measures – she accepted all but relocation of FCC as PRs but fairly acknowledged that additional performance requirements might be added to ensure that negative social impacts are addressed.*

*Public information session was enough for her but she accepts it would be done without any analysis of impacts arising from Ormond Road off ramps. This has not been done and will not be done.*

*Ms Rosen’s evidence ought be preferred. She has conducted a detailed analysis of the benefits and the disbenefits of the proposal, using up to date methodologies and data.*

As previously discussed in Chapter 7.2, the submission by the Flemington Neighbourhood Renewal Board (Submission 399 and Document 309) highlighted that noise and air quality impacts will be unacceptable for residents as well as impacts on the Debney’s Park Playground, Community Centre and Community Gardens. Ms Aly submitted that *“a full master plan be prepared and implemented for the housing estate and Debney’s Park combined, including the relocation of the playgrounds away from the construction zone and building of a new Community Centre somewhere near the estate, such being fully functional before road works commence”*.

Many individual submissions from residents both within and outside the Estate highlighted the significance of the Community Centre as well as commenting on a raft of concerns regarding the LMA proposed retention of it in its current location, both during construction and operation of the Project.

## **(ii) Flemington Community Gardens**

Ms Rosen noted in her presentation slides (Document 190) that the Flemington Community Gardens will suffer visual severance, visual intrusion, air pollution, groundwater pollution, overshadowing, noise, and property acquisition. The direct, cumulative permanent and temporary social impacts which compromise health and safety of concern to Ms Rosen in the context of the Flemington Community Gardens included:

- *Reducing capacity to address food insecurity due to potential impact on quality of produce; and*
- *Reducing amenity and potential social and physical benefits derived from engaging in activities associated with community gardens.*

The presentation by Mr Gourlay of *“Cultivating Community”* (Submission 339 and Document 434) explained the history of the Flemington Community Garden and the various important roles it has in the Community. The submission expressed concern that the construction of the viaduct would mean the community garden would need to be closed for a number of

years during construction, and potentially permanently. This outcome would have significant impact on the 124 families that are members of the community garden (all of whom are residents of the Estate). The submission advocated for consideration of other alternatives for the construction of the road to avoid the need for the garden to close or relocate.

**(iii) Essendon Community Garden**

The Essendon Community Garden (Submission 516) expressed serious concerns about the impact of the Project due to the proposed siting and construction of the Ormond Road off ramp. Mr Mortimer on behalf of the Group submitted that the major threats of the Project included shadow and sun block-out, access to the gardens and parking during construction and ongoing, land acquisition impacts, possible psychological effects and future consultation. Section E of the submission addressed possible mitigation actions, and stated:

*The ECG Management Committee is obviously motivated to maintain the garden's viability and to continue to provide a vital community amenity with its limited resources. To this end ECG has developed possible solutions that would return the value of the loss of the 0.010 hectares and the shadow/sun warmth loss.*

*These solutions are:*

- *Move and reinstate the pavilion its barbeque and seating area into the 'shadow zone';*
- *Move and reinstate the storage shed and garage into the 'shadow zone' to provide secure storage of gardening tools, implements, plant and equipment and pavilion furniture; and*
- *Move and reinstate the two 5,000 litre tanks into the 'shadow zone' as collectors of water from the pavilion and the storage shed.*

*The moving and reinstatement of the rainwater storage tanks would require that they be refilled as well as providing the ability to allow plot holders to use the water in a sustainable manner and reduce dependency on town water for plant moisture.*

*A sustainable approach would be to provide a number of smaller tanks along the Northern fence of the ECG and through a solar panel array on the pavilion provide electricity for a flow pump to pump from the large storage tanks up to the smaller fence line tanks allowing plot holders to gravity water their plots. The excess electricity generated through the solar panel array would then be sold into the grid.*

*The area where the pavilion, tanks and storage shed were located would then be formed into typical garden plots of the existing average size, staging this so that the plot holders who will lose their plots because of shadow and warmth loss will not be disadvantaged unduly.*

#### 7.4.4 Discussion

##### (i) Flemington Community Centre and Flemington Community Garden

Section 16.6 of the CIS states:

*Activities at Flemington Community Centre in Debney's Park would be disrupted during construction. The centre, which includes a children's play area and a garden, may need to relocate temporarily, but full operations could be resumed post-construction. Linking Melbourne Authority would work closely with Moonee Valley Council and centre users to minimise any impacts.*

In response to the submissions and evidence, the LMA revised its view and in its closing submission stated:

*The LMA recognises that the Project is likely to impact upon these community facilities (with reference to "the Debney's Park Estate and the community facilities situated in, or in close proximity to, the Estate") and is prepared to commit to a master planning process in consultation with the Council to ensure that the playground is rebuilt to the same or higher standard prior to the commencement of major construction in the area.*

This commitment however did not extend to the relocation of the Community Centre nor the Community Garden. LMA's closing submission stated in this regard:

*The LMA does not accept Ms Rosen's evidence that the community centre could not continue to operate from its current building on the basis that the "environment" within which it is situated "will be changed significantly" by the Project. That said, it recognises that the master planning process should properly take into account the impact of the Project and the relocation of the playground on other key facilities within the Estate, including the community centre.*

The Committee disagrees with the LMA position and accepts that the evidence presented during the hearing was that both the Community Centre will suffer significant noise, visual intrusion, air pollution, displacement, compromised real and perceived safety, overshadowing, and light spill both during construction and then on an on-going basis. The community garden and its users will suffer similar impacts including visual severance, visual intrusion, air pollution, groundwater pollution, overshadowing, noise, as well as property acquisition.

The Committee considers that the Project impacts on the Flemington Community Centre and Community Garden are of such a scale that the facilities become not fit-for-purpose, and accordingly their permanent relocation should occur should Project Approval be granted by Government for the southerly viaducts comprising Part B of the Project. The Committee highlights that the LMA's closing submission (page 141) stated that imposition of such a condition by the Minister is tenable:

*It is open to the Planning Minister to impose additional conditions on the Project which must be complied with by the LMA, and which fall outside the performance requirements and applicable approvals to be complied with by the successful contractor.*

*Some of the types of conditions that could potentially be imposed by the Planning Minister on the LMA as a condition of his approval decision include:*

- ...;
- *the possible replacement of the Flemington Community Centre, subject to final design of the Project.*

**(ii) Essendon Community Garden**

The LMA's response to the Essendon Community Gardens submission stated:

- *Only part of the Community Garden within the project area will be utilised for the purposes of the project and access will not be required through the garden. The majority of impacts will be construction related and may result from overshadowing;*
- *The Urban Design Framework will guide the implementation of impacts at the garden, also see LMA's response to question 43 of the s57(4) RFI in relation to overshadowing; and*
- *The evidence of Heather Nesbitt in her expert witness report in relation to impacts at the garden.*

The Committee's review of the LMA's response to question 43 in the s57(4) response revealed no specific reference to the Essendon Community Garden. It did state however:

*In locations that are impacted by above ground structures, detailed design treatments and urban design measures could be considered (including use of materials) as a means of limiting, to the extent practicable, the impact of overshadowing on the public realm. This will be addressed as part of the implementation of the UDF and performance requirements.*

The evidence statement of Ms Nesbitt did not mention the Essendon Community Garden specifically, nor did it comment on specific or general impacts of the Project on community infrastructure. Appendix C to the evidence statement is titled "*Comment on submissions*". Under the heading "*Other Statutory Authorities*", Moonee Valley is listed. One issue attributed to Council is "*Impact on community facilities particularly Flemington Community Centre and Flemington and Essendon Community Gardens needs to be addressed*". However, under the table heading "*Comment*", no mention of the Essendon Community Garden is made. Neither does it rate a comment in the "*Recommended new or modified performance requirement column*".

Also within Appendix C, Submission 516 (Essendon Community Garden) is identified as one of the 1,077 submissions that were categorised as raising the following issue:

*Loss of and impact on existing and proposed open space, sporting and community facilities (other than Royal Park) is unacceptable and will impact on community health and wellbeing.*

In the comment column, the Essendon Community Garden is identified as a Community facility that has been identified in submissions. The following is stated:

*Community gardens may be relocated to other nearby parks given that this type of use has comparatively limited infrastructure and capital costs involved.*

While not mentioning the Essendon Community Garden specifically, the following “*Recommended New or Modified Performance Requirement*” recommendations proposed are relevant:

***Modified Mitigation Measure***

*Consultation with relevant sporting facilities, community facilities including the Flemington Community Centre and councils to explore potential relocation/design improvements of equal or improved access and quality. This would ensure sporting community and recreational needs are addressed during both construction and operation of the project. Where possible, relocation/redesign is to be undertaken prior to closure of the facility for public use.*

***New Mitigation Measure***

*Establish a Community Grant program to operate during construction of the project to fund community support activities and small capital works targeting community, sporting and recreational facilities in the local region as defined in the Social Impact Assessment.*

The Committee notes that despite being recommended for inclusion by Ms Nesbitt, neither of the above proposed measures have been adopted for inclusion by the LMA in its 15 April 2014 final version of Performance Requirements.

The Committee considers the sum of the LMA’s consideration of the Essendon Community Garden submission has been inadequate and unresponsive. It appears that little effort has been made to understand the specific issues relating to the Garden, let alone to reach agreement on how impacts can best be mitigated. The Committee considers the requested actions by the Essendon Community Garden to be reasonable and affordable and certainly more desirable than relocating the established community garden “*to a nearby park*” as advanced by Ms Nesbitt. The Committee supports the preparation of a detailed design treatment in consultation with the group and Moonee Valley City Council representatives (the proposed mitigation measures based on those identified in the Essendon Community Gardens submission). Implementation of the agreed treatment should proceed prior to construction commencing and at no cost to the group or to Council. This outcome should be prescribed in the Performance Requirements to ensure adequate resolution of issues are address should the Ormond Road off ramp be constructed.

**7.4.5 Findings**

The Committee accepts that the impacts on the majority of community facilities abutting the Proposed Project Boundary (such as schools and education institutions, health centres and hospitals, community centres, community gardens, museums, and libraries) are likely to be able to be adequately addressed by the implementation of Performance Requirements. There are however a number of important exceptions where the impacts of the Project have been determined by the Committee to be unacceptable and not appropriately minimised.

The impacts on the Flemington Community Centre (and the associated Debney’s Park Playground) and on the Flemington Community Garden have been assessed by the Committee as unacceptable. The Committee considers that the Project alignment/boundary

is too close to these facilities and that the corresponding noise, visual intrusion, air pollution, displacement, compromised real and perceived safety, overshadowing, and light spill render the facilities not fit-for-purpose. The Committee considers that the construction of any elevated road structure within the Proposed Project Boundary west of CityLink abutting the Flemington Public Housing Estate will pose unacceptable impacts, both during construction as well as operation. Accordingly the Committee does not favour the Project alignment in this location and considers the ideal outcome would be that an alternative design to the proposed Part B viaduct is developed in order to avoid the impacts on the Flemington Housing Estate residents and these corresponding significant community assets (the Flemington Community Centre, Debney's Parks Playground and the Flemington Community Garden).

If this finding of Committee is not accepted by Government, and Project Approval is granted for a final design that includes a viaduct on the western side of CityLink similar to the Reference Design, the Committee considers and recommends that the negative impacts on the community facilities will be of a magnitude that justifies their re-location/replacement. The Committee considers this would be a reasonable and equitable outcome if the Project is to occur within the Proposed Project Boundary. Accordingly the Committee recommends that if the Part B viaduct is approved within the current Proposed Project Boundary to the west of CityLink, the following should be required as a condition of approval: the permanent replacement/relocation of the Flemington Community Centre, Debney's Parks Playground and the Flemington Community Garden, at or before commencement of Project construction. This should be determined via a consultative Master Planning process involving at a minimum, representatives of the LMA, the Office of Housing, the Flemington Neighbourhood Renewal Team and Board, the Flemington Community Centre, Flemington Community Garden and the City of Moonee Valley. Importantly, corresponding conditions should be included to ensure that any costs associated with the planning or implementation of the above actions is not borne by the relevant community stakeholders or the City of Moonee Valley.

The Committee finds that the mitigation works recommended by the Essendon Community Gardens to be an acceptable solution that will adequately mitigate likely negative impacts associated with the construction of the Ormond Road off ramp. The Performance Requirements should be amended to require that the works be undertaken prior to construction activity commencing and at the expense of the Project.

The Committee has recommended a number of changes to the Performance Requirements in Appendix E to reflect its findings.

## **7.5 Impacts on Infrastructure/Utilities**

### **7.5.1 Introduction**

In relation to infrastructure, Chapter 8 of the CIS notes that a number of transport-related land uses are within and adjacent to the project area, those identified being *"freight and logistics operations associated with the Port of Melbourne and the Melbourne Freight Terminal (at the western end of the project), various tram and train routes, and shared use paths and cycleways"*.



The land use assessment for Precinct 5: Port Connection states:

*Partial temporary occupation of SP AusNet's West Melbourne terminal station site would be required. This could mean that electricity assets associated with the substation may need to be relocated (although power supply would be maintained). Careful consideration would need to be given during the project's detailed design and construction to the operation and possible future upgrade of the site.*

*Partial temporary occupation of the Melbourne Freight Terminal (owned by VicTrack) would be required.*

In relation to the SP AusNet terminal station, the Business Impact Assessment (BIA) at Technical Appendix Q noted that some facilities that are planned as part of the SP AusNet terminal station upgrade may be impacted. To address the potential impact, the BIA proposed "that the implementation of a business and property owner engagement strategy about the project be developed" as a Performance Requirement, and that "when design is finalised, review the requirements and initiate further discussion if land is not required".

### **7.5.2 Key Issues**

The Committee has addressed impacts on train and tram routes and on bicycle paths in Chapter 6. This part of the report focuses on utility impacts and other infrastructure impacts identified in submissions.

The relevant CIS Evaluation Objective and Performance Objectives are listed at Table 8.4 of the CIS under 'Land use and utility assets performance requirements'. The CIS evaluation objective is to "minimise adverse impacts ... on infrastructure". The performance objective is to "Minimise impacts on existing land uses and utilities".

The relevant Performance Requirements are LU4 and LU5. The pertinent elements of LMA's proposed final version of these requirements, read:

*LU4: Protect, and/or modify utility and public assets to the usual requirements and satisfaction of asset owners.*

*LU5: Prior to commencement of construction, condition surveys are to be undertaken by independent qualified assessors of existing infrastructure, buildings and structures within 50m of the project activities and any other significant assets that may be affected.*

The key utility infrastructure subject of discussion during the Hearing was the Project's impact on SP AusNet's pending upgrade to the West Melbourne Terminal Station (WMTS) (Submission 490). Ms Quigley represented SP AusNet at the Hearing (Documents 240 and 241).

The Committee notes that other submissions lodged by infrastructure and utility service providers in response to the exhibition of the CIS included:

- Port of Melbourne Corporation (Submission 382);
- Jemena Electricity Networks (Vic) Ltd (Submission 466);
- Asciano (Submission 426); and
- APA Group (Submission 475).

None of these appeared at the Hearing to elaborate on written submissions. The Committee has considered these submissions and is satisfied that the issues raised are adequately addressed by the LMA's agreed Performance Requirement LU4 and LU5.

The key outstanding issue for the Committee to assess relates to the written and verbal submissions of SP AusNet.

### **7.5.3 Submissions and Evidence**

SPI PowerNet Pty Ltd, trading as SP AusNet is Victoria's largest energy delivery business. The company owns and operates Victoria's electricity transmission network, along with separate electricity and gas distribution networks.

SP AusNet (Submission 490) noted that the company was likely to be affected by the Project, in particular by the proposed alignment of Part B which in part traverses through its WMTS which is undergoing a \$100 million upgrade. Other issues raised included concern over the protection, maintenance and security of energy supply on other SP AusNet assets, being the Brunswick - Richmond 220 kV underground cable, the Fishermans Bend 220 kV Transmission Tower (FBTT) and underground gas assets. The submission noted that it did not oppose the Project, as long as a satisfactory resolution of its significant concerns was reached in a timely manner so as not to interrupt its business and corresponding security of the State's energy supply needs.

Ms Quigley advised the Committee that *"the Project in its current form does not appropriately avoid or minimise the adverse impacts, in particular, where the Project impacts on critical infrastructure such as SP AusNet assets"*. The tabled submission (Document 240) stated that *"the preference from SP AusNet's perspective is that there is no Part B of the project (that being the part of the project which so severely impacts on its assets and business obligations)"*. However it accepted that the State Government has stated its commitment to the Project as a whole, and therefore its priority is to ensure that the impacts of the Project on its business are resolved so that the State's energy supplies are not further compromised.

SP AusNet indicated that it will continue to engage in discussions with the LMA and other stakeholders to seek mutually beneficial solutions in order to ensure that the WMTS is rebuilt by 2019. It requested that *"the following important matters be considered by the Assessment Committee with a view to making recommendations in relation to the following"*:

- a) *if Part B of the Project is to be approved, designation of the "project area" for Part B, or the application of a Public Acquisition Overlay as soon as possible;*
- b) *confirming that the Project construction zone between the roadway and the WMTS site will remain in the ownership of SP AusNet and that LMA will ensure access to allow a temporary transformer to be located on that land for the period of the WMTS upgrade works;*
- c) *formalising as an urgent matter the final Proposed Project Boundary so that there is no uncertainty in this respect (i.e. no encroachment in a westerly direction into the remaining WMTS footprint). This will enable*

- the redesign of the WMTS redevelopment to continue as soon as possible;*
- d) securing additional land interests with VicTrack to enable land for construction access and permanent use, as well as to agree new easement corridors for transmission lines entering the site. Such land must obviously be fit for both construction and permanent use (including access and egress where applicable);*
  - e) ensuring the creation of easements on the acquired land to protect SP AusNet's assets and specifically to create new easements to provide for underground and overground corridors as relevant for electricity and gas supply;*
  - f) identifying a location for the relocation of the FBTT;*
  - g) ensuring that the design and construction of the Project minimises impacts on SP AusNet's assets and such assets are not adversely affected by dust, vibration water or soil contaminants;*
  - h) ensuring the construction works avoid the existing gas and electricity assets, or relocate these assets without interruption to supply; and*
  - i) including the Performance Requirements requested by SP AusNet.*

SP AusNet's requested modifications to the Performance Requirements are contained in a Table at Document 241. The Committee notes that the LMA disagrees with each one of the proposed changes, as reflected in the LMA's final response to proposed changes (Document 525). SP AusNet's requested changes can be summarised as additions to:

- Transport Performance Requirements T1 and T2;
- Three new and comprehensive Land Use and Utility Performance Requirements;
- One new Community and Business Impact Performance Requirement;
- Four new Noise, Vibration and Light Performance Requirements;
- One new Surface Water Performance Requirement; and
- One new Contamination Performance Requirement.

The LMA's closing submission noted that over the course of a number of months it had participated in productive and ongoing discussions with both SP AusNet and VicTrack concerning ways to facilitate the expansion of the WMTS in a manner that would not conflict with Part B of the Project. It said

*As SP AusNet itself explicitly stated in its written submission to the Committee, an "agreement in principle" has now been reached in respect of a viable solution. This solution, in short, would involve SP AusNet utilising land owned by VicTrack situated immediately adjacent to the southwest corner of the existing terminal station for the purposes of the future expansion. Whilst there are issues that remain to be resolved concerning this proposal it is clearly not the case that the declaration of the alignment of Part B as per the Reference Design would preclude the ability of SP AusNet to upgrade the terminal station or otherwise compromise its ability to operate out of this site.*

*The submission made by SP AusNet demonstrates well the virtues of identifying an alignment of Part B as part of this process. Indeed, adopting the language of*

*SP AusNet, the early designation of Part B will “provide a degree of certainty” that will allow it to properly plan its activities into the future. That degree of certainty would simply not exist if the Committee deferred the designation of Part B of the Project until a later date.*

*SP AusNet went on to make a number of submissions concerning amendments and modifications to the performance requirements. The LMA’s response to these suggestions is set out in the document that it has prepared and maintained at the request of the Committee.*

*As discussed earlier in these submissions, the extent of potential impacts on both SP AusNet and Vision Australia will depend on the ultimate alignment of Part B. Indeed, SP AusNet tabled a document indicating that the impacts would be largely alleviated were the alignment to run immediately adjacent to CityLink.*

#### **7.5.4 Discussion**

No party to the Hearing questioned the need to upgrade SP AusNet’s WMTS. SP AusNet’s specified completion date of 2019 and the five year timeline to achieve the upgrade similarly was not challenged.

Despite the submissions by the LMA that work and negotiations are progressing well with representatives of SP AusNet to achieve their long term goals in a timely manner, the submissions by SP AusNet cast doubt in the Committee’s mind with respect to the degree of comfort and satisfaction that SP AusNet have with regard to the negotiations that have taken place with the LMA to date, and the prospects of moving forward to achieve a timely and acceptable outcome.

The Committee accepts SP AusNet’s submission that:

*The preference from SP AusNet’s perspective is that there is no Part B of the Project (that being the part of the project which so severely impacts on its assets and business obligations).*

In response to questions from the Committee, Ms Quigley confirmed that if Part B was abandoned, SP AusNet “*would be able to proceed with the upgrade project for which approval has been granted*”. The submission noted that planning for the works at the WMTS have been underway for a number of years and approvals have advanced through numerous regulatory hoops including from the Australian Energy Regulator, the Australian Energy Market Operator, Melbourne Water, as well as the securing of a Planning Permit from the City of Melbourne (Permit Number TP-2013-142). The submission noted that the planning permit application alone was subject to 16 specialist studies and subsequent to receiving approval, a project specific Construction Management Plan has been prepared.

Ms Quigley reiterated that advancing the upgrade consistent with the current permit, noting that works were to commence in November 2013, still remains SP AusNet’s strong preference. It was explained during the Hearing that site was originally developed in a planned manner with the understanding an upgrade would occur at some point in time. However, these plans have been totally disrupted as the proposed area of acquisition to facilitate the Project Part B alignment results in the loss of 24% of the site’s useable land. Accordingly substantial design modifications would be required to achieve the upgrade if

Part B was approved. Early investigations have indicated that not only will significant infrastructure be required to be relocated off-site, additional land will need to be secured to form an effective earth grid. It is understood that in-principle agreement has been reached (with the assistance of the LMA) with VicTrack to utilise land owned by them for these works. SP AusNet is comforted by progress but is concerned that there is no formal agreement in place.

The Committee inspected the WMTS site following the hearing, where it understood better the redevelopment options and challenges. The Committee found the inspection useful and gained an appreciation of the WMTS upgrade's relationship with the Project.

SP AusNet advised that while an outcome may eventuate for the required 2019 upgrade (noting that the consequences are significant if it is not achieved), the significant loss of land for Part B will compromise post 2020 capacity augmentations that will be required to meet future estimated growth. The Committee acknowledges this is a less than ideal outcome.

### **7.5.5 Findings**

On the strength of the submission put on behalf of SP AusNet and the magnitude of issues it raises, the Committee accepts the conclusion advanced by Ms Quigley that *“the Project in its current form does not appropriately avoid or minimise the adverse impacts, in particular, where the Project impacts on critical infrastructure such as the SP AusNet assets”*.

The Committee considers that the short and long term impacts of Part B of the Project alignment as it affects SP AusNet's WMTS are undesirable and should be avoided. The negative impacts on this important utility, in the Committee's view, adds further substantive weight to the Committee's recommendation (Refer Chapter 7.2) that the proposed Part B alignment of the Project needs further review.

Should these findings and recommendation of the Committee not be accepted, the Committee accepts SP AusNet's submission that a number of outcomes should be mandated, and it has recommended accordingly. It is further recommended that the Project Boundary for Part B not intrude on SP AusNet's WMTS site, and should be redefined accordingly.

## 8 Visual Impacts, Urban Design and Landscape

### 8.1 Introduction

#### 8.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(c) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to visual impacts and the Urban Design Framework:

*Whether the proposed Urban Design Framework in the CIS will appropriately manage visual impacts of the project on the surrounding area, including public open space.*

While not specifically noted in the CIS, the Committee considers that the relevant applicable approval informed by the landscape and visual assessment contained in Chapter 10 of the CIS is the proposed planning scheme amendment pursuant to the provisions of the *Planning and Environment Act 1987*. The proposed amendment seeks to permit the Project's development in accordance with a project specific Incorporated Document to be introduced into the Melbourne, Moonee Valley, Moreland and Yarra Planning Schemes. Table 1 within the Incorporated Document lists the Urban Design Principles from the Urban Design Framework that has been informed by the landscape and visual assessment.

The Committee considers that the objectives of the *Transport Integration Act 2010* are relevant to its assessment of visual impacts and the response provided for through the UDF.

#### 8.1.2 Conclusion of the CIS

Chapter 10 of the CIS concluded that the Project will affect the urban landscape and visual amenity of a number of residences, business and community resources, public parks and movement corridors. The assessment is that the anticipated impacts will range from being of no significance to being of high significance.

The CIS stated that the Urban Design Framework developed for the Project:

*Describes the urban design outcomes that are desired by Linking Melbourne Authority and the Victorian Government. The Urban Design Framework includes a set of urban design principles that will form part of the project performance requirements and project contract. The framework provides examples of urban design possibilities and qualitative benchmarks that demonstrate how the urban design principles could be achieved.*

The landscape assessment highlighted that there will be urban character and visual impacts during the construction phase which could extend for a period of up to five years.

*Some of the long term impacts of the project include permanent changes to views or urban/neighbourhood character due to new road infrastructure, including:*

- *Additional bridge structures over Merri Creek and Moonee Ponds Creek*
- *New Hoddle Street/Alexandra Parade overpass*
- *Major interchange at Elliott Avenue*

- *Major interchange and structures within a section of Royal Park, Ross Straw Field and the storage basin of the Trin Warren Tam-boore Wetlands*
- *Elevated roadway structures at Debney's Park, Travancore Park, Ormond Park and Holbrook Reserve*
- *Tunnel ventilation structures at portals (and a potential mid-tunnel structure)*
- *Elevated structures near the Evo apartments on Manningham Street, the ALT tower, Flemington public housing estate and Flemington Community Centre.*

Implementation of performance requirements and urban design principles were stated as being important for reducing the significance of impacts of the Project:

*At the completion of construction, some areas would be available for redevelopment and urban renewal. This would provide opportunities for high quality mixed use or medium to high density residential development within close proximity to the CBD. This is discussed in more detail in Chapter 8 and does not form part of the Reference Project.*

The landscape assessment concluded that the Project will create a number of urban landscape and visual benefits, such as new and enhanced urban landmarks and gateways.

### **8.1.3 Objectives and Performance Requirements**

The CIS evaluation objective (set by the Scoping Directions) for Landscape and Visual Impacts is:

*To minimise adverse impacts on the visual amenity of the existing built environment and landscape including public open space and to maximise the enhancement of visual amenity where opportunities exist.*

There are two corresponding Landscape and Visual Impact Performance Objectives listed in the CIS:

- *Minimise impacts on the built environment and landscape, including public open space and maximise opportunities for enhancement of public amenity; and*
- *To minimise the impact of light emissions.*

An extensive list of Performance Requirements are specified in Chapter 10 of the CIS (Table 10-2) to meet these Performance Objectives. The CIS stated that it "*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*". The CIS noted that other Performance Requirements, such as those relating to heritage and land use impacts, may also contribute to minimising visual and landscape impacts

### **8.1.4 Visual Impacts, Urban Design and Landscape Issues**

The Committee heard visual impacts, urban design and landscape evidence from the following experts:

- Mr Allan Wyatt of ERM for the LMA on visual impacts and urban design;
- Mr John Patrick of John Patrick Pty Ltd for the LMA on cultural landscape;
- Professor Catherin Bull of the University of Melbourne for the City of Melbourne on open space;

- Assoc Professor Mardie Townsend of Deakin University for the City of Melbourne on open space;
- Mr Rob McGauran of McGauran Giannini Soon for Moonee Valley City Council and Yarra City Council on urban design;
- Mr Robert Moore of the City of Melbourne for the City of Melbourne on urban design; and
- Mr Craig Czarny of Hansen Partnership for Ms Peterson and Mr Peck on urban design.

At the request of the Committee, all experts met to discuss the relevant issues and determine points of agreement and dispute. There was no conclave on visual impacts and urban design.

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to visual impacts, urban design and landscape, the Committee has grouped its assessment under the following headings:

- Visual Impact Issues; and
- Urban Design Framework Assessment.

## **8.2 Visual Impact Issues**

### **8.2.1 Introduction**

The Reference Project describes new road and associated infrastructure along the proposed route. There are five parts of the proposed road that are not in tunnel and hence have some visual impact on the existing urban environment. These are:

- Precinct 1: At and around the Hoddle Street/Eastern Freeway junction;
- Precinct 3: Royal Park at and around the Elliott Avenue junction;
- Precinct 3: Royal Park in the area of the Manningham Parklands;
- Precinct 4: Along CityLink north of the proposed junction with East West Link; and
- Precinct 5: Along CityLink south of the proposed junction with East West Link.

There will be some visual (and other) impacts of the anticipated urban redevelopment of the land proposed to be acquired for the sidetrack on the north side of Alexandra Parade between Wellington Street and Copper Lane.

The Reference Project, particularly as described in the Mapbook, includes elements at each of the above locations that will have visual impacts in terms of both long and short distance views and from both the public realm and from private properties.

Visual impacts can be seen as positive, neutral or negative, depending on the viewer's opinion or the location and appearance of the object in question and whether the object is visually or functionally compatible or discordant with its urban setting.

While this chapter discusses the visual impacts of the Reference Project, it is the case that the Reference Project may not be the one to be built, and there may be smaller or larger variations to the Reference Project in terms of visual impacts.

It is therefore important that the Performance Requirements that describe and manage visual impacts are both broad enough and specific enough to ensure that the built project



meets those Requirements, whether they be aimed at ensuring a strong visual impact of a particular element of the project or minimising or reducing the visual impact.

### **8.2.2 Key Issues**

The key elements of the proposed road that will have visual impacts are:

- The proposed viaducts and support piers;
- Below-ground works such as ramps to and from the tunnels at Elliott Avenue;
- Tunnel portals and vent stacks; and
- Associated structures such as sound barriers, lighting, signs and signage gantries.

As stated above, these impacts may be perceived as positive or negative, and the way that they are designed and their level of integration into their urban or landscape setting can reduce adverse visual impacts. It is possible for road infrastructure to be a significant enhancement of its environment or as a local or regional landmark or visually-pleasing experience. These sentiments are reflected in the UDF and the Urban Design Principles.

The key issues are:

- The degree to which the Reference Project achieves high levels of positive visual impacts in its various elements;
- The degree to which the UDF, the Urban Landscape and Visual Impact Assessment and the Urban Design Principles can ensure best practice in terms of a visually acceptable and high quality contribution to the urban landscapes through which the road passes; and
- The degree to which the Performance Requirement set out in the CIS will ensure a high quality outcome, or whether they need to be revised to ensure this, for any alternative design.

#### **(i) Precinct 1: Hoddle Street/Eastern Freeway Interchange**

The key issue relates to the design of the proposed Hoddle Street flyover. This structure carries traffic that is not directly related to the Project but its purpose is to reduce the number of traffic turning movements that occur at-grade by raising northbound traffic on Hoddle Street travelling to the Eastern Freeway onto an elevated road on land acquired on the east side of Bendigo Street, crossing Hoddle Street and the Hurstbridge/South Morang rail line and joining the eastbound lanes of the Eastern Freeway. Specifically, issues relate to the visual presence of the flyover at ground level in the Bendigo Street and Alexandra Parade East areas, the longer distance views to the flyover along Hoddle Street and Alexandra Parade/Eastern Freeway, and the proximity of the supporting tower of the flyover to the historic Shot Tower when viewed from a number of directions.

Other issues relate to the location and size of the ventilation stack, the location of the portals and the excavations to their immediate east, and the uncertain visual impacts of the potential built form in the area of land on the north side of Alexandra Parade to be acquired for the temporary sidetrack.

#### **(ii) Precinct 3: Royal Park - Elliott Avenue Interchange**

The key issue in this area is the visual impact on Royal Park and loss of parkland to accommodate excavation for the proposed portals and the widened Elliott Avenue. A

number of mature trees will need to be removed, with consequent impact on vistas within the Park.

The CIS describes the option of bored tunnel or cut-and-cover for the length of the Project between the Upfield rail line and a point 200 metres east of Elliott Avenue. The choice of construction method is up to the Project's contractor, but if the cut-and-cover technique is used, there will be visual issues, not only the significant ones during construction, but impacts due to loss of mature trees in the area of excavation, whose visual contribution to the Park will take time to be restored.

**(iii) Precinct 3: Royal Park - Manningham Parklands/Ross Straw Field**

This is the area where the road emerges from the tunnel and crosses the large and open area of the Manningham Parklands as four separate roadways, partly in trench but mostly on viaducts, two of which rise to cross CityLink. The visual impacts are significant; on the parklands, on other parts of the public domain and on the residential properties close to the viaducts. The viaducts will have visual impacts, not just due to their structure, but also due to vehicles moving along them, sound walls, high-mast lighting, overhead sign gantries and, at night, light spill from lighting and traffic. Further, there will be a visual impact of the land under the elevated roads within a parkland environment.

These impacts generated a considerable amount of criticism from Melbourne City Council, local residents and community groups and expert witnesses.

The issues arise from the exposure of the Project in the public realm and its proximity to residences, as well as the apparent lack of consideration by the LMA of less visually intrusive alternatives in an area of high visibility, and in a place that has high landscape values due to the proximity of wetlands, a wooded slope and an avenue of mature trees.

**(iv) Precincts 3 and 4: CityLink North**

The key issues regarding this part of the Project are the proximity of the northbound road to residential properties on Travancore and to open space and sporting fields at Ormond Park, Holbrook Reserve and the Essendon Community Garden. This proximity manifests itself in terms of the visual presence of elevated structures, sound walls and lighting, and the loss of open space and reduction in the playing area of sports grounds, and the impacts of noise on residential properties and open space.

This northbound section of the Project is likely to be visible from properties and public open space in the areas near Travancore Park and Delhi Reserve. Further north, at the east end of Brisbane and Fenton Streets where the Essendon Community Garden and Brisbane Reserve are located, the off ramp will be highly visible. It passes over public open space and is above a small section at the north-east corner of the community garden.

The possible provision of sound walls on the ramp would reduce visibility of vehicles on the ramp but would increase the size of the structure. It is shown in the Mapbook to be about 50 metres from the nearest houses.

The physical environment along this part of Moonee Ponds Creek is of a poor standard. The creek is in a concrete channel with broad sides able to accommodate flood flows. The

extent of undercroft of CityLink creates a linear space that is unwelcoming and of very poor amenity, despite having a cycle and foot path along it.

The additional construction of the Project between Delhi Court and beyond the north of Dean Street adjacent to CityLink will have varying levels of visual impact and occupy varying amounts of the creek.

In terms of landscape, the Project will occupy areas of planted landscaping along the west side of CityLink, in Ormond Park, Holbrook Reserve and within the Moonee Valley racecourse. In terms of active or passive recreational space, it will occupy parts of Holbrook Reserve and Ormond Park.

#### **(v) Precinct 5: CityLink South**

The key issues regarding this part of the Project are the proximity of the new viaducts to properties to the west, and the loss of amenity and vistas along the Moonee Ponds Creek corridor.

As for Precinct 4, this proximity manifests itself in terms of the visual presence of elevated structures, sound walls and lighting, and the impacts of noise on residential properties and open space. The viaducts will have visual impacts due to vehicles moving along them, and at night, light spill from lighting and traffic. Further, there will be a visual impact of the land under the elevated roads within the environment of Moonee Ponds Creek which is a local asset earmarked for improvement as proposed in the Arden-Macaulay Structure Plan which is in stark contrast to some parts of the nearby undercroft of CityLink.

#### **8.2.2 Submissions and Evidence**

Many submissions and several expert evidence statements focused on the broad issues of visual impacts, both on the urban areas of the project, the open space areas, and the parts of the project that are in the CityLink corridor.

Many individual submitters based their submissions on the visual impacts of elements of the Reference Project.

#### **(i) Precinct 1: Hoddle Street/Eastern Freeway Interchange**

The Committee heard many comments about the dislike for the Hoddle Street flyover due to its scale, height, visual intrusiveness and proximity to existing dwellings in the Bendigo Street area and along Alexandra Parade east.

The City of Yarra and the City of Moonee Valley called Mr Rob McGauran to provide urban design evidence, in particular on *“whether the assessment framework adopted by GHD and described in Section 4.7 of the Urban Landscape and Visual Assessment (ULVIA) provides an adequate framework for the assessment of urban design and visual impacts associated with the project”*.

Mr McGauran summarised his position as being in agreement with the impact ratings assigned by the Urban Landscape and Visual Impact Assessment as summarised in Table 13.1 of that document as they apply to Precincts 1 - 3 (being the part of the Project within the City of Melbourne). He considered that it is appropriate to take into account the possibility of future urban renewal activities as a mitigating factor of the impacts of the project.

He considered that the Urban Design Principles, Urban Design Framework and the relevant Performance Requirements provide an adequate framework to ensure an acceptable urban design outcome, *“however any of these design options provided by the various councils affected by the project would in my view provide a better outcome, from an urban design and visual impact perspective than the reference design project”*.

Mr McGauran, in speaking to his evidence-in-chief, stated that the proposed responses of the UDF at the eastern, Royal Park and western interfaces do not demonstrate an adequate response to the urban contexts of each of these parts of the project. He said that the Reference Project has not consistently met any of the objectives of the Victorian Urban Design Charter.

It is notable that in the UDF, under the heading Best Practice Urban Design, it is stated that the Victorian Urban Design Charter provides the basis for the project-specific principles that have been developed and are considered appropriate to guide the urban design response.

Mr McGauran was critical of the proposed 'Eastern Gateway' because it would create a substantial visual and functional barrier between Clifton Hill and Collingwood, would create a 'freeway' environment rather than an opportunity for higher density development with 'coherent' streetscapes such as high-quality tree-lined boulevards and streets.

He showed an example, prepared by himself, of an at-grade intersection with Alexandra Parade redesigned as a linear parkway with the road on the north side and an open space corridor with a bicycle route on the south side, and higher buildings flanking both sides and around the Hoddle Street intersection.

**(ii) Precinct 3: Royal Park, Elliott Avenue Junction and Manningham Parklands**

Mr McGauran was critical of the Elliott Avenue interchange and the location of the western portal and the associated viaducts. He considered that, in light of the CIS's aim *“To minimise adverse impacts on the visual amenity of the existing built environment and landscape including public open space and to maximise the enhancement of visual amenity where opportunities exist”* (Executive Summary of Technical Appendix C) the intrusions into Royal Park by the Reference Project demonstrate that the Project, in his words, *“places roads above people”*. He said that to have a longer tunnel would be a positive outcome for Royal Park as a recreational resource which is under increasing pressure due to urban development, and an increasing resident population in the immediate area.

He was critical of the impacts on the disadvantaged community of the Debney's Park Estate, including in terms of the urban barrier, increased background noise, reduced access to open space and diminished opportunities for canopy trees and recreational areas.

During cross-examination, Mr McGauran was critical of the rationale for the Elliott Avenue interchange being, in part, to service the Parkville educational and health precincts, noting that Melbourne University has a core aim to reduce car travel, and that places like the Zoo and the medical precinct should not be car destinations. He said that the aim should be to make the Project invisible within Royal Park. He compared the Project with other cities where removing or hiding viaducts was occurring rather than building any more. The route was the line of least resistance.

When asked about the dislocation of the western part of Royal Park, Mr McGauran acknowledged that it was cut off from the main part of the Park physically but not ecologically, and that different communities use different parts of the Park. He considered that given the very different environments through which the Project passes, different approaches to urban design guidelines would be better than one generic document.

Mr Pitt, for Melbourne City Council, called Professor Catherin Bull, Emeritus Professor of Landscape Architecture at the University of Melbourne. Professor Bull had been asked to analyse the impact of the Project on the open spaces of Royal Park and Moonee Ponds Creek within the City of Melbourne.

Professor Bull summarised Royal Park as a place of difference from the city; an unstructured place with free pedestrian access and wide vistas; an open, informal and naturalistic place.

She identified the impacts of the Project on Royal Park as causing fragmentation of the form and layout of the Park, leading to a loss of integrity and domination by structures and urban elements which would be contrary to the informality and unstructured character of the Park. She noted that these impacts risked being irreversible and incompatible with the heart of the Park at Elliott Avenue and causing the loss of recreational open space in the area of Ross Straw Field.

Professor Bull made comments about how these impacts could be managed, including minimising the extent of structures, achieving a subservience of the roads to the Park in terms of siting and design and increasing the rigour of the UDF in describing required outcomes for the Park. She indicated support for the alternative road design put forward by Mr Higgs (Document 109) which moved the Elliott Avenue ramps to a point adjacent to Flemington Road, and which proposed alternative road layout options in the area of the Manningham Parklands, and the Australian Institute of Landscape Architects' proposal for the Elliott Avenue area (Document 286) which deleted all above-ground works at this location and was similar to that of Mr Higgs.

Professor Bull considered that any design for works in Royal Park will have positives and negatives, and these must be prioritised and balanced to determine the optimum route and its design. She considered that no options, whether the Reference Project or other alternatives, had been comprehensively assessed and this should be done for factors other than road performance.

In terms of Moonee Ponds Creek, Professor Bull defined this linear connector as a multi-functional place with the potential for landscape character to dominate while achieving urban-scale linear connection functions of water, cycle, pedestrian and green-space. She identified the impacts of the Project as overshadowing and dominating the open space, of leading to loss of functionality and reducing the perception of the space as green and safe. She offered the definition of open space as an area open to the sky, and rain, and with "*sky overhead*". In this regard, the shadows from the viaduct would be a problem.

She considered that the Reference Project did not comprehensively assess the corridor beyond its road performance, and that mapping and comparative analysis should be the basis for future decisions regarding the interface with the Arden-Macaulay area and the function of the corridor as a waterway and linear trail.

In terms of both Royal Park and the Moonee Ponds Creek (south of Racecourse Road) Professor Bull recommended that minimum outcome criteria be identified and mandated and that the relevant documents be adjusted to incorporate this. She further recommended that an independent expert assessor with open space experience be appointed to ensure optimum outcomes.

In answer to questions, Professor Bull noted that in Royal Park the infrastructure is subservient to the landscape, but this is not evident in the Reference Project where the proposed works are in her words, very intrusive. The proposal shifts the balance in Royal Park from being an informal space to one of structured use.

She considered that the UDF does not specify minimum Performance Requirements for particular spaces to guide designers when faced with competing criteria, and that desired outcomes, not a 'wish-list' as in the UDF, are needed.

In answer to a question from Mr Wren, Professor Bull said that a substantial piece of work should be done to provide proper guidance and which would be a "*robust guide*" for use both during design and during construction.

To questions from Mr Morris, Professor Bull acknowledged that Royal Park was bisected by roads, a rail line and a tram line and that these limit pedestrian movements. Mr Morris noted the uses such as golf course, playing fields and tennis courts that are not naturalistic elements. Professor Bull's view was that, while this is so, there is danger in making this dissection as there is a matrix of soft landscaping that gives Royal Park its structure. Managing the balance between formal and informal areas is a constant challenge for Park managers.

Asked if the proposed structures in the Ross Straw Field area would be visible from the eastern part of the Park, Professor Bull responded that there is a dramatic difference between the tunnel and the viaducts in terms of the use of the affected land where viaducts limit the use under them.

Asked to respond to the urban design aspects of EastLink and Peninsula Link, Professor Bull stated that while good, these are different environments and that she has no confidence that the same can occur with the Project due to the lack of rigour in the UDF which provides adequate guidance for works in Royal Park.

It was her conclusion, that while the Urban Design Principles in the CIS are sound (apart from the 'gateway' in Royal Park), the Reference Project is not aligned with them, and the Reference Project could not be achieved using the Urban Design Principles. She argued that much stronger work is needed at this planning stage. In response to a question from Mr Pitt, Professor Bull stated that the Urban Design Principles are not achievable by the Reference Project or a variation of it.

Ms Pederson and Mr Peck, Submission 439, who own residential property in Manningham Street, engaged the services of Mr Craig Czarny, consultant town planner and an urban designer, to prepare an expert witness statement on their behalf. Mr Pitt assisted the submitters by calling Mr Czarny. His evidence focused on the impacts of the viaducts at the western portal on the parklands and nearby properties in Parkville West. His position was, in essence, that "*the execution of the proposed alignment and connections through Parkville*

*West and Royal Park (Precinct 3) does not pay adequate regard to best practice process in the procurement of major infrastructure projects”.*

In terms of the Project's impact on Parkville West, he stated that:

*The project as designed in its current form represents a damaging response which has not had due regard to the integrity and image of the neighbourhoods through which it passes, and does not represent either sound urban infrastructure proposition representative of our advanced level of urban thinking in Melbourne. I am of the opinion that the proposed Reference Project will have a significant and irreparable impact upon the Parkville West neighbourhood and Royal Park.*

The Australian Institute of Landscape Architects (AILA) (Submission 366 and Hearing Documents 285 and 286) submitted that the Project should not proceed in its current form because of *“its severe impacts, inadequate justification, and poor planning and design”*. Much of the submission centres on the process to date and the impact of the Reference Project on Royal Park, asserting that a flawed process has led to an unacceptable design.

AILA believed that a freeway is an intrusive and inappropriate element in a park, and that Royal Park is no less sensitive to intrusions than other valued parks, such as the Botanic Gardens, and that its values should be enhanced not abused. The Institute noted that the Reference Project is in conflict with the Royal Park Master Plan, one Objective of which is to *“Enhance accessibility to all Park facilities by minimising the disruptive and divisive effects of through traffic”*.

Notwithstanding this, design options within Royal Park should *“seek to avoid, minimise, make good and offset damage and provide improvements beyond the status quo”*. To this end, AILA believed that *“the western part of Royal Park will be effectively lost as useable parkland, regardless of slight mitigation of impacts that may be achieved through options like those put forward by the City of Melbourne”*.

AILA accepted the notion of cut-and-cover within the Park, but only west of Elliott Avenue; it supported the total closure of Elliott Avenue with all vehicular park access from Royal Parade or Park Avenue; and the relocation of the Elliott Avenue portals to outside the Park or, at least, adjacent to Flemington Road, but considers this not to be an ideal alternative.

Mr Tweedie for the LMA called Mr John Patrick, consultant landscape architect. His evidence centred on Royal Park and its landscape. Mr Patrick had contributed to the preparation of Technical Appendix G: *East West Link Historical Heritage Assessment* of the CIS.

Mr Patrick stated that there is no pre-European settlement vegetation in Royal Park, confirmed that there are no trees subject to a Heritage Overlay in Royal Park and that he had not identified any trees worthy of individual Heritage Overlay protection. He considered that the grass circle would be able to withstand intervention. He considered that Ross Straw Field reads as a separate and separated part of the Park and that the Park is a series of separate areas.

With regard to the Manningham Parkland area, he considered that the 1984 Master Plan has flexibility in it and that, as part of the Master Plan, the wetlands are not of high significance.

He accepted that the elevated roads will have an enormous impact and will change the character of this part of the Park “*absolutely dramatically*”. He considered that the avenue of elms in this area stands in stark contrast to other elements nearby and should be protected, along with the wetlands, as a buffer between the wetlands and the viaducts.

Mr Patrick considered the transport infrastructure within Royal Park to be a barrier to movement, and that the sugar gums near the tram line which are to be impacted by the realignment of the tram line are aging and may need to be removed before long.

He considered that the philosophy of the 1984 Master Plan can continue as it should be able to accommodate well-designed interventions into the Park, integrating the proposed works with relatively limited visual impact. Replanting and revegetation will assist in this. He accepted that there will be a loss in terms of the Flemington Road elms proposed to be removed, but that these can be replaced, and proposed a Performance Requirement that trees of the same taxon and local provenance be used for replanting.

In response to a question from Mr Wren regarding the viaducts at the western portal, Mr Patrick stated that the LMA is seeking ways to minimise the visual impact by such means as additional vegetation, extending the wetlands to create more water than grass, and to integrate the proposed works as best as possible. He believed that the scheme can accommodate landscape treatments to “*overcome the wounds*” in the Ross Straw Field area; an area of low value where the proposed works can be accommodated. Asked about the time-frame to achieve a high quality outcome, Mr Patrick said that the rates of growth in the Park are surprisingly quick and that there would be a strong sense of regrowth in five years.

He favoured a maximum use of tunnels as opposed to the cut-and-cover construction method, accepting that any cut would be “*quite wide*” and more damaging.

Asked if a Tree Management Plan should be written into a Performance Requirement or part of a Construction Management Plan, Mr Patrick agreed, for trees near any proposed works.

In terms of the Elliott Avenue works, he said that the location has some logic being close to the Zoo as it partially screens the view from the north and that the works can be screened, possibly by re-establishing bushland planting as envisaged by the Master Plan, not as a screening wall to hide the works but to integrate them.

Asked if a location on the boundary of Royal Park would be preferable, Mr Patrick acknowledged that this would be an alternative in heritage terms but did not favour the Flemington Road location that has been canvassed.

Asked about the Ross Straw Field area he considered it to be a less significant element of recreation as baseball is a minor sport and Ross Straw Field is part of a modified landscape.

In terms of the 1984 Royal Park Master Plan, Mr Patrick agreed that it changed the approach to landscape architecture for parks of this type, its features being how it approached indigenous vegetation and the layers of history and development. Whether the Project works would enhance the Park's values, he advised that he wasn't sure, but this would depend on traffic volumes. He supported retention of the trees in the Elliott Avenue median although avenue planting is being replaced by a more integrated and naturalistic approach.



He considered that traffic is already a major element, with a significant impact in terms of noise and visual presence. While the portals and viaducts will be visible, with a significant impact, this can be moderated by planting, including in the shaded areas under viaducts.

Mr Tweedie, in re-examination, asked if the proposed net increase in tree canopy is a positive. Mr Patrick agreed, assuming it is consistent with the Master Plan. Regarding the use of cut-and-cover construction method, Mr Patrick considered this to be acceptable, as there are few trees in the affected areas and re-establishment of new trees would be a satisfactory outcome.

Submitters provided extensive criticisms of this part of the Reference Project, citing loss of parkland, both temporary and permanent, loss of residences and impacts on remaining properties, visual intrusion, loss of amenity for nearby open space, poor environments under the viaducts and the visual conflicts with the 'Melbourne Gateway' as reasons for opposition to the proposal.

The Friends of Royal Park (Submission 396) focused on the area west of the Upfield rail line. The group's concerns were that the wetlands, the White's Skink habitat and, in particular, the Remnant Native Vegetation Site, would be destroyed. The group was concerned that the Reference Project would cause loss of property values in the area, increased noise pollution and light spill and that there would be long-term impacts of the construction work.

Regarding loss of trees, the group's view was that while trees may be removed and replaced this was inconsistent with the aim of letting trees grow to maturity as part of returning the Park to its naturalistic character.

The group felt that the project had been rushed and that greater thought was needed before it could be considered a worthwhile project.

The Safety Net for Royal Park (Submission 257) was a comprehensive assessment of the Reference Project which concluded that the CIS showed no significant consideration of measures to avoid impacts or of alternatives with lesser impacts. SNRP put forward a proposal (SNRP Option 1) which the group considered had fewer impacts on Royal Park and the Moonee Ponds Creek corridor because it followed a route between The Avenue and CityLink that is both underground and to the south of Racecourse Road. A second scheme (Option 2) extended the tunnels to Oak Street south of the wetlands.

The essence of SNRP's position was to remove all aspects of the Project from Royal Park east of Oak Street and hence remove any visual or other impacts on the Park.

The community group Residents Against the Tunnels (RATs) made a comprehensive presentation, including comments about the visual impacts of the project, particularly in the Manningham Parklands area. They asked rhetorically "*What is minimised and what is maximised?*" in reference to the viaducts across this open space and the resumption of residential properties west of Manningham Street. The group contended that the UDF would not be able to appropriately manage the visual impacts of the Project on public open spaces.

The Australian Garden History Society noted the cultural significance of Royal Park and considered that the CIS failed to appreciate this significance, with the Reference Project having "*unacceptable impacts*" on the western part of the Park.

Urban Camp is a building in Brens Drive where groups of school children from regional Victoria stay when in Melbourne. The Urban Camp building abuts the Proposed Project Boundary in an area of Royal Park where either bored tunnel or cut-and-cover construction may be used. Representatives of Urban Camp advised the Committee that, in discussions with the three contractors bidding for the Project, they advised that the impacts on the Camp would be so significant it was suggested that they should close for the duration of the works.

**(iii) Precincts 3 and 4: Along CityLink North**

The parts of the Project that are generally along the Moonee Ponds Creek corridor were the subject of many submissions.

Issues raised by Moonee Valley City Council, and reinforced by many other submitters including sporting groups, community groups and individuals, was that the Reference Project would have major visual impacts. It would require loss of passive and active open space due to the design the road and the necessary occupation of land at various locations, whether due to construction at ground level or as elevated structures. The visual impact of proposed noise walls was raised as a significant visual impact.

The extent of land required and the impacts on the activities of sporting clubs, the community garden and open spaces generally were the subject of several submissions. These submissions highlighted, where relevant, the visual proximity of the road, whether at ground level or elevated, and the added visual impact of noise barriers if they are to be installed.

Moonee Valley Council's submission described the various Council plans, strategies and policies that Council has in place to manage and enhance its open spaces, improve transport, walking and cycling. For Council, Ms Hicks stated that the visual impact on neighbourhoods and open spaces of the elevated structures along the Moonee Ponds Creek corridor cannot be mitigated. She stated that the UDF and the Urban Design Principles will not appropriately mitigate the significant impacts of the Project on Moonee Valley.

Council prepared a document (Appendix A to Document 194, being Document 171) to *“try and ensure that the regionally significant open space and amenity of the neighbourhood is not further compromised and appropriate offsets are created”*. It described and showed in diagrams and maps what mitigation measures Council proposes for each of the Debney's Park area, Delhi Reserve and Travancore Park, Fenton Street and Brisbane Reserves, the Essendon Community Garden, and Ormond Park. It is evident that these measures, while addressing the various impacts of the Project on Moonee Valley's open spaces and parklands, they do not fully mitigate the impacts but work with them to reduce their severity.

Moonee Valley Council has endeavoured to resolve the physical and land-take impacts of the Project. While this exercise demonstrated that Council and its community can, by making compromises, accommodate the construction of the Project in Precinct 4, it demonstrated that impacts will remain.

**(iv) Precinct 5: CityLink South**

South of Racecourse Road the main concern was that the elevated road would have unacceptable impacts on the amenity and environment of the Moonee Ponds Creek and open space corridor. It is inconsistent with the Arden-Macaulay Structure Plan and, particularly for people living in the converted and extended former warehouse building at 18 Bent Street. The elevated road would be intolerably close to their windows and balconies with all the attendant issues of visibility, noise, air pollution and loss of property value.

There were several submissions, from residents and commercial property owners close to Part B, as well as Melbourne City Council, which criticised Part B in terms of whether it is required now on traffic grounds or for its visual and other impacts.

Several submitters proposed that Part B, if required, should be located on the east side of CityLink for two main reasons; one, that the land use in this area is more industrial and there is some vacant land, and two, that there would be fewer impacts on sensitive land uses such as the open space corridor of the Moonee Ponds Creek and on nearby residential areas. It may also be that connections to the Part A, if it was oriented towards a point midway between Racecourse Road and Arden Street rather than towards the Manningham Parklands, would be less dominant than the Reference Project's interchange viaducts.

**8.2.3 Discussion**

The Reference Project describes new road and associated infrastructure at four parts of the project:

- Precinct 1: At and around the Hoddle Street / Eastern Freeway junction;
- Precinct 3: Royal Park at and around Elliott Avenue;
- Precinct 3: Royal Park in the area of the Manningham Parklands;
- Precincts 3 and 4: Along CityLink north of the proposed junction with the Project; and
- Precinct 5: Along CityLink south of the proposed junction with the Project.

These are discussed separately.

**(i) Precinct 1: Hoddle Street/Eastern Freeway Interchange**

The Committee notes the primary function of the Project, being *“an 18 kilometre freeway-standard road connecting the Eastern Freeway to CityLink and the Port of Melbourne area and extending to the Western Ring Road”*. In this regard, the purpose of the new work in the Hoddle Street area is to direct traffic on the Eastern Freeway into a tunnel travelling west, and vice versa. Other traffic movements are both ancillary to this primary function, or are already in existence.

Experts engaged by LMA to prepare technical reports remained fully supportive of the Reference Project. Any acknowledgement of adverse impacts or community concerns expressed in submissions was almost universally discounted, the capacity of the Performance Requirements as included in the CIS and the contractor's obligation to address any issues being the accepted fall-back means of resolving any perceived concerns.

Submitter opposition to the Hoddle Street flyover was almost universal. Reasons included:

- There is no compelling justification in terms of vehicle numbers, particularly as the 'reverse movement' is not catered for in similar fashion, that is, without traffic signals;
- The loss of all residential properties on the east side of Bendigo Street and three properties in Hotham Street;
- The proximity of the flyover to residences in and near Alexandra Parade East;
- The visual impact of the flyover itself;
- The change in character of the intersection to one more akin to outer urban freeway interchanges than an inner city location and an environment surrounded by heritage overlays;
- The proximity of the flyover and its cable tower to the Shot Tower and the visual intrusion of the tower on vistas to the Shot Tower, which are protected under the Yarra Planning Scheme; and
- Noise caused from the traffic on the elevated roadway.

**(ii) Precinct 3: Royal Park - Elliott Avenue**

The permanent works proposed in the Reference Project in this area are largely below ground. However, based on the Mapbook, open cut trenches occupy a length of about 330 metres along Elliott Avenue and about 80 metres to its east to the portal locations. Other works include the realignment of the tram line for a distance of about 300 metres, an elevated structure for southbound traffic on Elliott Avenue and the associated infrastructure of lighting, signage, signals and railings. A number of trees will be removed, and replacement planting is presumably proposed.

Construction activity within the Proposed Project Boundary is more extensive than the proposed permanent works, and these will have a potentially very significant impact on this part of the Park, both during construction and after. These works include the possible cut-and-cover construction method being used from the western portal to 200 metres east of Elliott Avenue. Along this length of underground road, the Proposed Project Boundary has a width varying from 200 metres to 70 metres. If all of this area is affected by the works, there would be a significant impact on the Park in terms of disruption to activity, loss of trees, loss of open space, disruption to movement, visual intrusion and impact on birdlife and fauna.

The Mapbook shows parts of the Elliott Avenue ramps as open trench, parts as cut-and-cover and part as bored tunnel. From the limited information provided by LMA regarding the method of construction, a tunnel boring machine (TBM) will excavate the main tunnels from west to east, commencing in the Manningham Parklands. While this is understandable, the method of boring the on-and off ramps is not evident, given the size and lack of manoeuvrability of the TBM that has been described to the Committee. While this matter is largely for the contractor to resolve, it is of concern to the Committee because the impact of this aspect of the construction is not evident and its consequent impact on this part of Royal Park is therefore unknown in extent and severity.

LMA advised that the bidding consortia may consider the prospect of cut-and-cover further east than 200 metres east of Elliott Avenue (as proposed in the CIS as the easterly limit of cut-and-cover) as far as The Avenue as part of a non-conforming bid.

Experts engaged by LMA were supportive of the Reference Project while acknowledging that there would be, at times, significant impacts on this part of Royal Park both temporary and permanent, but that these impacts were acceptable.

This position was not held by other submitters, whether professionals, special interest groups or individuals. While there was some recognition that, if the route had to pass through Royal Park and if there had to be ramps in the Royal Park area, these could either be better designed or relocated to a less central and less sensitive location.

Concern was expressed regarding the uncertainty surrounding both the extent and impact of cut-and-cover as opposed to bored tunnel and the timing of such works in terms of Park use, particularly the loss of open space during construction, including cut-and-cover construction.

Representatives of the Urban Camp had been advised by LMA that it would be able to operate during Project construction but tenderers suggested to the Urban Camp it may need to close.

### **(iii) Precinct 3: Royal Park - Manningham Parklands**

The Reference Project includes the construction of roads in an open cut trench and on viaducts from a portal below the Upfield rail line across the Manningham Parklands, across Oak and Manningham Streets through an area where residential properties are to be acquired and over CityLink. One pair of viaducts links to CityLink to the north, with an extension to Ormond road, and another pair sweeps around towards the south, linking to both CityLink and to a new elevated road on the west side of the elevated CityLink south of Racecourse Road.

The works remove the capacity of much of the Manningham Parklands to continue as active sporting fields, including the baseball diamond at Ross Straw Field and ovals used for various sports, both informally and formally. The works also impact an area of woodland north of the tunnel portal and a water storage basin west of Manningham Street.

A total of 55 properties are to be acquired within the Proposed Project Boundary and, as advised by LMA, there are additional residential properties outside the boundary where property owners have requested acquisition due to the proximity of viaducts to their dwellings. Minor roadworks are required to the existing level of Oak Street to achieve clearance from the viaducts which cross it.

The Proposed Project Boundary extends across the full area of the Manningham Parklands, from the north side of the Upfield rail line to the north side of the Trin Warren Tam-boore Wetlands. This extensive parcel of land has an area of about 17ha, and includes, as well as sporting fields, passive recreation areas, avenues of trees and the wetlands, a large area of woodlands on the rising ground to the south-east, regarded as important as is the habitat of White's Skink.

This mixed use public space effectively constitutes the extent of Royal Park west of the Upfield rail line, all of which is within the Proposed Project Boundary.

The LMA, in response to a request of the Committee, advised (Document 507) that the area is within the Proposed Project Boundary as it is the anticipated location of activities including (Document 507):

- Assembly of the tunnel boring machine;
- Machinery storage and maintenance workshops;
- Acoustic shed;
- Laydown areas;
- Area for spoil storage, loading zones and truck access;
- Construction zone for CityLink ramps to north and south;
- Office for up to 200 staff and parking for up to 1000 cars; and
- Site accommodation, training and meeting rooms.

LMA identified a useable area for these activities to be the 7.8ha of land excluding the wetlands and the steeply sloping land. However it is evident that much of this flat open area is to be occupied by roads in trench or on viaduct. It is notable that the only road access to this area is Oak Street leading to Park Street to the north and Church Street leading to Flemington Road to the south, both of limited traffic capacity with residential and institutional frontages.

The Committee has reservations about the capacity of these roads to service the proposed construction works site and to manage the volume of trucks anticipated to remove unwanted spoil from the tunnels without causing unacceptable noise and other impacts.

The northbound viaduct from this area to CityLink is understood to be constructed early in the construction process to provide a route for trucks to carry spoil away from the site. While this may be feasible, the details of this aspect of the Project are not clearly spelled out to a degree that the Committee is reassured of its practicality and feasibility.

Professionals engaged by LMA who, having read written submissions relevant to their areas of expertise, generally concluded that the Reference Project remained an acceptable means of achieving the road function of the Project in terms of its connections to CityLink, and did not recommend or support any change to it.

LMA provided detailed information on how those sporting clubs and groups affected by the loss of playing fields in this area, will be assisted in relocation to alternative sites.

#### **(iv) Precincts 3 and 4: CityLink North**

North of Mount Alexander Road, the Project comprises the viaducts of the northern ramps from the tunnel portal which connect to CityLink northbound, a new section of road on the west side of CityLink extending to north of Dean Street and a new, partly elevated, off ramp to Ormond Road.

The northbound carriageway of the Project is on a flyover over CityLink about 100 metres north of the angled yellow 'cheesestick' component of the 'Melbourne Gateway'. It occupies part of the concreted Moonee Ponds Creek on the west side of CityLink to a point north of the Ormond Road overpass. An off ramp, some 250 metres long is proposed to provide access to Ormond Road from the Project. This ramp will be on structure as it rises to the level of Ormond Road.

There is no complementary southbound ramp from Ormond Road (Brunswick Road), presumably due to a lack of available land in this area, and an inadequate distance to the off ramp.

The major area of visual impact in the area north of Mount Alexander Road will be the required sound walls to reduce traffic noise to an acceptable level. There is thus a trade-off between achieving appropriate noise levels and the visual effects of noise walls, the heights and locations of which are unclear. The use of dense planting to hide sound walls has some merit, but it is evident that space is frequently very limited, that sound walls on elevated structures such as the Ormond Road off ramp cannot be screened and will be highly visible due to their height above ground level.

The ability of some sports clubs to continue at their current locations is compromised or made very difficult due to the proximity of road, road structure or sound walls.

LMA does not propose any compensation or other solution to the loss of open space, as it has done with Melbourne City Council and sporting clubs in Royal Park. This is something that Moonee Valley Council seeks.

#### **(v) Precinct 5: CityLink South**

In considering the purpose and alignment of Part B, it is clear that while its design and location facilitate traffic movements between Part A of the Project and the Port area, there is significant opposition to it, both in principle and in terms of the location on the west side of CityLink.

South of Mount Alexander Road, Part B of the Project is an elevated structure, generally on the west side of CityLink and at a similar height above ground level.

It extends south to Footscray Road where the proposed western section of the Project commences. From Racecourse Road, the Project is above the Moonee Ponds Creek open space corridor and in places above private property, road and rail infrastructure to the Melbourne Freight Terminal beyond which it connects to Footscray Road.

The viaduct has a width of about 25 metres and is located at varying distances to the west of CityLink, but generally some 35 metres away from it. The Proposed Project Boundary is further west, encompassing roads and properties up to 100 metres from the viaduct itself.

For its length between Racecourse Road and Mount Alexander Road, the elevated road has a width of about 25 metres and is separated from CityLink by about 10 metres. The Proposed Project Boundary extends about 50 metres west of the CityLink structure and covers land which is open space, part of the Debney's Park Estate currently used for a variety of purposes including soft landscaping with trees, hard paving, a recently-constructed adventure playground and part of an extensive community garden.

The general alignment of the Proposed Project Boundary through this area has been configured to deliberately exclude the Flemington Community Centre, a multi-purpose building used by residents of both the Estate and wider community.

While not precise, it has been calculated that the location of the elevated Project is about 30 to 35 metres from the 20 storey apartment building at 120 Racecourse Road.

This part of the Project will have a significant visual and operational impact on both the nearby residential buildings and the community centre, and on the open space and its facilities.

In terms of visual impacts, there are the views to the elevated road structure itself from many ground level vantage points and from the windows of apartments, but also of the traffic on the viaduct. It is noted that the sound tube, a functional and visual component of the Melbourne Gateway, and which extends for a distance of 300 metres, was installed to reduce noise and visual impacts of traffic on CityLink to improve amenity and reduce noise for people in the open space and the buildings of the Debney's Park Estate.

In visual terms, the sound tube is effective in not only reducing direct traffic noise in the immediate vicinity but in screening vehicles from view, which reduces the sense of their proximity.

The Project not only makes the sound tube largely redundant but brings a new elevated road some 40 metres closer to residences and directly overhead of the open space areas and the facilities in it. The visual impact will be significant both from a distance, at close quarters and when underneath this proposed road.

The elevated road will have a major impact in visual terms on Mount Alexander Road immediately north of the existing CityLink overpass. Here, the Project is higher than CityLink as it passes over CityLink a few metres to the north. The Project at this point is about 25 - 30 metres from a recently-constructed 30 storey apartment tower on the former Lombard site.

The visual impact of Part B of the Project south of Racecourse Road will be felt in several ways;

- Views to it along east-west streets, including Arden Street, Macaulay Road and Racecourse Road and several local streets, where it will be another structure near to but separated from the existing CityLink;
- Views to it from the bike and pedestrian path on the east side of Moonee Ponds Creek and from the open space along the creek, where the viaduct will either be in close proximity or directly overhead;
- Views from pedestrian points such as Macaulay Station;
- Views from commercial and industrial properties, including Vision Australia and the West Melbourne Terminal Station, both properties where the viaduct is above these properties and whose businesses will be directly affected by it; and
- Residential properties in the Arden-Macaulay redevelopment area, in particular those facing the viaduct in Bent Street where the western edge of the viaduct is generally as close as 8 to 10 metres from these properties.

Part B of the Project is stated in the CIS Summary Report (p.5) as being a separate direct southbound connection from the Eastern Section to the Port precinct part of which is a three kilometre elevated road (viaduct) parallel to and on the western side of CityLink from Mount Alexander Road to Footscray Road and including north-facing ramps at Arden Street.

Thirteen residential properties and 12 commercial properties are to be acquired.

#### **8.2.4 Findings: Precinct 1 – Hoddle Street/Eastern Freeway Interchange**

The Committee considers that the design of this intersection, as well as the proposed land acquisition for the temporary sidetrack on Alexandra Parade, is the consequence of road design taking precedence over other considerations. The Committee believes that the traffic



function of the Project in this area can be met by means other than as shown in the Mapbook.

As discussed in Chapter 6.3.4, the Committee considers that by attention to the staging of works and the possible relocation of the eastern portals to a location further east, the need for the sidetrack, and hence the acquisition of many properties including some of acknowledged heritage value, can be avoided.

The Committee considers that the additional traffic functions of the intersection required by the Project can be achieved without the flyover.

Impacts of the Reference Project on this area include:

- Acquisition and demolition of many residential and commercial properties;
- Loss of heritage properties and impacts on heritage precincts;
- Social disruption to residents whose properties are to be acquired;
- Loss of amenity and neighbourhood character and changed visual environments for residents of properties close to areas of property acquisition;
- Significant visual intrusion of the flyover and its associated infrastructure;
- Changed local movement patterns, particularly pedestrian movements; and
- Impacts in terms of air quality as discussed in Chapter 10.

The Committee considers that these impacts can be either avoided or minimised by further design investigations, and that these investigations must be holistic in terms of factors other than facilitating traffic movement.

The Committee has made a number of recommendations in this regard and changes to the Performance Requirements. The Committee finds to reduce the Project's visual impact, the following design and construction responses are required:

- Design to ensure there are no above ground structures (apart from necessary overhead signs, lighting and sound barriers) at the Eastern Freeway/Hoddle Street interchange, and resolve the traffic movement served by the flyover in a less visually intrusive manner that requires no acquisition of residential property.
- Locate the portals east of the Hurstbridge/South Morang rail bridge, (whether or not the road design in the area east of the Reference Project's portals changes), with openings in this covered area for ramps as required.
- Investigate the capacity to cover roads which are below natural ground level as far east as the relocated portals as a means of creating useable passive public open space and to improve north-south pedestrian and cycle links in this area.
- Sequence the construction process and the management of traffic on Alexandra Parade during construction so that all ground level activity occurs within the Alexandra Parade reserve, thereby negating the need for the sidetrack and the proposed property acquisition for it.

The Committee notes that the Eddington Report (at Section 9.3, Further Recommendations) states that *"If the opportunity is not taken to improve priority for public transport and to improve community amenity, the reductions in surface traffic when the tunnel opened would be eroded over time by natural growth in traffic. Given the likely nature of cut-and-cover in Alexandra Parade, there will also be scope for significant landscaping and beautification*

*works at the completion of construction, as well as opportunities for improving cycling and pedestrian options”.*

The Committee agrees with this recommendation and therefore finds that an urban design study should be undertaken for Alexandra Parade and Princes Street between Lygon Street and Hoddle Street and the Hurstbridge/South Morang railway line precinct. The study should aim to enhance the environment in response to reduced through traffic volumes; provide improved amenity for abutting land uses, pedestrians and bicycle movements; and maximise open space and landscaping within these parameters.

The Committee finds that any structure or works in this Precinct be consistent with the revised Urban Design Principles in Appendix F.

The Committee also finds that measures to improve north-south connections and increase 'green time' at signalised intersections for trams, vehicles, bicycles and pedestrians should be implemented.

### **8.2.5 Findings: Precinct 3: Royal Park**

The Committee considers the visual and related impacts of the Reference Project in this area represent an unacceptable intrusion into Royal Park. The further reduction in open space, the permanent loss of trees, the realignment of the tram line and the increase in road and traffic-related infrastructure can and should be avoided.

The Committee accepts that the route of the Project may pass under this main part of Royal Park but, if this is the selected route, the visual and landscape impacts on the Park must be reduced to a minimum. This is a key objective of the CIS, namely:

*To minimise adverse impacts on the quality of the existing built environment and landscape, including public open space, and maximise the enhancement of public amenity where opportunities exist. (Executive Summary, Technical Appendix H: Urban Landscape and Visual Impact Assessment, page i.)*

The Reference Project does not minimise adverse impacts on the landscape of Royal Park.

The Committee notes however, the acceptance by the LMA (CIS Summary Report, p. 36) that:

*In Precinct 3, there would be significant temporary and permanent impacts [at the] Elliott Avenue interchanges.*

The difference between the objectives of the CIS and the design of the Reference Project in regard to Royal Park are unfortunate and significant.

The Committee recognises that cut-and-cover construction would cause more temporary visual and landscape impacts than a bored tunnel, but accepts that these temporary impacts will not be long term.

It considers that the Urban Design Principles have merit and should be met, and that the Reference Project fails to do so.

The Committee has recommended that the Elliott Avenue interchange not be proceeded with due to its visual intrusion into this part of Royal Park and its impact on the landscape values of the Park, in favour of other means of achieving the proposed traffic movements.

The design of any structure or works in this part of Royal Park should be consistent with the Urban Design Principles set out in Appendix F.

### **8.2.6 Findings: Precinct 3: Manningham Parklands**

The Manningham Parklands are the most visually impacted part of the Project area. The Committee considers that the evidence in support of the Reference Project in this area is unconvincing, and it was persuaded by the evidence and submissions made by experts, community groups and individuals.

The Committee finds it surprising that these parklands and their adjacent areas of biodiversity significance have been chosen as the optimum location for the construction of such visually divisive infrastructure.

The alignment of the roads and viaducts needs to be modified to ensure that following the completion of the Project, due to the extensive visual and long-term functional impacts of the Reference Project in this area, there is no net loss of passive or active public open space.

The Committee recommends that construction activity should be avoided near land identified as being the habitat of White's Skink or the edges of the Trin Warren Tam-boore wetlands east of Oak Street, and that the part of the Project connecting to CityLink to the east of Manningham/Oak Streets be placed underground.

### **8.2.7 Findings: Precincts 3 and 4**

While this section of the Project has direct impacts in terms of visibility of roads, sound walls, traffic and infrastructure such as lighting, signage gantries and the like, these are not of sufficient severity that the Committee recommends any major changes. This is despite the Committee's acknowledgement that there are significant consequences for nearby residents, local parks and sporting fields.

### **8.2.8 Findings: Precinct 5**

The traffic function of Part B and the traffic connections from Part A to Part B is discussed in Chapter 6 of this Report, which concludes that Part B cannot be justified based on projected traffic volumes until and unless the Western Section of the Project is resolved.

The Committee considers that it would be less visually and socially intrusive for major interchanges, particularly those requiring double-height flyovers, to be located away from sensitive land uses such as residential properties and open space areas where visual and other impacts are greatest, and located in less sensitive areas where industrial uses or other transport infrastructure already exists.

The Committee considers that Part B has been designed without proper attention to the impacts of its alignment on land through which it passes and on properties close to it. A more thorough process, including an assessment of sensitive land uses and the preparation and assessment of alternatives, would have identified the evident shortcomings of Part B. If, indeed, this identification and evaluation of alternative alignments has been carried out by LMA, it is not evident in the CIS or other public information. This has led to community disquiet and scepticism. The occupation of part of the Vision Australia property in Barrett Street, very recently upgraded as a national facility, suggests an inadequate planning and evaluation process and supports the perception that the Project has been designed with

inadequate attention to its impacts and following the ‘line of least resistance’ and been the primary determinant of the alignment.

The Committee considers that in terms of its significant visual impact on the Moonee Ponds Creek corridor and buildings and public spaces adjacent to the route, the extent of residential property acquisition that is to be acquired and its proximity to residential properties that are not to be acquired, Part B is an unacceptable design outcome.

The Committee acknowledges that any alternative alignment will have design challenges. These are not able to be understood because the CIS does not include an analysis of factors which led to the selection of the proposed alignment; and the process of arriving at the proposed alignment is not clearly described and is required to be accepted at face value.

The design of any elevated road in this area should be resolved so that impacts such as overshadowing, visual impact, light spill and other aspects are minimised and are consistent with the Urban Design Principles set out in Appendix F, particularly as they apply to elevated road structures.

## **8.3 Urban Design Framework Assessment**

### **8.3.1 Introduction**

A feature of the CIS is the UDF (Technical Appendix C). While it is a stand-alone document, it is referred to in the *Urban Landscape and Visual Impact Assessment* (Technical Appendix H) at Section 2.4.3 where it is stated that:

*The Urban Design Framework illustrates ideas that:*

- *Respond to regional and local issues at key locations,*
- *Show how urban design opportunities could achieve positive outcomes, although it is recognised these are not fully resolved design solutions*
- *Benchmark the urban design quality desired for the project.*

Page 7 of the UDF notes that it has been developed taking into account a range of factors including landscape and visual impacts. Relevant to visual impacts are these Urban Design Aspirations (p. 10):

- A consistently high quality, innovative, enduring, urban design response that contributes to Melbourne's reputation for design excellence in the public realm;
- A unifying concept and coherent sense of journey for users of the road and the shared use path network;
- A sequence of significant landmarks - the Eastern Gateway at the Eastern Freeway, the Melbourne Gateway at CityLink, and Western Gateway at Footscray Road/Docklands Highway;
- A series of secondary 'moments' along the way, creating a memorable experience and aiding legibility for road users - the tunnel portals, Elliott Avenue, the tunnel and viaduct journeys; and
- Strengthens place values, resulting in high value usage and activity, improved access for all and an attractive, safe and comfortable public realm.

The UDF describes a series of Principles and Benchmarks which are intended to “*establish the overarching performance requirements for the urban design of the project*”. Many of

these refer to visual aspects, whether directly or indirectly. They are set out in pages 13 - 39 of the UDF and are too numerous to articulate here but it is evident that they cover a wide range of criteria against which the LMA intends both the Reference Project or any variation of it is to be judged.

### 8.3.2 Key Issues

The Committee accepts the LMA's position that the Reference Project is a 'concept only', a position reinforced by Mr Morris on several occasions at the Hearing. It recognises that the eventual design for Stage 1 of the Project proposed by bidders may differ from the Reference Project, provided it is within the Proposed Project Boundary as shown in the Mapbook, unless there are compelling reasons to depart from it.

The Executive Summary of Technical Appendix H: *Urban Landscape and Visual Impact Assessment* states (page i) that:

*The evaluation objectives relevant to this assessment, as set out in the Scoping directions, are:*

- *Visual amenity - to minimise adverse impacts on the quality of the existing built environment and landscape, including public open space, and maximise the enhancement of public amenity where opportunities exist.*
- *Noise, vibration air emissions and light spill - to minimise adverse impacts from noise, vibration, air emissions and light spill.*

It further states that:

*The Scoping Directions require an Urban Design Framework to guide the detailed design of project infrastructure in order to minimise adverse impacts or enhance visual amenity. This Urban Design Framework has been developed for the CIS, and includes ... Urban Design Principles [and] Qualitative benchmarks.*

The CIS (Summary Report, p. 43) notes that "*The Reference Project incorporates a detailed, project-wide Urban Design Framework developed by Linking Melbourne Authority*". In the UDF, it is stated (p. 5) that:

*The project is to be designed, developed and delivered by the private sector. Rather than propose a series of prescriptive urban design solutions, this Urban Design Framework articulates some of the key issues and opportunities posed by the project. It stipulates the urban design principles to which the project must respond and benchmarks the quality of the urban design outcomes that are required by Linking Melbourne Authority and the Victorian Government.*

It is therefore appropriate to assess the Urban Design Principles to determine:

- Whether the Reference Project meets these Principles and their associated benchmarks; and
- If they are appropriate as a means to ensure that the Scoping Directions can be met.

### 8.3.3 Submissions and Evidence

The LMA called Mr Alan Wyatt of ERM. Mr Wyatt presented a summary of the Urban Design Framework (Technical Appendix C) stating that it "*does not provide prescriptive urban design outcomes*" and that it "*envisages that the successful contractor will provide a detailed*

*design*". The UDF provides examples of built projects around the world which are intended to illustrate options that may be incorporated in the final design. Mr Wyatt's evidence substantially comprised images of examples of bridges, elevated road structures, tunnel portals, landscaped areas, lighting and public artworks, with reference to the five Precincts of the project, as illustrative of written statements included in the UDF.

Mr Wyatt stated that the project can be a good urban design outcome and that the tunnel element of the project demonstrates the LMA's goal of minimising the visual impact.

He considered the junction of the Eastern Freeway with Hoddle Street to already be a gateway; a 'quasi-entry' to central Melbourne and that the proposed flyover, described in the CIS as an Eastern Gateway, would not be visually intrusive depending on its design. He cited the Sydney Harbour Bridge and the Westgate Bridge as examples.

Asked if a site analysis as the starting point of the design process had been undertaken (as required by Clause 15 Built Environment and Heritage in the State section of planning schemes) as part of the design process, Mr Wyatt replied that he did not know.

Mr Wyatt was referred to the statement at Section 2.2 of the UDF regarding minimising the extent and impact of elevated road structures. He considered that elevated roads can be well-designed, and can be celebrated, consistent with Melbourne's reputation for good design, but accepted that the viaducts in the area of Royal Park west of the rail line would worsen the quality of the area, and that the ideas put forward by Melbourne City Council, including earth mounding over extended tunnels, would be an option. He further agreed that this idea of extended tunnels would be a good design outcome if traffic issues could be successfully dealt with.

When asked if the flyovers between CityLink and the western portals were contrary to the image of the Melbourne Gateway, Mr Wyatt considered that they could be done well and be in harmony with CityLink. He accepted that the presence of the existing CityLink viaducts was not good and that the proposed additional elevated structure would have some additional visual impact.

In terms of the Design Opportunities (UDF, p.25) Mr Wyatt accepted that the Reference Project does not achieve all the desired design outcomes.

He accepted that the eastern vent stack, in its proposed location, would compete visually with the historic Shot Tower, and acknowledged that he had not been asked to consider the visual impact of the western vent stack, but considered that it could be designed to be a visual feature.

In terms of the relevant Performance Requirements in the CIS, Mr Wyatt considered that there was no revision needed to these.

When asked in re-examination if the Performance Requirement LV1 (set out on page iii of the Urban Landscape and Visual Impact Assessment) is adequate to ensure that the Urban Design Principles are used to minimise visual impacts, Mr Wyatt agreed, along with other objectives.

Mr McGauran felt that, while the contents of the Urban Design Principles are valid, there needed to be a better balance between road-oriented objectives and "*place-oriented*" ones.

When asked by Mr Wren about how to get urban design imperatives right, Mr McGauran proposed:

- Retaining the clarity of the edge of the inner city with minimum impacts west of Hoddle Street;
- Concealing the road within Royal Park; and
- Being consistent with the qualities of Royal Park and the Arden-Macaulay area.

He acknowledged the need to connect with CityLink and that some elevated elements would be necessary.

Mr Morris noted that the Incorporated Document is more relevant than the Reference Project to the Committee's considerations

Mr McGauran's conclusions included that:

- There is a poor alignment between the Urban Design Framework and the Victorian Urban Design Charter, and the Reference Project;
- The Reference Project undermines the Arden-Macaulay Structure Plan;
- The extent of viaducts creates a substantial undercroft area that impoverishes the open space options and is contrary to environmental ambitions and urban design benchmarks;
- The loss of trees in Royal Park is contrary to the acknowledged values of the Park given its inner urban location;
- The assessment framework set out in Section 4.7 of the Urban Landscape and Visual Impact Assessment is *"a grossly inadequate assessment tool for the project"*; and
- The ratings summarised in Table 13.1 are inconsistent.

Mr Robert Moore, Manager Urban Design and Docklands at Melbourne City Council, was called by Mr Pitt.

Mr Moore's submission was that the UDF is a design guide rather than a comprehensive UDF. He argued that it fails to provide an over-arching strategic vision for the total project, fails to provide mandatory (and some discretionary) Performance Requirements, and is vague due to its use of words such as 'minimise', 'where possible', and 'where feasible'. It is not clear how and where the many images included in the UDF might be applied to the Reference Project or any variation of it.

He offered alternative design solutions for Alexandra Parade (generally consistent with those of Mr McGauran) and for roads within Royal Park. He proposed new Performance Requirements for the surface roads that currently carry the traffic expected to use the Project, noting that these design changes are achievable based on LMA's stated anticipated traffic volume reductions following the opening of the Project.

He stated that the UDF must require a high quality urban design solution for any above ground road infrastructure. At the Melbourne Gateway on CityLink, any works must be sympathetic to the design integrity of the existing Gateway and not attempt to compete with it, and that any sound wall treatments in that area must be consistent with and complementary to the sound tube element of the Gateway.

In terms of visual impact, Mr Moore considered that there should be no third party signage; a topic not addressed in the CIS or the UDF. He concluded by asserting that the UDF lacks

overall vision, is inadequate and unenforceable and should be supported by mandatory performance requirements.

The issue of mandatory Performance Requirements was raised in cross-examination by Mr Tweedie for LMA who noted that there are no such controls in Docklands or in Clause 22.18 of the Melbourne Planning Scheme. Mr Moore replied that the development in Docklands was managed “*with some difficulty*”.

Mr Czarny was critical of the process of the preparation of the CIS, stating that “*The CIS as documented does not in my opinion provide a balanced appraisal of the project and its influence, and relies almost wholly on inadequate mitigation measures*”. He stated that:

*The removal of the process from typical planning channels of rigorous enquiry has severely compromised the ability of the project to represent a contextually response format. The CIS ... relies almost wholly in a list of inadequate mitigation measures. This document does not engage in adequate, established processes for the production of Urban Design Frameworks.*

In terms of the UDF, Mr Czarny stated that “*Whilst positively idealistic in its intention, the clear use of the UDF as applied ameliorative device to the Reference Project as designed, renders its integrity dubious at best. The stage of the process at which it has been produced means that it is unlikely to achieve a meaningful impact upon the successful delivery of the project*”.

In response to a question from Mr Tweedie, Mr Czarny stated that the Urban Design Principles were appropriate in themselves, but the UDF is at odds with them.

Mr Czarny considered that there were other ways to link the tunnels with CityLink other than the Reference Project, and that these need to be explored. In response to a question from Mr Wren, he considered that the options proposed by Mr Higgs (Document 109) are generally preferable in urban design terms.

#### **8.3.4 Discussion**

The Urban Design Principles are listed in the Urban Landscape and Visual Impact Assessment (Section 2.4.2, pages 5 - 10) and in the Urban Design Framework under twelve headings:

- 1. Design and integration*
- 2. Bridges and elevated road structures*
- 3. Tunnels*
- 4. Ventilation structures*
- 5. Noise attenuation*
- 6. Pedestrian and bike connections*
- 7. Public realm, parkland and recreation*
- 8. Planting and vegetation*
- 9. Materials and finishes*
- 10. Lighting*



## 11. Water Sensitive Road Design

### 12. Integrated public artworks

While these Principles are extensive, they are characterised by prevalent use of terminology that often includes unquantifiable or unmeasurable words and phrases such as ‘minimise’, ‘maximise’, ‘make a positive contribution’, ‘consider the incorporation of ...’, ‘spaces ... are to be optimised to facilitate spatial useability’. The Principles occasionally state the obvious, such as ‘10.3 Design is to provide lighting for pedestrians and cyclists to the parkland, places and paths ...’, or ‘11.2 Employ best practice ...’.

This lack of clear criteria against which to assess the design makes it difficult to have confidence that any design for the project will achieve the goal of the Scoping Directions, namely, *“to minimise adverse impacts or enhance visual amenity”*.

The word ‘minimise’ is of relevance in assessing the Reference Project, as it is frequently used in the evaluation objectives included in the Scoping Directions. It is reasonable that the Project, whether the Reference Project or any alternative design, be assessed against these evaluation objectives.

In terms of Visual amenity, the evaluation objective is *“to minimise adverse impacts on the quality of the existing built environment and landscape, including public open space, and maximise the enhancement of public amenity where opportunities exist”*.

The Committee considers that the Reference Project fails to meet this clear objective and does not incorporate many of the key elements of the Urban Design Principles and hence the UDF.

This position was reached having assessed the Reference Project against the Urban Design Principles. Illustrative of this are the following Principles, as examples:

Table 11: Response to Urban Design Principles

URBAN DESIGN PRINCIPLE	ASSESSMENT COMMITTEE COMMENT
1.1 Provide a ... memorable, innovative urban design response which is enduring in expression and quality of finish, for road users, surrounding land users and for Melbourne as a whole.	The elevated viaducts across the Manningham Parklands do not meet this Principle in terms of those open spaces.
1.2 Provide a high quality outcome for residents and adjacent private and public land users with respect to protection of views and privacy, noise amelioration, minimising overshadowing, and providing access and security through innovative and high quality urban, architectural and landscape design.	This Principle is not achieved in terms of the project's impacts on the residents of Bendigo Street (west), the Bent Street apartments or the users of the Debney's Park Playground.
1.6 Any works within the Moonee Ponds Creek corridor are to enhance the creek environment for open space, amenity and habitat ...	The shadow of a new elevated roadway above the open space which is currently open to the sky between Racecourse Road and Arden Street fails to meet this Principle.

URBAN DESIGN PRINCIPLE	ASSESSMENT COMMITTEE COMMENT
<p>2.2 Minimise the extent and impact of elevated road structures, where possible.</p>	<p>If this Principle has been met, it implies that it is absolutely not possible to reduce the extent or impact of the viaducts over the Manningham Parklands, the Moonee Ponds Creek corridor or public open space in Travancore such as the Essendon Community Garden, as examples.</p> <p>It implies that any different design at the tunnels' western end must involve more elevated road structures, a point which has been refuted by many submissions.</p> <p>It also implies that the Reference Project reduces the impact of the proposed elevated road structures to the greatest extent possible. This is arguably not been achieved for the Hoddle Street flyover and the viaducts at the western end. The Reference Project has failed its own Urban Design Principles.</p>
<p>2.6 Any new road structures in the Royal Park setting are to emphasise the dominance and broad context of the parkland and landscape, and minimise severance.</p>	<p>The Elliott Avenue works and the portals and elevated road structures in the Manningham Parklands area demonstrate that this Principle has not been adhered to in the design.</p>
<p>6.2 Maximise opportunities to create and enhance pedestrian and bike paths that provide for local connections and linkages to the wider Principle Bicycle Network.</p>	<p>It was only in response to an approach by the Boroondara Bicycle Users Group that LMA investigated and prepared an indicative design to link the Yarra Trail to Alexandra Parade through the Hoddle Street intersection. No provision for this useful and much-needed link was made as part of the Reference Project.</p>
<p>7.3 Maximise opportunities to create or enhance open space, community and recreation facilities, and to improve accessibility, inclusiveness and general amenity for the community.</p>	<p>Given the Reference Project's occupation of existing open spaces in Royal Park and along the Moonee Ponds Creek corridor and the impacts of these intrusions, it is evident that the Project not only fails to enhance existing open spaces or create new ones, but that it also does not maximise community and recreation facilities, reduces accessibility and is detrimental to the social inclusiveness engendered by sporting clubs and associations which will have their playing areas and facilities adversely affected.</p>
<p>8.1 The design is to enhance the landscape amenity and biodiversity of areas along the corridor and surrounds.</p>	<p>The Part B viaducts will adversely impact the landscape amenity of the Moonee Ponds Creek environment south of Racecourse Road.</p> <p>The inclusion of the Trin Warren Tam-boore wetlands and the woodland habitat of White's Skink within the Proposed Project Boundary raises doubt that this Principle will be adhered to.</p> <p>The occupation of the Manningham Parklands by construction activity including an office building and car park and later by elevated viaducts is clear evidence that existing areas of high landscape amenity are to be sacrificed rather than enhanced.</p>

The Committee notes the response by LMA to its Request for Information under s57(4) of the MTPF Act that the Reference Project is a concept design and that it does not constitute a considered response to the UDF.

The Committee acknowledges that the Reference Project does meet some of the many Urban Design Principles, but it remains concerned that any alternative design for the Project may not be a more complete example of the Urban Design Principles in action than the Reference Project.

The above examples place significant doubt on the degree to which the Reference Project is an example of the Urban Design Principles in action. More importantly, it places doubt on whether any design can represent the implementation of the Urban Design Principles.

At Section 2.4.3 of the CIS it is stated that *The Urban Design Framework illustrates ideas that:*

- *Respond to regional and local issues at key locations;*
- *Show how urban design opportunities could achieve positive outcomes, although it is recognised these are not fully resolved design solutions; and*
- *Benchmark the urban design quality desired for the project.*

The Committee considers that the Reference Project is not an acceptable response to the Urban Design Principles.

Section 2.4.3 states that *“The Urban Design Principles outline the overarching urban design intention of the project. These principles are not mitigation measures”*. This latter sentence makes it clear that mitigation measures are not included within the UDF, and raises the question as to when or where they are to be established and rendered enforceable.

It appears that LMA, has written its own Urban Design Principles and has used them to justify the Reference Project, although it is evident that, in many instances, the Reference Project fails to meet these Principles. The Committee finds that the Reference Project fails to meet a number of important Principles and benchmarks described in the UDF.

Any design proposed by bidding consortia must be able to be rigorously assessed against these Principles and benchmarks to ensure that it achieves them to an acceptable extent, otherwise the UDF does not serve its stated purpose as a key determinant of the final design.

The Committee notes the LMA's comment (in its response to the Request for Information under s57(4) of the MTPF Act, p.61) that *“Performance Requirement LV1 requires that the ultimate design of the Project demonstrate how the Urban Design Framework, including the urban design principles, has been met. The UDC must accordingly be taken into account, along with the more tailored urban design principles articulated in the UDF, in the formulation of the ultimate project design”*.

### **8.3.5 Findings**

The Committee considers that the process of reaching the design that is the Reference Project has not been one that follows the logical path of identifying viable options, evaluating them, engaging the community in the process at an early stage when such input can be incorporated, testing the preferred option against robust criteria, adjusting it and then proposing it with supporting justification.

The Committee is concerned that the Reference Project has preceded the UDF and the Urban Design Principles and that it is not an evident response to them. While the Urban

Design Principles include many unquantifiable statements, they do collectively represent a set of objectives against which any design for the Project should achieve. The Reference Project fails to do this.

Technical Appendix C 'Urban Design Framework' to the CIS includes a set of Urban Design Principles and qualitative benchmarks which *establish the overarching performance requirements for the urban design of the project*. The Principles are set out in twelve categories with one or more primary Principles for each and, in some cases, 'sub-Principles'.

The Cities of Melbourne (Document 444), Yarra (Document 477) and Moonee Valley (Document 244) provided proposed changes to the exhibited version of the Urban Design Principles. So did urban design expert Mr Rob McGauran and the individual submission of Andrew Herington (Document 489). The LMA provided specific responses to the proposed changes via a number of separate versions of Table 1 in its closing submission (Document 525). It also provided its consolidated version of changes it accepts in a five page version of Table 1, dated 15 April 2014.

The Committee accepts that the Principles are in general, an appropriate basis on which to assess any design for the Project. However, the Committee considers that the Principles can be more effective, and recommends they are revised as set out in Appendix F.

It is relevant that the LMA frequently stated that the Reference Project is a concept only and is unlikely to be constructed. For this reason Urban Design Principles must be sufficiently broad to be able to be applied to any design, and not relevant only to the Reference Project. This is not the case with many of the Principles, and they are revised accordingly.

The 'sub-Principles' have not been revised. The Committee anticipates that the independent assessor will apply the intent of them, as appropriate, to aspects of any design whose details are not covered by them, as articulated in Appendix F.

For the Principles to be effective, they must be incorporated into design objectives and specifications for each element of the Project, as appropriate.

As it is likely that the responsibility for this incorporation and ultimate implementation will be the contractor's, it is recommended that an independent design assessor or assessment panel be appointed, whose role will be to ensure that at all stages of design, documentation, tendering and construction, these Principles are incorporated and implemented. This could be the Office of the Victoria Government Architect or some other independent body.

If a process such as this is not adopted, it raises the potential that the Principles are not achieved to the extent necessary to ensure best practice, as described in Principle 1.1.

It is noted that many words and phrases within these Principles are subjective and not able to be quantified. An example is 'minimise', which is hard to measure as there is no comparison project against which to determine if minimisation has actually been achieved. Another is 'where appropriate'. This absence of measurable performance standards, is a further reason for the oversight role of an independent design assessor.

The Committee finds that the final design for the Project must be rigorously evaluated against the Urban Design Charter for Victoria, and the Urban Design Principles provided in Appendix F.

## 9 Noise and Vibration

### 9.1 Introduction

#### 9.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(d) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to noise and vibration:

*Whether the **noise, vibration**, air emission and light spill impacts of the project will be appropriately managed by the proposed measures. (Committee emphasis)*

The relevant applicable approval under the MTPF Act is a Works Approval under section 19B (road tunnel and ventilation system air and noise emissions) of the *Environment Protection Act 1970*.

#### 9.1.2 Conclusion of the CIS

Chapter 12 of the CIS concluded that while construction of the project tunnel may produce extended periods of noise and perceptible vibration at times, these would be minimised in accordance with the relevant guidelines and standards. In relation to the recommended performance requirements the CIS concludes that they would not completely remove the potential for vibration impacts. However, they would minimise the potential for vibration related damage to property and other infrastructure, as well as heritage items and buried assets (such as pipelines and fibre optic cables) and therefore would confine impacts to personal amenity rather than physical damage to assets:

*Short-term amenity related impacts would be managed by implementation of the construction environmental management plan.*

*The potential for vibration impacts as a result of surface construction would be managed by compliance with AS2570 where practicable and compliance with the performance requirements.*

*Any noise impacts generated by the project would need to comply with the VicRoads or CityLink noise limit criteria. This could be achieved with noise barriers and other noise reduction treatments at particular locations.*

The CIS concluded that once operational, the Project may provide noticeable "and even significant" improvements in the noise environment in proximity to existing roads due to a reduction in traffic volumes.

According to the CIS, the tunnel ventilation system would be designed to achieve compliance with SEPP N-1.

#### 9.1.3 Objectives and Performance Requirements

The CIS evaluation objective (set by the Scoping Directions) for Noise and Vibration is:

*To minimise adverse impacts from noise, vibration, air emissions and light spill.*

There are nine corresponding Noise and Vibration Performance Objectives in the CIS:

- *A requirement to Comply with limits on noise levels (Listed in Table 12-9);*

- *Minimise traffic noise impacts of East West Link – Eastern Section and local roads;*
- *To minimise noise impacts of the tunnel ventilation system;*
- *To minimise traffic noise impacts of East West Link – Eastern Section and Local Roads;*
- *Manage surface construction noise to protect amenity;*
- *Manage construction vibration and regenerated noise impacts to protect amenity;*
- *To manage construction vibration to protect utility assets;*
- *To manage construction vibration and regenerated noise impacts through community engagement to protect amenity; and*
- *To manage construction vibration and regenerated noise impacts to protect the Melbourne Zoo.*

An extensive list of Performance Requirements are specified in Chapter 12 of the CIS (Table 12-9) which are to be included in the Environmental Management Framework for the Project to meet these Performance Objectives. The CIS stated that it “*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”.

#### **9.1.4 Noise and Vibration Issues**

The Committee heard noise evidence from the following experts:

- Mr Peter Fearnside of Marshall Day Acoustics for the LMA;
- Dr John Heilig of Heilig and Partners Pty Ltd for the LMA;
- Mr Timothy Beresford of Norman Disney and Young for the City of Melbourne;
- Mr Robin Brown of Renzo Tonin and Associates for Moonee Valley City Council; and
- Mr Neville Goddard of Watson Moss Growcott for the City of Yarra.

At the request of the Committee, all experts met to discuss the relevant issues and determine points of agreement and dispute. A meeting on operational noise and noise and vibration from surface construction activities was attended by Messrs Fearnside, Beresford, Brown and Goddard.

At the conclusion of the conclave and further discussions an ‘*Agreed Statement*’ (Document 9), was provided to the Committee.

The following topics were discussed and generally **agreed** by the experts at the conclave.

- Where buildings are demolished in Precinct 1 the noise criteria should be ‘existing + 12dB’ for dwellings behind exposed to noise;
- Noise mitigation should be considered for open space;
- A number of suggestions for a construction noise management plan;
- A number of technical issues to do with different noise criteria;
- Further detail was needed in relation to traffic volumes behind noise modelling; and
- Pre-construction noise modelling is needed.

The following topics were discussed and generally **not agreed** by the experts at the conclave.

- There was not agreement on mandatory noise limits for open space;

- There was not agreement on a reduced noise limit for the Arden – Macaulay Structure Plan area; and
- Technical disagreement about a noise limit related to the Project and CityLink.

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to noise, the Committee has grouped its assessment under the following headings:

- Policy Settings;
- Consideration of Noise Impacts;
- Traffic Noise;
- Construction Noise;
- Tunnel Ventilation Noise; and
- Vibration.

## 9.2 Policy Settings

### 9.2.1 VicRoads Traffic Noise Reduction Policy (VTNP)

*VicRoads Traffic Noise Reduction Policy* (VicRoads, 2005) is an internal VicRoads policy that guides traffic noise consideration on roads constructed and managed by VicRoads and was tabled in the Hearing as Document 81.

The Policy identifies two categories of buildings for noise protection. Category A is defined as “residential dwellings, aged persons homes, hospitals, motels, caravan parks and other buildings of a residential nature”. Category B is defined as “schools, kindergartens, libraries and other noise sensitive community buildings”.

The VTNP sets noise limits for new (arterial roads or freeways built on new alignments) and improved (existing arterial roads and freeways that are widened by two or more lanes resulting in loss of protection from noise by building removal) roads. For improved roads, the criterion is qualified by being the greater of the numerical level or the level that would have prevailed if the improvements had not occurred.

The VTNP sets limits of 63 dB  $L_{A10(18h)}$  for Category A buildings and 63 dB  $L_{A10(12h)}$  for Category B structures. It contains a provision to consider limiting noise increases for road improvements where the existing noise levels are less than 50 dB  $L_{A10(18h)}$  by restricting the noise increase to 12 dB.

Off-reservation noise reduction measures (essentially building façade treatments) are provided for subject to practicability and to agreement with the relevant parties.

The VTNP includes consideration of retrofitting traffic noise reduction measures to existing freeways and arterial roads. The trigger noise level for considering retrofitting is 68 dB  $L_{A10(18h)}$ . That retrofitting program is limited to Category A and B buildings and includes provision for building treatments.

The Committee was informed by the LMA that the VTNP applies only at the ground level of sensitive receptors although this is not stated in the Policy itself. The ground level reference appears to derive from RDN 06-01 *Interpretation and Application of VicRoads Traffic Noise Reduction Policy 2005* (VicRoads 2010) and *Traffic Noise Measurement Requirements for Acoustic Consultants* (VicRoads 2011); documents not referred to in the VTNP.

The Committee was advised that the VTNP provides for design to ensure that traffic noise complies with the criterion specified for at least 10 years. The source for this figure appears to be RDN 06-01.

The VTNP does not provide for traffic noise protection for passive or active public open space but suggests that VicRoads will consult with affected parties on the need for small area open space protection.

The VTNP does not set a night time traffic noise objective but notes that “VicRoads will implement appropriate traffic management measures, if necessary, to ensure that night time noise levels are not excessively high”.

RDN 06-01 provides for the assessment of traffic noise reduction measures to be subject to a *practicability* test. That test includes evaluation of *feasibility* and *reasonableness*; those two aspects are described.

### 9.2.2 CityLink Concession Deed Traffic Noise Criteria

The Committee was informed by LMA that the CityLink Concession Deed requires the concession holder (Transurban) to meet a noise criterion of 63 dB  $L_{A10(18h)}$  at identified sensitive receptors. This requirement, unlike the application of the VTNP at ground level receptors only, requires compliance for elevated receptors that existed prior to the construction of CityLink. The source of this appears to be *Melbourne CityLink – Project Scope and Technical Requirements* at Clause 1.5, which notes:

*Except within tunnels, noise generated by traffic volumes consistent with the Design Traffic Capacities on the Link and at any tunnel portals must comply with the following noise level objectives:*

- (a) *63 dB(A)  $L_{10}$  (18hour) for Class A and B categories (refer VicRoads Noise Policy) of abutting development throughout the Project.*
- (b) *No attenuation required for Class C categories (refer VicRoads Noise Policy) of abutting development throughout the Project. (Panel note the VTNP contains no Category C.)*

*Noise attenuation measures on land or buildings outside of the road reservation are permitted subject to the written agreement of the Responsible Authorities and relevant property owners.*

The Committee was not advised if the Deed contains a practicability assessment. The Deed requires compliance for the length of the concession; that is, until 2035.

### 9.2.3 Australian/New Zealand Standard AS/NZS 2107:2000 Acoustics-Recommended design sound levels and reverberation times for building interiors

The standard specifies interior sound criteria for occupied building spaces and provides information by the use of the spaces. For each use a “... *satisfactory* and *maximum*” level is identified.

The noise levels are presented as dB  $L_{Aeq}$ . For dwellings near major roads the recommended *Satisfactory* level for living areas is 35 and the *Maximum* 45; for sleeping areas the levels are 30 and 40 respectively.



AS/NZS 2107:2000 is used to complement external traffic noise criteria. Traffic noise levels are used to establish appropriate levels of traffic noise that respect outdoor amenity. The Standard informs the extent of acoustic attenuation that might be required. The noise reduction for a building with open windows is usually taken as about 10-15 dB and with windows closed perhaps about 25 dB. In comparing external traffic noise objectives using the  $L_{10}$  metric with the internal  $L_{eq}$  objective for typical traffic noise  $L_{eq}$  is usually regarded as 3 dB less than  $L_{10}$ . Thus an external noise of 63 dB  $L_{A10}$  translates approximately to an indoor level with windows open of approximately 45-50 dB  $L_{Aeq}$ .

#### **9.2.4 Environmental Guidelines for Major Construction Sites, EPA Victoria, Publication 480 (1996)**

The Guidelines provide information for major roads and development projects to help set environmental performance objectives and how to meet them using best practice. The Guideline embraces a range of possible environmental impacts from major construction works including noise. It considers planning and design, the role of an environmental management plan including segmented plans for large sites, and inspections, monitoring and audits, and presents a number of measures that might be used to mitigate construction noise from all site activities. One of those suggested measures is placing limits on operating hours.

#### **9.2.5 Noise Control Guidelines, EPA Victoria Publication 1254 (2008)**

These Guidelines provide suggested noise control measures for a wide range of sources including construction and demolition site noise and are primarily to be used by Councils in avoiding and resolving noise nuisance. The Guidelines identify its purpose as protecting nearby residents from unreasonable noise, and identifies the importance of community consultation, particularly for large scale or high impact works and articulates the importance of work scheduling. A schedule to the Guidelines provides guidance on noise limits for out of hours, including night time.

The schedule does not include a noise limit during normal working hours but explains that there remains the ability to respond to noise that is, at any time, considered to be “unreasonable”

The Guidelines make provision for “unavoidable works” that might be essential but breach the construction noise requirements. It allows for approval of “... low-noise or managed-impact works that are inherently quiet or unobtrusive or that do not have intrusive characteristics such as impulsive noise”.

#### **9.2.6 Noise Guidelines – Construction and Maintenance Works, VicRoads Technical Guidelines, VicRoads (2009)**

This document provides a statement of the regulatory framework for noise control from the *Environment Protection Act 1970* and the *Health Act 1958*. It presents a construction noise management flow chart, and it documents noise management options grouped into “source control, path control and receptor control”. The Guidelines discuss work times and give guidance for noise monitoring, and provides information on community engagement and stakeholder liaison.

### **9.2.7 Australian Standard AS2436:2010: Guide to noise control on construction, maintenance and demolition sites.**

This standard provides guidance on controlling noise from construction sites including the investigation, identification and measurement of noise and of project supervision. It presents information on the noise mitigation effectiveness of various control measures.

### **9.2.8 State Environment Protection Policy (Control of Noise from Industry, Commerce and Trade) No. N-1 (SEPP N-1)**

SEPP N-1 applies in the Metropolitan region and has the goal of protecting people from noise from commerce and industry. It defines the beneficial uses to be protected as:

*Beneficial uses shall be the normal domestic and recreational activities including, in particular, sleep in the night period. (p.2)*

The Policy defines noise sensitive areas to be protected and also defines day, evening and night periods when different limits apply. Schedules to the Policy describe the process for measuring background noise and determining appropriate limits. The SEPP specifies base noise limits such that:

*The noise limit shall not be less than the values below:*

*Day period*                      45 dB(A)

*Evening period*                40 dB(A)

*Night period*                    35 dB(A)

### **9.2.9 Interstate Policies**

The *New South Wales Road Noise Policy* (2011) was tabled as Document 80 and is a comprehensive document that provides quantitative noise assessment criteria for a wide range of land uses. The criteria are more stringent and extensive than those in the VTNP. Its application is subject to tests of feasibility and reasonableness. The NSW Policy is adopted NSW Government Policy and is administered by NSW EPA.

The *Interim Construction Noise Guideline*, Department of Environment and Climate Change NSW (2009) is a comprehensive document that describes a quantitative and a qualitative approach to controlling construction noise. The quantitative assessment method prescribes guidance noise levels or management levels for various sensitive land uses and discriminated by time. The qualitative method is to be applied to short term works of not more than three weeks at an individual sensitive location. The guideline provides for the application of feasible and reasonable measures to the noise control approaches.

The *Construction Noise Strategy*, Transport Construction Authority NSW (2011) presents suggested construction noise management strategies. It provides suggested maximum allowable noise levels for items of construction plant and equipment. It gives noise levels above background, by day and time, for which additional mitigation measures are advocated.

### 9.3 Consideration of Noise Impacts

The Committee has considered noise impacts in the following three areas which consolidate some of the Precincts used in the CIS:

- The eastern section, being the connection to the Eastern Freeway, and surface works at Hoddle Street including changes to the Eastern Freeway;
- The tunnels including the access to the portals;
- The western section, being the surface works providing the connections to CityLink and the port connection.

Appendix J (*East West Link – Eastern Section, Surface Noise and Vibration Assessment*) of the CIS presents the LMA's evaluation of surface traffic noise impacts for the Reference Project.

#### 9.3.1 The eastern section of the Project (Precinct 1)

The summary of Appendix J noted the following:

- Traffic noise may increase in some areas due to increased Eastern Freeway traffic and new links to Hoddle Street, including the flyover;
- The limit for most residences in the area will be 68 dB  $L_{A10(18h)}$ ;
- The limit for residences exposed to increased noise by building demolition will be 63 dB  $L_{A10(18h)}$ ;
- Modelling of noise scenarios shows predicted levels can be complied with using noise barriers up to 4.5m high in most locations;
- Noise mitigation is not proposed in the Yarra Bend Park open space area; and
- There may be some noise reduction along Alexandra Parade.

At the eastern end it is proposed to apply the VTNP.

Modelled noise contours to support the assessment were provided in Appendix J including more detailed contours for Bendigo Street and the proposed sidetrack. Proposed noise barrier locations and heights were also included.

The key results of the assessment were:

- Sensitive receptor locations with removal of intervening buildings:
  - Bendigo Street, Collingwood. Increased noise exposure for houses on the west side due to demolition of houses on the east side. Existing noise levels are about 57-64 dB  $L_{A10}$ . Noise barriers would protect dwellings to a level of 63 dB  $L_{A10(18h)}$ .
  - Alexandra Parade, Clifton Hill. The sidetrack construction requires removal of buildings which will expose residential properties abutting the northern side to increased traffic noise. The existing noise level at those dwellings is about 50 dB  $L_{A10}$ . A 4m high noise barrier to protect dwellings to a level of 63 dB  $L_{A10(18h)}$  is proposed which would be in place until construction is complete and new buildings erected.
- Sensitive receptor locations with no removal of intervening buildings:
  - Alexandra Parade East, Clifton Hill. East of Hoddle Street and north of the Eastern Freeway the houses are currently protected by a noise barrier along the Eastern Freeway. They will be affected by the proposed Hoddle Street flyover. The existing noise level is about 64-65 dB  $L_{A10}$ . A 4.5m noise barrier is proposed

plus a 1.5m high barrier on the left side of the flyover to meet the proposed 68 dB  $L_{A10(18h)}$  criterion.

- Maugie Street, Abbotsford. East of Hoddle Street and south of the Eastern Freeway a noise barrier currently protects these houses from the southbound exit ramp on to Hoddle Street. The existing noise level is about 66 dB  $L_{A10}$ . A 3 to 4m noise barrier is proposed to meet the 68 dB  $L_{A10(18h)}$  criterion.
- Alexandra Parade, Clifton Hill. West of Hoddle Street and north of the Eastern Freeway a noise barrier currently protects the social housing units from the at-grade loop road. No existing noise level has been provided for that location. A 4m noise barrier is proposed to meet the 68 dB  $L_{A10(18h)}$  criterion.
- Alexandra Parade, Collingwood. West of Hoddle Street and south of Alexandra Parade/Eastern Freeway a noise barrier currently protects these units from the Eastern Freeway emerging from in-cut to at-grade. The existing noise level is about 59 dB  $L_{A10}$ . A 3.5 to 4m noise barrier is proposed to meet the 68 dB  $L_{A10(18h)}$  criterion.
- Alexandra Parade traffic noise impacts. Existing noise levels are currently significantly over the 68 dB  $L_{A10(18h)}$  criteria in Alexandra Parade. Two short term day time noise measurements, one on each side of Alexandra Parade, both recorded noise levels of about 77 dB  $L_{A10}$ . Noise barriers will not be practical in this environment, but given that noise is not expected to increase by 2dB or more, and may decrease, it is unlikely additional noise mitigation will be required.
- Hoddle Street traffic noise impacts. Appendix J does not address traffic noise from works on Hoddle Street. Two short term day time noise measurements are provided, both on the western side of Hoddle Street. North of Alexandra Parade the reading was 69 dB  $L_{A10}$ , and south of Alexandra Parade was 77 dB  $L_{A10}$ .
- Yarra Bend Park. The Eastern Freeway east of Trenerry Crescent is bounded on both sides by Yarra Bend Park. Appendix J notes that although traffic in this area is expected to increase by 50%, no noise limits are proposed based on the VTNP.

### 9.3.2 The tunnels of the Project (Precinct 1 (part), Precinct 2) and Precinct 3 (part))

Appendix J notes that there will be no adverse surface traffic noise impacts in this section and there is potential for a reduction in surface traffic noise.

### 9.3.3 The western section of the Project (Precincts 3, 4 and 5 (part))

The summary of Appendix J included the following for Precincts 3 and 4:

- As 63dB noise limit will apply to the eastern end of the Project as per CityLink, requiring consideration of cumulative noise impact;
- The noise limit is likely to be exceeded at a number of locations at the eastern end without mitigation works;
- Noise mitigation should bring the project into compliance at ground level, but noise levels at higher building facades may require building treatment;
- Traffic noise levels around Elliott Avenue should decrease, but will increase around the tunnel portals and Ross Straw Field; no mitigation is proposed for these open space areas.

- Existing noise barriers on CityLink will need to be relocated and possibly increased to ensure the noise criterion of 63 dB  $L_{A10(18h)}$  is met by the combined noise from CityLink and the Project; and
- As for other precincts no open space mitigation is proposed.

The Ormond Road ramps were not part of the Reference Project when Appendix J was prepared. An Addendum was provided as part of the expert witness statement of Mr Fearnside.

Precinct 5 Appendix J includes:

- Noise sensitive uses are limited in this area and include housing in the Bent Street Kensington vicinity;
- Noise criteria would not be exceeded at ground level with the Project;
- On the upper levels of the Bent Street apartments the addition of noise from the Project will only be in the order of 1 dB by 2031.

The Arden Street ramps were not part of the Reference Project when Appendix J was prepared. An addendum was provided as part of the expert witness statement of Mr Fearnside. This adds for Precinct 5:

- The Arden Street ramps change the predicted noise contours in this area but the predicted levels are below the 60 dB target; and
- If noise sensitive uses are introduced in this area (Arden-Macaulay) it will be the developers responsibility to address traffic noise mitigation.

## **9.4 Traffic Noise**

### **9.4.1 Introduction**

This section of the report considers the scoping directions, evaluation objectives and Committee Terms of Reference in evaluating the predicted traffic noise impacts. The Committee recommends traffic noise performance requirements which it believes are appropriate to providing a satisfactory acoustic environment and which are achievable.

The exhibited Performance Objectives and Performance Requirements are shown in Chapter 17 of the CIS.

### **9.4.2 Key Issues**

The key issues for traffic noise include:

- The adequacy, or otherwise, of the noise criteria of the VTNP to prevent annoyance from the noise of traffic using the Project;
- The appropriateness of the traffic noise management proposals in the CIS;
- Whether the daytime traffic noise criteria are sufficient to protect amenity;
- The need for a separate night time noise criterion to protect against sleep disturbance;
- The need to provide noise protection at elevated building levels;
- Providing acoustic mitigation of sensitive receptors to complement traffic noise criteria;
- Noise protection for passive and active public open space;
- The duration of compliance with traffic noise criteria; and

- Where traffic is projected to decrease on roads within the Proposed Project Boundary because of traffic diverted to that road, including Alexandra Parade and Princes Street, to ensure that the benefit of the associated traffic noise reductions are realised and maintained.

The following sections present the major elements that are essential to the Committee's discussion of traffic noise and its recommendations.

#### **9.4.3 Submissions and Evidence**

Mr Fearnside gave evidence for LMA. He provided a comprehensive presentation (Document 76) to the Committee that emphasised and explained the major points of the CIS traffic noise assessment including an overview on a precinct by precinct basis of the key noise issues for the Project. Mr Beresford gave evidence for the City of Melbourne. Mr Beresford's evidence focussed on the effect of traffic noise on Ross Straw Field and Royal Park near the proposed Elliott Avenue ramps, and on the port connection impact on the Arden–Macaulay area. He provided noise measurements in Ross Straw Field of 56-60 dB  $L_{A10(18h)}$  and near Elliott Avenue of 62 dB  $L_{A10(18h)}$ . He provided figures illustrating the traffic noise impacts on these two areas of Royal Park using the CIS modelling but without the façade correction used in the CIS. Mr Beresford discussed speech intelligibility implications of heightened traffic noise levels. For the Arden–Macaulay area he provided a noise measurement of 69 dB  $L_{A10(18h)}$  at the fourth floor of the Bent Street apartments and presented an approach for a noise criterion for that area.

Mr Brown was called to give evidence for the City of Moonee Valley. Mr Brown reported on measuring traffic noise at four ground level locations in Ascot Vale, Moonee Ponds and Flemington including the Flemington Community Centre. The results were in the range 56-61 dB  $L_{A10(18h)}$  indicating compliance with the CityLink Concession Deed at those sites. Measurements were also taken at the façades of levels 10 and 18 of 120 Racecourse Road in the Debney's Park Estate. These gave results of 67 and 69 dB respectively. Calculation of internal noise levels between 7 am and 10 pm indicated 57 dB  $L_{Aeq}$  with windows open and 40 dB  $L_{Aeq}$  with windows closed, and between 10 pm and 7 am 54 dB  $L_{Aeq}$  with windows open and 37 dB  $L_{Aeq}$  with windows closed. Mr Brown said that he would not expect the proposed noise barrier on the proposed elevated section of the project to provide significant noise attenuation to upper levels of the building.

Mr Brown suggested that the traffic noise assessment using a simple model should be updated with a more comprehensive one to assess with greater confidence the need for façade treatment. He advised that the CIS response to open space noise was *"a satisfactory approach."*

Mr Goddard gave evidence for the City of Yarra. He observed that the VTNP was developed and implemented to respond to community concerns about traffic noise while limiting expenditure of public funds on noise control and added that with that focus *".....the policy allows for relatively significant increases in noise level under some circumstances"*. Mr Goddard said that the policy is an appropriate basis on which to assess the impact subject to that caveat.

Submissions from the City of Melbourne raised a number of concerns, some of which included loss of amenity due to noise impacts in Royal Park, provision of noise barriers, and noise impacts from the portals. The key issues for the City of Yarra included increased noise and consequent social and environmental impacts, sleep disturbance, and increase in noise at the sidetrack area. The City of Moreland tabled a report on traffic noise measurements (Document 337) made at a number of residential receptors immediately south of the Ring Road in Gowanbrae. These showed day time traffic noise levels during the day to generally be within, sometimes marginally, the VicRoads policy level of 68 dBL<sub>A10(18h)</sub> and night time levels to be often similar to and not much less than those day time levels. Further, the data showed apparent differences in the noise character between day and night.

Various submissions from individuals and groups included concerns about traffic noise impacts on the Clifton Hill Primary School, Melbourne Zoo, various roads along and adjacent to the Project route, Royal Park, its facilities and surrounds and residential areas. Other matters raised included the effectiveness of noise attenuation structures, noise emissions not adequately addressed in the CIS, impacts on liveability, and from trucks and construction vehicles.

#### **9.4.4 Discussion**

##### **(i) Day time noise**

The Committee considers that it is not appropriate to propose different traffic noise criteria on different parts of the Project, and the Project must be assessed as a single project with uniformity in Performance Requirements. It is understood that that is the case with CityLink and EastLink.

The major factors influencing traffic noise are the number of vehicles using a road including the 'mix' of vehicles (particularly the number of heavy vehicles) and the intrinsic noise of the classes of vehicles. Other factors that contribute to noise are speed, road grade and the type of road surface. It is satisfied that the assessment of traffic noise has been appropriately carried out using projected traffic volumes, including heavy vehicles and road conditions as inputs to a well-developed and widely used, although simple, model.

However, evidence was provided to the Committee by the LMA that the traffic estimates for Part B are for the Project only and do not include traffic that would be generated by the proposed Western Section of the East West Link. That evidence indicated that the full East – West Link through to the Western Ring Road would be expected to increase traffic on Part B about fourfold. That would increase traffic noise by about 5 dB, which is a substantial increase in traffic noise. The Committee believes that it would be prudent to incorporate this increased traffic noise projection in the design of noise mitigation measures.

Based on the evidence before it, the Committee is not persuaded that the traffic noise Performance Requirements presented in the CIS are appropriate. It believes that it does not in all cases provide adequate protection from intrusive traffic noise that protects amenity and health. Further the complexity of the proposed Performance Requirements, a point acknowledged by the LMA, is likely to lead to uncertainty, and to difficulty in apportioning responsibility between the Project and CityLink, and possibly conflict and failure to meet the noise criteria.

The Committee has reservations about the appropriateness of a strict application of the noise limits of the VTNP. The policy is dated and is not consistent with contemporary practice in traffic noise control and appears to have no particular status in law or planning. Its application is difficult at the CityLink corridor because of the interface with the noise requirements of the CityLink Concession Deed.

The Committee recommends a uniform day time noise limit for specified noise sensitive sites affected by noise from the Project of 63 dB  $L_{A10(15h)}$ . The averaging time is discussed later.

## **(ii) Night time noise**

The Committee is aware that the present VTNP does not provide a specific and direct control of night time traffic noise. Given the usual diurnal variation of traffic, with day time volumes typically more than those at night, it is assumed that if day time traffic noise levels meet a criterion then night time levels will be less and thereby satisfactory. Some expert evidence supported that position.

The Committee is conscious that a major reason for limiting noise at night from any source is to provide protection against sleep disturbance. It is aware that many noise control strategies and policies provide for maximum noise levels at night, and that these are lower than day time levels. Traffic is a major source of noise along major roads in urban areas. The Committee believes that it is no longer appropriate to accept this implicit control of night time noise. Further, it seems feasible that on some roads there might be increasing heavy vehicle movements at night.

The submission from Moreland City Council was informative. The noise results taken from several residential locations adjoining the Western Ring Road in Gowanbrae, which show night time  $L_{A10(6h)}$  noise levels similar to or approaching the day time  $L_{A10(18h)}$  levels, suggests to the Committee that this premise of a day time traffic noise control resulting in a satisfactory night time level cannot remain unquestioned.

The Committee therefore recommends that a night time traffic noise level be implemented for the Project. It suggests that the level be 58 dB  $L_{A10(9h)}$  from 10 pm to 7 am. The Committee accepts that there is currently no night time Victorian traffic noise standard, but considers that given the intensively settled inner urban environment; and the likely 24 hour operation of the Project in terms of noise; the Committee considers the limit is not unreasonable.

The limit suggested above is approximately 55 dB  $L_{Aeq(9h)}$ . That compares with the NSW assessment criteria of 55 dB  $L_{Aeq(9h)}$  for the redevelopment of an existing freeway or major arterial road, and contrasts with 50 dB  $L_{Aeq(9h)}$  for a new freeway or major arterial road.

The 10 pm to 7 am night time band is advised to recognise a reasonable sleep time and to be consistent with many other noise strategies such as SEPP-N1.

The internal night time noise with windows open of that external traffic noise level would seem to be about 40-45 dB  $L_{Aeq}$ . Some AS/NZS 2107 noise mitigation would appear to be indicated to reduce noise by 10-15 dB  $L_{Aeq}$  to reach internal night time noise levels of 30 dB  $L_{Aeq}$ .



The Committee notes that in advocating both day time and night time traffic noise levels one would usually be expected to determine the 'transmission path control' noise mitigation measures (noise barriers and building façade treatments). If measures to meet the day time objective also meet the night time one that day time goal then prevails. If such day time measures fail to meet the night time objective the measures must be designed to meet that night time goal in which case the day time target would be expected to be met comfortably. It is that latter situation that demonstrates the value of a night time traffic noise objective.

The noise sensitive receptors for night time noise are the same as those to be protected for day time noise.

### **(iii) Noise objective time periods**

The Committee recognises that introducing a night time noise band affects the time band for the day time limit. That day time noise band hence becomes 15 hours rather than 18 hours and extends from 7 am to 10 pm. Evidence submitted to the Committee suggests that there would be insignificant difference in the traffic noise  $L_{A10}$  metric between 18 and 15 hours. At worst, the Committee believes that it may make the day time level very slightly more stringent by removing small periods of possibly lower traffic volumes.

### **(iv) Duration of traffic noise objectives**

The Committee acknowledges the difference between the VNTP and the CityLink Concession Deed on the length of compliance with traffic noise goals. The former requires mitigation design to be effective for a minimum of 10 years; the latter for the length of the Concession Deed.

The Committee recommends that for the Project the traffic noise objectives should be met for the duration of the Project Concession Deed, and that the works should include that within the present Proposed Project Boundary plus CityLink from Dynon Road north to where CityLink is included in that boundary.

### **(v) External traffic noise and internal acoustic amenity**

The Committee accepts that external traffic noise objectives may not always be prescribed as absolutes. Neither can acoustic attenuation of existing buildings to meet internal AS/NZS 2107:2000 noise criteria. Decisions must be tempered by considerations of feasibility and reasonableness. Those decisions may need to be made on a case-by-case basis.

The Committee believes that external traffic noise levels need to be set to provide protection of outdoor amenity, and that indoor noise levels from traffic need to protect indoor amenity including protection against sleep disturbance. That indoor amenity can be achieved by sufficiently low external traffic noise levels, or a combination of acceptable external traffic noise levels and building noise mitigation measures.

RDN 06-01 *Interpretation and Application of VicRoads Traffic Noise Reduction Policy 2005* (VicRoads 2010) describes practicability. That depends on feasibility and reasonableness. Feasibility includes cost of abatement, access, safety, topography, structural, heritage listings and maintenance. Reasonableness includes noise abatement benefits, site history

and project approval, urban design objectives, opinions of residents, and environmental impacts.

The Committee considers the following should be applied:

- The 63 dB  $L_{A10(15h)}$  day time and 58 dB  $L_{A10(9h)}$  night time external traffic noise objectives are to be met other than in circumstances where it is decided that it does not meet the practicability test as determined by the Independent Reviewer;
- In that case the traffic noise must not exceed 68 dB  $L_{A10(15h)}$  day and 63 dB  $L_{A10(9h)}$  and noise mitigation measures must be provided to the extent reasonably possible, as determined by the Independent Reviewer, to reduce that traffic noise;
- Regardless of the external noise, sensitive receptors affected by the Project traffic noise to the extent of not achieving the AS/NZS 2107:2000 internal noise objectives should be offered building treatments to achieve those levels other than where that fails the practicability test as decided independently by the Independent Reviewer; and
- In that case noise mitigation is to be offered to the extent that is reasonably possible, as determined by the Independent Reviewer.

The Committee envisages a system independent of LMA and the contractor to decide on the aspects of feasibility and reasonableness and on the balance between external traffic noise mitigation and building attenuation. It has suggested the Independent Reviewer would be appropriate for that role.

#### **(vi) Open space**

The Committee is not persuaded that open space should be afforded no protection from intrusive traffic noise; to not do so is to accord to such spaces the same acoustic protection as, for example, industrial areas or transport depots. It believes that for passive recreation those areas should have a traffic noise objective equal to that for residential protection. For active recreation there seems to be less justification for that level of noise protection and 5 dB higher level is reasonable.

The Committee recommends a traffic noise objective of 63 dB  $L_{A10(15h)}$  from 7 am to 10 pm for passive open space and 68 dB  $L_{A10(15h)}$  from 7 am to 10 pm for active open space. In making this recommendation the Committee is mindful of the diverse perspectives presented to it. It believes that these are appropriate traffic noise levels that will take the 'edge' off high levels of traffic noise and hence provide reasonable protection of the amenity of these open space recreational areas.

#### **(vii) Traffic noise at the eastern (Eastern Freeway connection) end (Precinct 1)**

A description has been provided earlier in this Chapter of the proposed traffic noise measures at the eastern end of the proposed project. At that end the Performance Requirements proposed by LMA are an application of the VTNP. The Committee finds that the traffic noise Performance Requirements proposed by LMA in the CIS are complex, and may not deliver an effective noise regime.

The Committee believes that a traffic noise level of 68 dB  $L_{A10(18h)}$  to protect residential amenity can no longer be seen as an criterion that is appropriate. It notes, for example, that

Technical Appendix J advises that for Ross Straw Field, noise levels would typically be 60-65 dB  $L_{A10(18h)}$  with levels near the tunnels portals up to 70 dB  $L_{A10(18h)}$ , and hence limiting that section to noise tolerant uses. 68 dB  $L_{A10(18h)}$  is within that range.

Accordingly the Committee believes that for the eastern end of the Project, the following are appropriate traffic noise management measures:

- A day time traffic noise limit of 63 dB  $L_{A10(15h)}$  (7 am to 10 pm) and a night time limit of 58 dB  $L_{A10(9h)}$  (10 pm to 7 am) should apply;
- Those criteria should apply to the VicRoads Category A and B noise sensitive receptors;
- Those objectives should apply at all habitable levels of those receptors;
- The objectives should apply to sensitive receptors that exist before the Project is in the planning scheme;
- Those noise limits apply to dwellings adjacent to the proposed temporary road, until they are subsequently shielded by new buildings to at least that noise level;
- Objectives of 63 dB  $L_{A10(15h)}$  from 7 am to 10 pm will apply for passive open space and 68 dB  $L_{A10(15h)}$  from 7 am to 10 pm for active open space;
- The noise objectives shall apply where traffic noise from the Project contributes to exceedences of those criteria at noise sensitive premises adjoining the eastern section of that road; that area is defined in the Performance Objectives; and
- In the event that internal noise levels at premises impacted by traffic noise attributable to the Project exceed the *Satisfactory* criteria specified in AS/NZS 2107:2000 noise mitigation should be offered.

**(viii) Traffic noise at the tunnels section (Precinct 1 (part), Precinct 2) and Precinct 3 (part)**

The Committee acknowledges that there is no surface traffic noise from traffic in a tunnel. It observes that although the CIS suggests the potential for noticeable improvements in traffic noise exposure on east-west surface roads, no estimate of that benefit is provided.

**(ix) Traffic noise at the western section of the Project (Precincts 3, 4 and 5 (part))**

For this area, the Performance Requirements proposed by LMA are an application of CityLink Concession Deed requirements with noise from the Project incorporated into that.

The Committee has considered traffic noise by consideration of the proposed interface of the Project with CityLink. Over a distance of approximately five kilometres from Dynon Road at the south to Moreland Road at the north the Reference Project runs parallel and close to CityLink, adds lanes or changes line marking. For effective traffic noise management, the Committee believes that it is appropriate that this be considered as a single road transport corridor.

The Committee finds that the traffic noise performance requirements proposed by LMA in the CIS are complex, difficult to understand, may not deliver an effective noise regime, and may lead to uncertainty and conflict between the concessionaires of these two roads. The Committee is not able to fully reconcile the CIS Technical Appendix J text on traffic noise objectives for this part of the proposal with the proposed performance requirements.

The Committee's understanding of the basic proposal is that CityLink is required to meet a traffic noise goal of 63 dB  $L_{A10(18h)}$  at all habitable floors of nominated sensitive receptors (although the CIS is equivocal on that) for the duration of the concession, that the CIS seeks to take advantage of a 2 dB allowance, and proposes to set a traffic noise level of 60 dB  $L_{A10(18h)}$  for the Project in this corridor.

The origin of that 2 dB is not clear to the Committee. It is used on a number of occasions in Technical Appendix J without explanation of its basis and justification. A number of submitters have opposed the use of this allowance. The Committee has identified a reference in VicRoads RDN06-01 *Interpretation and application of VicRoads Traffic Noise Reduction Policy 2005 under New alignments and upgrades*:

*If the existing noise level is >63 dB(A), then the objective is to limit noise level increase to 0 dB(A), which in practice is very difficult to achieve. The accepted practice when existing noise level is >63 dB(A) is to limit the increase in noise levels by no more than 2 dB(A), or the level that would have prevailed if the road upgrades had not occurred, whichever is the greater.(p.2)*

The Committee does not believe that it is appropriate that that allowance be applied in this circumstance. The Project is a very substantial undertaking with potentially significant noise impacts.

A 63 dB  $L_{A10(18h)}$  traffic noise at a receptor from one road source plus 60 dB  $L_{A10(18h)}$  from another road source at the same receptor gives a total traffic noise of 64.8 dB  $L_{A10(18h)}$ . (Committee estimate). This increase is within that 2 dB margin. When rounded to the nearest integer number that is 65 dB  $L_{A10(18h)}$ , an increase of 2 dB in the corridor.

The Committee believes that residents adjoining CityLink have an understandable expectation that traffic noise would be limited to 63 dB  $L_{A10(18h)}$  and not eroded. The Committee believes that it is not appropriate to allow slippage of that objective.

The recently announced widening of CityLink may also have implications for the noise environment in this area, both in relation to CityLink itself and the addition of the Project. The Committee does not believe that it is feasible to have two such adjoining roads with separate noise limits. A receptor is indifferent to the individual noise sources. Ensuring compliance would be fraught; the CIS acknowledges that separating the contributions of two such sources would be difficult. In the event of non-compliance with a traffic noise objective, the consequence might be uncertainty and possibly conflict between the road concessionaires with a delay or inability to provide an acceptable external acoustic environment.

Limited evidence before the Committee suggested that CityLink noise limits are being met at ground level. However, the evidence suggested exceedence of 63 dB  $L_{A10(18h)}$  at the façade of the Debney's Park housing estate. The length and height of noise barriers along this section of CityLink is apparent.

Assessed against the evaluation objectives, the Committee believes the exhibited traffic noise performance requirement for the CityLink interface is unlikely to be effective; may not be enforceable and if so with difficulty; and that maintaining the 63 dB  $L_{A10(18h)}$  should be

achievable in any case. The Committee concludes that the traffic noise proposal put forward by the LMA for this CityLink/East West Link corridor is not appropriate.

The Committee believes that for the shared road transport corridor between Dynon Road and Moreland Road the external traffic noise objective should be 63 dB  $L_{A10(15h)}$  for day time and 58 dB  $L_{A10(9h)}$  night time and that should apply to the Project and CityLink combined, without regard to the contribution from either road individually. As discussed earlier the Committee considers that a night time noise objective should be applied to the shared corridor. It is not persuaded that a day time limit is a sufficient surrogate for managing night time noise, more so with the likelihood of further increases in heavy vehicle traffic at night. Adopting the practice of a night time limit being 5 dB lower than that during the day it recommends a night time external traffic noise objective of 58 dB  $L_{A10(9h)}$ .

As discussed before, the Committee does not accept that the time period for the night time noise limit should be for six hours to align with the current day 18 hour time period. It recommends that the night time period be for nine hours from 10 pm to 7 am to more appropriately protect against sleep disturbance and to be consistent with wide spread practice in setting noise goals. The day traffic noise objective would hence apply for the 15 hour period from 7 am to 10 pm.

Hence, as with the whole Project the Committee recommends a day time external traffic noise criterion of 63 dB  $L_{A10(15h)}$  to apply from 7 am to 10 pm, and a night time level of 58 dB  $L_{A10(9h)}$  to apply from 10 pm to 7 am. The application of this is qualified by a practicability test.

The next issue is the vertical aspect of the application of recommended traffic noise objectives. That is, at what habitable level of adjacent sensitive receptors the noise limits should apply. This is particularly relevant in the western section because of the proximity of multistorey residential buildings adjoining the Project. It is not clear to the Committee how the VTNP and the CityLink Concession Deed apply to this matter. Table 2 (p.9) of Technical Appendix K states that the VicRoads practice applies to the *“Lowest habitable floor (generally ground floor) only”* and the performance requirements from LMA specify the application at *“all levels”*.

The Committee observes that the VicRoads policy itself does not prescribe that limitation; that interpretation seems to have its source in other VicRoads traffic noise documents that are not specifically referenced in the policy.

Table 2 (p.9) of Technical Appendix K states that the CityLink Concession Deed applies to *“All floors where noise sensitive uses take place”* which is then qualified with a note *“Not an explicit requirement of the CityLink Project Scope and Technical Requirements (PS&TR). However, noise mitigation measures were provided at all levels of the apartment towers at the Flemington public housing estate”*. The Technical Requirements provide physical specifications of that CityLink sound tube adjacent to the Debney’s Park housing estate but seem to provide no acoustic requirement. Evidence by noise modelling at the façade of those buildings by MDA in Table 2 (p.9) of Technical Appendix K and measurements presented by Mr Brown indicate external noise levels broadly in the range 65-70 dB  $L_{A10(18h)}$ , substantially higher than the objective.

The Committee finds that there is ambiguity and lack of clarity in the application of traffic noise objectives to sensitive receptors above ground level. An aspect of this is that the Committee's understanding is that traffic noise has been modelled at ground level of a building near an elevated section of road with modest noise barriers that shows compliance. That receptor is largely shielded from traffic noise from the structure; receptors above the road are not.

The Committee believes that it is necessary to apply all traffic noise criteria to all sensitive receptors above ground level. Accordingly the Committee has included Performance Requirements to give effect to this approach that applies to noise criteria at all levels of habitable buildings.

The Committee proposes that the noise sensitive receptors at which the recommended external traffic noise objectives apply are those identified as Category A and Category B in the VicRoads Policy amalgamated as a single group, including residential buildings, aged persons homes, hospitals, motels, caravan parks and other buildings of a residential nature, and schools, kindergartens, libraries and other noise sensitive community buildings. The Committee recommends that the traffic noise criteria advised should apply for the duration of the Project concession period.

To achieve the traffic noise criteria, the Committee suggests that for the current CityLink road transport corridor between Dynon Road and Moreland Road, the East West Link concessionaire should be responsible for ensuring that applicable traffic noise criteria are met for increases associated with the Project..

The Committee observes that the proposed connection to the Port of Melbourne (Part B) is estimated to carry about 15,000 vehicles per day. Evidence indicates that construction of the East West Link – Western Section would increase the number of vehicles on Part B connecting to WestLink to about 60,000 vehicles per day. The evidence to the Committee is that would increase traffic noise levels by about 5 dB. Hence the traffic noise at elevated levels of the Debney's Park Estate tower and the Bent Street apartments could increase from the present approximately 70 dB  $L_{A10(18h)}$  to about 75 dB  $L_{A10(18h)}$ . This issue will need to be considered if the Committee's primary recommendation on Part B is not accepted or as part of the planning for WestLink.

#### **9.4.5 Findings**

The Committee finds that the proposed traffic noise performance requirements (NV1) are not appropriate to manage the impacts of traffic noise. The measures proposed do not minimise traffic noise sufficiently to protect amenity and to the extent that is reasonably possible. The Committee finds that the corridor currently occupied by CityLink between Moreland Road and Dynon Road should be treated as single road transport corridor to be occupied by both CityLink and the Project, and that the Project be responsible for meeting applicable traffic noise criteria in that corridor due to increases in traffic noise resulting from the Project.

The Committee finds that the following should apply in terms of noise criteria:

- Apply a single day time traffic noise criterion to the Project for specified noise sensitive building uses of  $63\text{dB}_{L_{A10(15h)}}$  (7 am to 10 pm) to all such buildings at which traffic noise levels increase from the operation of the Project.
- Apply a night time traffic noise criterion for specified noise sensitive building uses of  $58\text{ dB } L_{A10(9h)}$  (10 pm to 7 am) to all such buildings at which traffic noise levels increase from the operation of the Project.
- Apply the criteria specified in the two points above for day and night time traffic noise at all habitable levels of buildings.
- Offer noise mitigation measures to all habitable buildings to meet the internal noise criteria for building uses provided under the *Satisfactory* column of Table 1 of Australian/New Zealand Standard AS/NZS 2107:2000 *Acoustics-Recommended design sound levels and reverberation times for building interiors*.
- Apply a traffic noise criterion of  $63\text{ dB } L_{A10(15h)}$  (7 am to 10 pm) for passive use open space and  $68\text{ dB } L_{A10(15h)}$  (7 am to 10 pm) for active use open space to all open space at which traffic noise levels increase from the operation of the Project.
- Apply the traffic noise criteria for the duration of the Project concession period.
- Apply a *practicability test* comprising assessment of *feasibility* and *reasonableness* for application of the traffic noise criteria and the AS/NZS 2107:2000 building noise mitigation. That test shall be as described in RDN 06-01 *Interpretation and Application of VicRoads Traffic Noise Reduction Policy 2005*. Practicability is to be determined by an Independent Reviewer.
- Undertake traffic noise and AS/NZS 2107:2000 compliance monitoring according to requirements developed in the Operational Environmental Management Plan. That must include monitoring at specified locations after commencement of road operation, after traffic patterns have settled and as required thereafter. Monitoring must comply with the requirements of RDN 06-01 and AS/NZS 2107:2000 as appropriate.
- Respond to incidents of non-compliance with traffic noise and AS/NZS 2107:2000 criteria and take remedial action as soon as possible.
- Provide traffic noise monitoring results publicly and provide generic AS/NZS 2107:2000 compliance reporting.

These findings have been translated into the modified Performance Requirements found in Appendix E of this Report and recommended for adoption for the Project.

## 9.5 Construction Noise

### 9.5.1 Introduction

This section of the report reviews the appropriateness of the proposed construction noise performance objectives proposed by the LMA. It recommends construction noise Performance Requirements which the Committee believes are appropriate to providing a satisfactory acoustic environment during construction and that are achievable.

The LMA has prepared proposed construction noise Performance Requirements for the Project. It has adopted the *evaluation objective* of the Scoping Directions and proposed a performance objective “*To manage surface construction noise to protect amenity*”.

NV6 proposes performance requirements for construction noise by reference to specified construction noise documents and working hours unless a variation is granted, and NV7 provides for construction noise amelioration at tunnel portal sites to reduce noise impacts.

Construction noise is presented as part of Chapter 12 in the CIS and in greater detail in Appendix J. The CIS deals with construction noise across the project rather than by precinct. The Executive Summary stated:

*The proposed East West Link – Eastern Section is located in a highly urbanised environment that already features high to very high levels of traffic and other noise. Construction of the project has potential to increase noise in the study area for the duration of construction activities ...*

*Surface-level construction activities with potential to generate noise and vibration impacts include demolition works, excavation works, piling and the construction of open roadways. Heavy vehicles and worker vehicles accessing the construction site could also increase traffic noise for the duration of construction activities, along with any local traffic diversions required.*

*Noise from surface construction would be managed in accordance with the construction environmental management plan, which would include relevant requirements from EPA Victoria publications 1254 (Noise Control Guidelines) and 480 (Environmental Guidelines for Major Construction Sites). (p.i)*

The summary statements of Precincts 1, 2, 3, 4 and 5 note that there could be construction noise impacts for extended periods which would be “... managed through the construction environmental management plan”. Precinct 4 has added that “This includes residences that would be temporarily exposed to higher levels of traffic noise as a result of the demolition and relocation of existing noise barriers”.

The overall assessment says:

*Construction of East West Link – Eastern Section tunnel may produce extended periods of noise and perceptible vibration at times. However, noise and vibration would be minimised in accordance with the relevant guidelines and standards.*

Appendix J provided a list of relevant documents at Table 1 and noted EPA Publications 1254 and 480, as well NSW construction noise guidelines. The NSW documents cited include:

- *Interim Construction Noise Guideline*, Department of Environment and Climate Change NSW, 2009; and
- *Construction Noise Strategy*, Transport Construction Authority NSW, 2011.

Possible construction noise mitigation measures include community consultation and negotiation, scheduling of works, the management of work practices including implementing construction noise control measures and engineering noise control, monitoring noise, and handling unavoidable activities outside of standard work times. Appendix J refers to AS 2436 – 2010 *Guide to Noise control on Construction, Maintenance and Demolition sites* as providing “... possible remedies and alternatives to reduce noise emission levels from typical construction equipment”.

Appendix J provided Performance Requirements for Project construction noise.



The key issues for construction noise include the:

- Adequacy of the construction noise performance requirements proposed in the CIS;
- Role of quantitative noise criteria in managing construction noise;
- Extent to which certain construction activities should be permitted at night time and the need for a separate night time noise criterion to protect against sleep disturbance;
- Significant measures that should be in a construction noise environment management plan;
- Mechanism by which the construction noise environment management plan should be developed including the lead role and the involvement of major stakeholders;
- Identification of the party to approve the construction noise environment management plan;
- Oversight, reporting, compliance assessment and enforcement roles to manage the construction noise environment management plan;

Construction of the Project is expected to take about five years, although the construction periods and duration may vary from one site to another. The construction is to occur in a highly urbanised environment. As well as noise generated by on-site construction activities, construction noise must consider vehicle movements bringing materials and equipment to site, vehicle movements removing materials, predominantly an anticipated 2-3 million cubic metres of spoil, and workforce travel.

The following sections present the major elements that are essential to the Committee's discussion of construction noise and its recommendations.

### **9.5.2 Submissions**

Submissions from EPA discussed the need for a construction noise management plan (as part of the CEMP) to be prepared and implemented, the proposed construction noise Performance Requirement referring only to EPA Publication 480 since that refers to major construction sites, and the deletion of the reference to Publication 1254 as that is intended for smaller projects.

Submissions from City of Melbourne raised concerns about noise from construction activities, including at the Urban Camp. The City of Yarra discussed the negative social and environmental impacts of construction noise, that construction noise will exceed allowable night time limits, and prolonged exposure to excessive construction noise is unacceptable;

The submissions from individuals and groups expressed concern about a range of issues on the impact of construction noise on liveability along the Project corridor.

### **9.5.3 Discussion**

The East West Link is a major construction project intended to be built in a sensitive highly urbanised inner city environment. Construction is anticipated to take about five years. The Committee acknowledges that there is likely to be considerable variation in construction duration along various parts of the Project. It anticipates that there will be an expectation of some construction works occurring outside of standard construction times. There will be significant movement of materials onto and off the site and transport of construction

employees. For these reasons the Committee believes that a comprehensive and rigorous program of controlling construction noise is required.

The Committee has been asked through its Terms of Reference to advise if the measures proposed in the CIS to manage noise, in this case of construction noise, are appropriate.

Managing construction noise will depend on inter alia, the construction schedule, construction techniques, and the final design for the Project. That can be done through a well informed and comprehensive construction noise management plan. The Committee envisages that being one part of a suite of plans embraced in a Construction Environment Management Plan (CEMP).

The Committee takes the position that an appropriate CEMP must include certain essential measures and that a mechanism must be in place to develop the plan and to ensure that it is implemented. The Committee's findings are based on those two issues.

The Committee notes that the CIS has not provided a tighter description of the control of construction noise for the Project given the scale of the works; the possible intrusiveness of many construction activities; and the closely settled inner city environment.

The Committee notes the submission from EPA that EPA Publication 1254 is not intended for large construction sites such as the Project, unlike publication 480. EPA advised that 480 is applicable and 1254 has information that may be useful. The Committee observes that the more recent 1254 is more informative than the dated 480 such as in providing suggested noise levels. Further, publication 1254 has suggested noise limits for construction periods greater than 18 months, which is not compatible with a small construction activity.

The Committee notes that EPA publication 1254 seems to be the guideline for assessing construction noise for other major projects. It believes that the reference to that publication should stand.

The proposed Performance Requirements include at NV7 a specific requirement about construction noise amelioration at tunnel portal construction sites.

The Committee anticipates that the contractor would expect to undertake the tunnelling work on a 24 hour day basis. It is not clear if that same expectation might extend to the surface works at either end of the tunnels to develop the portal approaches. These portal approaches would be extensive excavations to a sufficient depth to facilitate the tunnelling. They would be expected to be some 40 m or more in depth.

The Committee understands from the LMA that tender documents include a requirement that bids must include an acoustic structure at the portals to control noise. It understands that such structures have been used on major road tunnel construction works including in Brisbane. Mr Goddard informed the Committee about the successful use of such a structure in Melbourne for the tunnelling of a major sewer project.

The Committee understands that such acoustic sheds for this Project would be very large structures, similar to a multi storey building. They would be designed so that spoil excavated overnight would be stored for removal the next day and thereby avoiding night time heavy vehicle movements. The Committee supports such approaches to noise control.

The Committee does not support the proposed NV7 Performance Requirement. It is not clearly worded and does not add to the substance of the proposed Performance Requirement NV6. Subject to the implementation of a prohibition on night time surface construction works other than by specific exemption, and by the imposition of quantitative noise criteria including evening/weekend limits and inaudibility at night, there is no need for a separate provision. The Committee recommends that the proposed NV7 be deleted and captured in a more comprehensive NV6.

The Committee notes that no submission was received from the Melbourne Zoo on construction noise but a Performance Requirement was included in the CIS. The Committee accepts this requirement in Appendix E.

#### **9.5.4 Findings**

The Committee is not satisfied that the proposed construction noise performance requirements are sufficient to ensure an appropriate level of protection of amenity. Further, the Committee believes that the Performance Requirements must be enforceable and enforced.

The Committee considers that construction noise be minimised through the development of a Construction Noise Management Plan as part of the CEMP that meets the criteria of EPA publication 1254 *Noise Control Guidelines* and has regard to EPA Victoria publication 480 *Guidelines for Major Construction Sites*, Australian Standard AS 2436:2010 *Guide to Noise Control on Construction, Maintenance and Demolition Sites*.

The Committee considers it would be useful to make reference to the VicRoads Technical Guideline *Noise Guidelines – Construction and Maintenance Works* and NSW DECC *Interim Construction Noise Guidelines* and NSW *Transport Construction Noise Strategy* in providing detailed guidance to the more general guidance of the EPA Victoria publications. However reference to these latter documents will be left to the discretion of the EPA and they have not been included in the Performance Requirements.

Further, the Committee recommends that construction noise be monitored as specified in the CEMP to verify compliance with the requirements of the CEMP and take remedial action as soon as possible if non-compliance is shown.

A noise communications plan before commencement of construction should be developed and implemented as part of the Construction Noise Management Plan. The Plan should be maintained during the construction to inform Councils and the community, and provide for regular construction noise reports and on-line access to monitored noise levels,

## **9.6 Tunnel Ventilation Noise**

### **9.6.1 Introduction**

This part of the report advises on the appropriateness of the proposed ventilation noise performance objectives proposed by the LMA. It recommends noise performance requirements which it believes are appropriate for providing a satisfactory acoustic environment and which recognise the statutory role of EPA. The relevant proposed performance objectives are “*To minimise noise impacts of the tunnel ventilation system*”. The associated proposed Performance Requirements include:

*Design and implement the tunnel ventilation system to achieve compliance with State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1). Provide detailed design to the satisfaction of EPA Victoria prior to works commencing.*

*To minimise traffic noise impacts of East West Link – Eastern Section and Local Roads*

*Measure noise from the tunnel ventilation system on commencing road operation and monitor noise from the tunnel ventilation system to verify conformance with SEPP N-1 (EP Act). Take remedial action if noise level targets are not met.*

Ventilation noise of the proposed road tunnels is presented in Chapter 12 of the CIS and in Appendix J.

This noise matter has an applicable approval:

*The relevant applicable approval under the MTPF Act is a works approval under section 19B (road tunnel and ventilation system air and noise emissions) of the Environment Protection Act 1970.*

The Executive Summary of Appendix J states “*There is also the potential for noise to be generated from operation of the tunnel ventilation. Equipment associated with tunnel ventilation must comply with the State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1)*”. The overall assessment says “*The tunnel ventilation system would be designed to achieve compliance with SEPP N-1*”.

Appendix J provides a description of the application of SEPP N-1 including the specified day, evening and night time periods required by that policy. SEPP N-1 requires measurement of “*background noise levels*” which provide the basis for calculating “*effective noise limits*” which are used with the planning zones to determine the noise limits. It is against these that the measured or predicted noise levels are assessed for compliance.

Indicative background noise levels were measured at six locations. One site was near the possible eastern ventilation stack, three near the proposed western stack and two in the vicinity of a possible mid-point ventilation air intake if that is needed. All measurements were taken at night on the basis of that being the most critical time for achieving compliance. i.e. if night time compliance levels are achieved then it is probable that compliance is also met for the day and evening limits. These indicative background noise levels ranged from 42 dB  $L_{A90}$  to 47 dB  $L_{A90}$ . Marshall Day noted in Appendix J that these limits were similar to those determined for other projects in inner urban areas of Melbourne. The Committee notes that these six locations are not the same sites used for the short and long term measurements of existing traffic noise, and a different noise metric is used.

Those background noise levels are then used with the planning zone(s), taken from the planning scheme(s), to determine the noise limits. Those noise limits are between 45 dB  $L_{Aeff}$  and 50 dB  $L_{Aeff}$ . For the six locations at which background noise was measured the noise differences between the noise limits and the background noise levels were all 3 dB. Those noise limits became the Performance Requirements for the ventilation system.

### 9.6.2 Key Issues

The key issues for noise associated with the tunnel ventilation noise include:

- The adequacy, or otherwise, of the ventilation system noise performance requirements proposed in the CIS;
- The statutory role of the EPA in managing these noise sources; and
- Limiting combined noise from traffic and the ventilation outlets of the tunnels when these ventilation outlets are placed near the portals.

Of necessity, long road tunnels carrying high volumes of traffic, such as the proposed Project, require forced ventilation to maintain satisfactory air quality in the tunnels. The two three lane tunnels are intended to be essentially parallel. Each tunnel is intended to be about 4.4 kilometres long. In each tunnel, the longitudinal ventilation air movement is proposed to be in the same direction as the movement of vehicles. That takes advantage of the 'piston effect' of the vehicle movement contributing to the ventilation air movement.

The likely ventilation system is discussed in Chapter 10 of this report but several elements of the system are likely to generate noise:

- Mid tunnel air intakes;
- Jet fans within the tunnel;
- High volume discharge fans at vent stacks; and
- Ancillary plant and equipment.

The ventilation system of a road tunnel is a *Scheduled Premise* under the EP Act and is hence required to be subject to the conditions of a Works Approval and subsequently a License to operate. The noise from the tunnels ventilation system is controlled by SEPP N-1 which is subordinate legislation under the EP Act.

### 9.6.3 Submissions and Evidence

The submission from EPA discussed the need for demonstration of compliance with SEPP N-1 best practice requirements and noise limits following detailed design of the system. Council submissions discussed noise from ventilation structures, while other submissions spoke broadly about noise from the operation of the Project.

### 9.6.4 Discussion

The Committee acknowledges that managing the noise due to the ventilation system of the proposed tunnels is a statutory responsibility of the EPA under the EP Act. The Committee accepts the submission of EPA that SEPP N-1 is a long established policy that has been used successfully for many years in controlling noise from various sources.

Specifically, it has been applied to control noise from the ventilation stacks at both CityLink and EastLink. In both those cases, and like the Reference Project for this Project, the ventilation stacks are near the tunnel portal exits. The CityLink Burnley tunnel has a mid-point air inlet, as has been suggested might be the case for the Project tunnels. The Committee was advised that the application of SEPP N-1 to these noise sources has been successful, and it was not made aware of any complaints about noise from those.

The focus of the application of SEPP N-1 to road tunnel ventilation systems has been, and is, on the ventilation stacks. These are a possible source of external noise. Both Mr Fearnside

and Mr Robinson referred to these stacks being subject to SEPP N-1 as applicable legislation for which approval would be required. Both said that any mid-tunnel air intake would be subject to SEPP N-1. The Committee notes that the background noise measurement sites were selected with regard to the eastern ventilation stack, the possible mid-tunnel air inlet, and the western ventilation stack.

### **9.6.5 Findings**

The Committee finds that noise from the ventilation stacks of the tunnels and any mid tunnel air inlet is appropriately dealt with as a condition of the EPA license for operation of the stacks. Given the possible co-location of ventilation stacks and surface traffic on the Project entering and leaving the tunnels both generating noise the Committee finds that the combined noise from these sources should not exceed those limits recommended for traffic noise alone.

The Committee considers that the Performance Requirements proposed are generally acceptable.

## **9.7 Vibration Impacts**

### **9.7.1 Introduction**

This chapter of the report considers the appropriateness of the proposed vibration and reverberated noise performance objectives proposed by the LMA. It recommends Performance Requirements which it believes are appropriate for protecting assets and amenity and that are achievable.

The LMA has prepared vibration Performance Requirements for the construction of the Project in Chapter 17 of the CIS flowing from the evaluation objectives and performance objectives. The exhibited Performance Requirements include:

- NV8 for continuous vibration from construction, such as from a tunnel boring machine, to protect amenity;
- NV9 for impulsive vibration from construction, such as from blasting, to protect amenity;
- NV10 to monitor vibration and noise and take remedial action as needed;
- NV11 to protect utility assets from vibration;
- NV12 to engage the community to protect amenity from construction vibration; and
- NV13 to protect the Melbourne Zoo from vibration.

### **9.7.2 Key Issues**

The key issues for consideration of vibration impacts include:

- Adequacy of the continuous vibration criteria proposed by LMA to protect assets of the built environment from damage due to construction of the Project;
- Adequacy of the continuous vibration and regenerated noise criteria proposed by LMA for construction to protect human amenity and comfort;
- Adequacy of the impulsive vibration criteria proposed by LMA to protect assets of the built environment from damage due to construction;
- Adequacy of the impulsive vibration criteria proposed by LMA for construction to protect human amenity and comfort;

- Appropriateness of measures proposed to protect the Melbourne Zoo from being affected by construction vibration and regenerated noise;
- Appropriateness of the proposal to monitor vibration and regenerated noise during the construction phase and to respond to any non-compliance and complaints; and
- Design and implementation of an effective vibration and regenerated noise communications plan.

**(i) The Comprehensive Impact Statement**

Vibration is presented as part of Chapter 12 *Noise and vibration* of the CIS and in greater detail at:

- Appendix J East West Link – Eastern Section, Surface Noise and Vibration Assessment (Marshall Day Acoustics, September 2013); and
- Appendix K East West Link – Eastern Section, Tunnel Vibration and Regenerated Noise Assessment (Heilig and Partners Pty Ltd, September 2013);

Appendix J presents material on criteria for construction vibration and regenerated noise. It advises that criteria may vary according to the duration of the exposure, whether the vibration is continuous or impulsive, and what the criteria are intended to protect.

Appendix J notes that the criteria for construction vibration advised in Appendix K is based on Australian Standard AS2670.2-1990 *Evaluation of human exposure to whole body vibration – Part 2 Continuous and shock induced vibration in buildings (1-80 Hz)* (AS2570.2) which is commonly used in Australia to assess construction vibration and which is based on the protection of human comfort. It notes that Appendix K acknowledges that it would be necessary at times to exceed those criteria, notably if blasting is used, but the risk of building damage must be minimised. In that case, criteria for minimising building damage are provided in Australian Standard AS2187.2-2006 *Explosives – Storage and use – Use of explosives* (AS2187.2). It comments that “*Human perception of vibration occurs at levels that are much lower than the levels at which building damage occurs. Thus, criteria set for human comfort would be well below the levels which present any significant risk of building damage*”.

Appendix K noted that the expected construction methods would involve a number of methods that are capable of producing levels of vibration and regenerated noise that could be elevated compared to the existing environment. It proposes performance criteria for continuous vibration encompassing ground vibration and regenerated noise, and for impulsive vibration (blasting) covering ground vibration and air peak overpressure (airblast). It considered various standards in doing so.

The CIS presented assessments of the impact from possible construction methods to demonstrate the likely extent of the areas affected by vibration and regenerated noise based around those recommended performance criteria. In assessing the impacts Appendix K said in the Executive Summary:

*Vibration data have been collected from other sites, both within Australia and internationally. These data, together with other published international literature and additional analyses, have been used to determine the level of vibration and regenerated noise as function of distance from the mechanical equipment. Other*

*vibration data collected in rock types similar to those identified along the alignment have also been analysed to help quantify the decrease in vibration levels as a function of distance from an explosive source.*

The recommended continuous vibration Performance Requirements are tabulated in NV8 of the Performance Requirements. These criteria have been calculated using AS 2670.2. They are presented for four classes of occupied buildings to protect human comfort and sensitive equipment, and are discriminated by a 16 h day and an 8 h night period. The vibration levels are expressed in velocity units of mm/s.

Recommendations are made for impulsive vibration performance requirements and accompanying performance requirements for peak overpressure levels, and are presented in NV9. These have been calculated using AS 2187.2 and the German standard DIN 4150.2 and are presented for three site categories based on personal amenity and protecting damage to structures. They are all qualified by agreement with the site occupier that a higher limit may be acceptable, dependency on an asset condition survey, or on a limit that respects vibration sensitive equipment. The vibration levels are expressed in velocity units of mm/s and the air overpressure limits in dBL, a linear weighting of the measured pulse i.e. with no frequency weighting.

The CIS notes that for infrastructure such as surface and underground assets acceptable levels should be set in consultation with the asset owner to prevent damage to those. Appendix K refers to the manner in which vibration from construction may be perceptible at sensitive receptors, that is, ground borne vibration, regenerated noise, and air borne overpressure from blasting.

The CIS provided information on approximate vibration levels vs. the degree of perception derived from the German standard DIN4150.2 whilst noting that there is a wide variation in personal tolerance to vibration.

- 0.10 mm/s                      Not felt
- 0.15 mm/s                      Threshold of perception
- 0.35 mm/s                      Barely noticeable
- 1.0 mm/s                        Noticeable
- 2.2 mm/s                        Easily noticeable
- 6 mm/s                          Strongly noticeable
- 14 mm/s                         Very strongly noticeable

It comments on regenerated noise and informs that this vibration induced internal noise is typically audible at very low vibration levels and is manifested as a low rumble. The report said that within normal structures, regenerated noise starts to become noticeable at about 35 dBA; below that it can be masked by other noise sources. It noted *“However, in very quiet areas, or those where people are particularly sensitive, the noise may be noticeable at much lower levels”*. It observed that regenerated noise varies to a greater extent than vibration within a property and varies according to the construction of and furnishings in a building.

The vibration impact assessment presented in the CIS is provided for a number of possible construction methods:

- Driving the main tunnels using a tunnel boring machine;



- Excavating ramps to and from the main tunnels other than at the main portals using a road header;
- Constructing cuttings, cut and cover sections and main tunnel portal access excavations using hydraulic hammers or controlled drilling and blasting; and
- Developing cross passages (safety passages interlinking the tunnels at about 120 m intervals) using a road header, hydraulic hammer or drilling and blasting.

The results of the vibration and regenerated noise assessment for various construction techniques are presented as figures in Appendices A to I of Appendix K.

For driving the main tunnels using a tunnel boring machine, the CIS discussed the likely vibration levels and the extent of surface vibration, and identified those areas where vibration and regenerated noise is most likely to be perceptible. It stated:

*Where elevated vibration levels are predicted to occur, higher regenerated noise levels are also expected. The modelling indicates regenerated noise levels are expected to exceed values of 45dBA for properties along Alexandra Parade and Princes Street over a tunnelling length of approximately 2000 metres. Noise levels for the section of tunnelling along Princes Street, where the east-bound tunnel is directly beneath properties, is modelled to exceed 50dBA at those properties above the alignment. ....*

*The Melbourne Zoo is more than 150 metres from the nearest construction activity and vibration levels are fully expected to comply with the performance criteria for building related damage and personal amenity specified in this report. It may however be necessary to impose a lower permissible vibration limit so that the wellbeing of the animals is appropriately cared for. The permissible vibration level will be dependent upon the type of animal and should be considered by the contractor when the equipment type has been specified. The appropriate vibration level should be based upon data presented in the international literature.*

The use of a road header for excavation is discussed with reference to the construction of the ramps between Elliott Avenue and the main tunnels proposed in the Reference Project. The assessment indicated that for both ramps the predicted maximum levels of vibration and regenerated noise are about 0.25 mm/s and 40 dBA respectively for the majority of the lengths of the ramps. Toward the western ends of the ramps there would be some increase as they approach the surface. Inspection of the figures indicated that for a small area near the driven portals of these ramps vibration might exceed 0.5 mm/s and regenerated noise 45 dBA. For those ramps the assessment reports that the location is distant from sensitive receptors and that compliance with the performance requirements is expected.

The figures for the construction of the Elliott Avenue ramps show estimated vibration and regenerated noise contours from using hydraulic hammering and from drilling and blasting techniques. These show that the vibration and regenerated noise impacts, both in intensity and extent, would be markedly greater than from the use of a road header. The vibration resulting from blasting is shown to be significantly greater than that generated from the other excavation techniques. The report noted that the vibration from the use of a road header and hydraulic hammer is continuous and that from blasting is impulsive.

Appendix K of the CIS presented the analysis of vibration and regenerated noise impacts from the proposed eastern portal. This large excavation proposed for the Reference Project between the present Alexandra Parade southern carriageway and the re-aligned northern carriageway (the temporary road) is required for the construction of the driven tunnels and the cutting for the cut and cover tunnels at the east to connect to the Eastern Freeway and Hoddle Street. Excavation would be expected to be largely in basalt.

The use of hydraulic hammering for this excavation is predicted to cause perceptible levels of vibration at properties to both the north and south of Alexandra Parade. The predicted levels are reported as being outside the proposed criteria, particularly on the northern side, but *“the predicted values are below those considered to cause superficial damage”*. The report advised that drilling and blasting might need to be considered, but with minimal explosive charges vibration would be expected to exceed recommended levels. It said *“it would be necessary to seek acceptance of vibration levels higher than those specified in the criteria”*. The assessment stated:

*Under the proposed performance requirements for blasting activities, permissible explosive quantities that could be used in the eastern portal area are not expected to be economic or deliver the require benefits of blasting.*

After presenting possible amelioration measures, it noted:

*In areas where the above amelioration measures are inappropriate or cannot reduce vibration levels to acceptable values, other measures such as temporary relocation, vibration isolation devices or noise amelioration measures may be required.*

The CIS discussed hydraulic hammer construction for cross passages. It observed that it would generate higher levels of vibration and regenerated noise than that from tunnel boring machine activities. In particular, it identified the area along Princes Street between Nicholson Street and the Melbourne General Cemetery as likely to experience elevated vibration levels and for which it advised that mitigation measures would need to be considered. On regenerated noise from hydraulic hammer construction it stated:

*Regenerated noise levels are modelled to exceed 45dBA at properties on the northern side of Alexandra Parade for each of the cross passages with levels in excess of 50dBA, possibly 55dBA, for the properties above the alignment east of the Melbourne General Cemetery to Princes Street. A large number of properties in this area would be exposed to regenerated noise levels exceeding 35dBA. It is estimated the extent of the influence zone would extend around 60 metres from the tunnel alignment. Methods of reducing regenerated noise levels to acceptable values are limited and compliance is often only possible by changes to the method of excavation or limiting the hours of operation to outside the more restrictive evening hours. Limiting regenerated noise levels within the building by adjustments to the dwelling are not expected to be feasible.*

Appendix K analysed the vibration impacts of using drill and blast construction for cross passage construction. The assessment used a fixed explosive weight of one kilogram (presumably per delay) which is said to be at the lower end of explosive weight for economically justifiable blasting. It indicated some marginal non-compliance with the 10 mm/s criterion towards the eastern end of the tunnel to the north of Alexandra Parade.

Non-compliance is expected between Nicholson Street and the Melbourne General Cemetery and hence blasting may not be feasible in that location.

Under the Melbourne General Cemetery, blasting would exceed the lower bound criterion for susceptible monuments of 3 mm/s over an area of impact extending for about 100 metres from each cross passage. Directly above the passages vibration levels of 10 mm/s to 15 mm/s might be anticipated. The assessment stated:

*It may be feasible to adopt a higher vibration limit for these monuments on the basis of their condition and susceptibility to vibration impacts. Each monument should be **assessed separately** (Committee emphasis) and an appropriate vibration limit justified and detailed in the vibration management plan.*

Technical Appendix K provides figures showing expected contours for vibration and regenerated noise from hydraulic hammer and drilling and blasting at the proposed western portal.

## **(ii) Victorian criteria**

The Committee is aware of the existence of noise and vibration guidelines for construction sites prepared by the City of Melbourne and of State Government guidelines on vibration limits for blasting in quarries.

The Melbourne City Council *Noise and Vibration Management Guidelines* for demolition, excavation and construction require a:

- Vibration limit of 10 mm/s measured at the site boundary;
- Vibration limit of 2 mm/s measured on a foundation, floor, wall or ceiling surface of neighbouring specified sensitive sites; and
- Vibration limit of 5 mm/s measured on a foundation, floor, wall or ceiling surface of any other adjoining building.

The guideline document *Ground Vibration and Airblast Limits for Blasting in Mines and Quarries* provided by the Victorian Department of State Development, Business and Innovation is reproduced from the 2001 document prepared by the then Department of Natural Resources and Environment, which in turn drew on criteria recommended in a document on blasting vibration management prepared by the then Australian and New Zealand Environment and Conservation Council.

That guideline recommended the following limits for vibration and air overpressure limits at sensitive receptors:

- Ground vibration < or = 5 mm/s for 95% of blasts in a rolling 12 month period  
< or = 10 mm/s for all blasts
- Airblast < or = 115 dBL for 95% of blasts in a rolling 12 month period  
< or = 120 dBL for all blasts

and that blasting should be restricted to between 9 am and 5 pm Monday to Saturday.

### 9.7.3 Submissions and Evidence

Mr Fearnside gave evidence on surface noise and vibration assessment for LMA. On vibration he deferred to the assessment and evidence of Dr Heilig of Heilig and Partners. Dr Heilig provided a presentation to the Committee (Document 82) that emphasised and explained the major points of the CIS vibration and regenerated noise assessment. Dr Heilig advised that he had undertaken further work on possible effects of vibration on the wellbeing of animals at the Melbourne Zoo, and said:

*Preliminary modelling indicates that given the position of the construction activities relative to the Melbourne Zoo, particularly the southern corner, the vibration generated by the construction will be very minimal and is expected to have negligible effect on the welfare or behavioural patterns of animals housed in the pavilions when compared to other sources of vibration to which they may have been exposed, such as traffic and building activities within the Melbourne Zoo. The level of vibration from the tunnelling activities is predicted to be minimal and, in all likelihood, immeasurable at the southern boundary of the Melbourne Zoo. It is, however, my recommendation that discussion with the staff at the Melbourne Zoo continues to develop a specific program regarding the monitoring and definition of permissible levels of vibration.*

Mr Brown gave evidence on surface noise and vibration for the City of Moonee Valley. He suggested that consideration be given to the use of the vibration dose value to quantify human comfort vibration levels in buildings, particularly where vibration is not continuous, and recommended that reference be made to additional vibration standards.

Mr Goddard gave evidence on surface noise and vibration for the City of Yarra. Mr Goddard said that the predicted vibration from tunnel boring and hydraulic hammering are likely to be acceptable during day time periods, but not at night. He said that a range of vibration management responses would be required to minimise adverse impacts. Further, Mr Goddard advocated that Yarra be involved to ensure that measures to limit vibration are adhered to.

Submissions from City of Melbourne raised concerns about loss of amenity due to vibration, vibration effects at the Urban Camp, and integrity of heritage structures. The City of Yarra discussed the integrity of heritage structures, vibration exceedances in the evening, relocation is not an acceptable mitigation response, prolonged exposure to vibration is unacceptable, and remedial responses to non-compliance should be implemented as soon as possible. Moreland City Council expressed concern about vibration impact on animals at the Melbourne Zoo.

Submissions were received from Melbourne Water about the integrity of sewers, particularly the greater than 100 year old brick North Yarra Main Sewer. The APA Group submitted about the integrity of lead jointed cast iron gas mains. SP AusNet submitted about tripping of critical electrical infrastructure at West Melbourne Terminal Station and damage to underground 220kV electrical transmission line along Hoddle Street.

The submission from the National Trust expressed about historic sites, including the Shot Tower, former college church and Melbourne General Cemetery memorials. The Clifton Hill

Primary School noted its concerns about vibration impacts on its school. It sought an assurance that vibration will not affect students and staff questioned whether relocation may be necessary. The Urban Camp inquired whether there should be a condition survey.

Submissions from various community groups and individuals raised issues about:

- Road use and pile driving vibration;
- Vibration criteria;
- Aggravation of ground movement;
- Structural and property damage;
- Animals at the Melbourne Zoo;
- Lack of vibration assessment for western section of the Project;
- Effect of vibration on heritage assets and the shot tower;
- Need for condition surveys;
- Health of patients for health service practices;
- Understatement of vibration impacts;
- Inadequate mitigation; and
- Impacts on lifestyle and amenity.

#### **9.7.4 Discussion**

The Committee accepts that some vibration from construction of the Project is inevitable. The issue that it must consider is that of appropriate maximum vibration levels that protect the integrity of structures in the built environment that do not unreasonably impact on the amenity and comfort of people.

The Committee understands that vibration is solely linked to the construction of the Project. Negligible vibration would be linked to the operation of the road and hence there is no need to consider operational vibration. No evidence suggested otherwise.

The Committee perceives an apparent gap in the CIS on vibration assessment. Technical Appendix J largely defers to Technical Appendix K on vibration assessment. However, Technical Appendix K discusses vibration of the construction of the proposed tunnels and the portals. It does not deal with vibration that might be associated with other surface works. Technical Appendix J does not provide a comprehensive assessment of surface works that might cause vibration beyond adherence to particular standards. The Committee would have been helped by evidence on vibration that might result from constructing piers for elevated structures including from pile driving that it anticipates might be contemplated for the unconsolidated soils near the western end.

The Committee recognises that a number of aspects of construction vibration need to be considered including:

- The effect on assets of continuous vibration, such as might be generated from a tunnel boring machine, road header or hydraulic hammer constructing a driven tunnel. These assets might include surface structures and buildings of all types, council assets, and underground utility assets. Those buildings would encompass residential buildings, heritage structures and cemetery monuments. The council assets might include kerbs, footpaths, surface drains and similar. Underground assets could include gas pipelines, electricity lines, sewers, water pipes and similar

owned by utility companies and government organisations. Those assets might also include vibration sensitive equipment such as might be in laboratories and hospitals;

- The effect of continuous vibration on human amenity and comfort. This would apply largely to residents. Evidence suggests that people can be aware of vibration at much lower levels than that required to cause damage to structures;
- The effect of impulsive vibration, such as might be caused by blasting, on assets both above and under the ground;
- The effect of impulsive vibration on the amenity and comfort of people;
- The effect of regenerated noise on people in occupied buildings; and
- The effects of vibration and regenerated noise on the wellbeing of animals at the Melbourne Zoo.

The Committee considers that the issue of exposure of sensitive receptors to sequential periods of vibration and regenerated noise should be given consideration. It does not believe that this has been adequately considered in the CIS. The Committee understands that some receptors may be exposed to a single episode of vibration and regenerated noise, albeit over some time, such as from the nearby passage of a tunnel boring machine or the day time use of hydraulic hammering or a road header for some facet of surface or underground construction. But it envisages the possibility in some cases of sequential vibration and regenerated noise exposures from different aspects of the construction work. For instance, a sensitive receptor towards the proposed eastern end of the tunnels might experience vibration and regenerated noise from the construction of the portal access by hydraulic hammering and perhaps blasting, further vibration and regenerated noise some time later from a tunnel boring machine and perhaps a second machine, and possibly later again more vibration and regenerated noise from a cross passage construction using hydraulic hammering and perhaps blasting.

The Committee envisages some possibility of combined vibration and regenerated noise from adjoining vibration inducing activities. A s57(4) request to LMA about sequential noise impacts was interpreted as a request for information on combined impacts. The response advised that a possible combined impact could be from two adjacent tunnel boring machines and the combined impact would have to meet the performance criteria.

All vibration and regenerated noise episodes, whether they be single episodes or sequential or combined impacts would be required to comply with vibration criteria or any agreed departure from those. However, the durations and times of perceptible impacts may differ significantly. The Committee believes this possibility of sequential impacts, and to a lesser extent combined impacts, exemplifies the need for a comprehensive and effective community engagement and information program.

The community and councils will need to be informed about the likely impact of vibration and regenerated noise, when it might occur, whether it will be continuous, limited to normal working hours or otherwise, whether it will be impulsive (e.g. blasting or pile driving), whether there might be sequential episodes, and how to make contact for information or complaint. The Committee endorses the LMA intention of a comprehensive network for the monitoring of vibration. It believes that the data should be provided on line for access by other parties in addition to regular reports.

The Committee is satisfied that vibration criteria should be expressed as proposed in the velocity domain. It notes the evidence of Mr Brown that a vibration dose value be adopted. Dr Heilig acknowledged some merit in that but observed that among other things the proposed approach facilitates a more rapid identification of non-compliance and hence mitigation. The Committee believes that a prompt recognition of non-compliance, or an approach to any vibration criterion, and mitigation as soon as possible is desirable. It accepts the evidence of Dr Heilig that the proposed approach be adopted.

Melbourne Zoo is near to some of the construction activities, notably the driven tunnels, the Elliott Avenue ramps and the surface works proposed for Elliott Avenue itself, and to the western portal. The Committee is conscious that that western portal is the area proposed for major construction works including the possible launch site for probable tunnel boring machines. The Committee did not hear from the Melbourne Zoo but notes that there is a Performance Requirement relating to the development of management measures with the Melbourne Zoo and City of Melbourne for vibration, construction noise and working hours; this is appropriate.

#### **9.7.5 Findings**

The Committee finds that vibration and regenerated noise is an unavoidable consequence of construction of the Project. It finds that measures must be implemented to limit vibration and regenerated noise to protect human amenity and wellbeing and to avoid damage to assets, both surface structures and underground infrastructure. It is satisfied that that is achievable given close attention to project design and planning, selection of construction equipment and operational techniques, construction management, and community engagement. That will require detailed preparation of a construction environmental management plan for vibration, implementation of that, and responsive revision in the event of justified complaints or asset damage.

The Committee is satisfied that vibration impacts relate solely to construction and are not a consequence of operation of the Project.

The Committee has made a number of recommended changes and refinements to the Performance Requirements based on the consideration of vibration in this Chapter. These are shown in Appendix E and in summary relate to:

- Revisions to further refine requirements around sensitive sites;
- Improved clarity around property condition assessments; and
- A range of other changes related to implementation and monitoring.

## 10 Air Emissions and Air Quality

### 10.1 Introduction

#### 10.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(d) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to air emission:

*Whether the noise, vibration, **air emission** and light spill impacts of the project will be appropriately managed by the proposed measures. (Committee emphasis)*

The applicable approval relevant for the Project with respect to air quality is the Works Approval as required under the EP Act.

#### 10.1.2 Conclusion of the CIS

Chapter 11 of the CIS, 'Air quality' concludes that dust generated during construction would need to be appropriately managed. During the Project's operation, tunnel ventilation and emissions would need to comply with SEPP (Air Quality Management). In-tunnel concentrations would need to comply with World Road Association (PIARC) guidelines.

In relation to ventilation systems and emissions the CIS concluded:

*Fans would be installed in each tunnel to manage in-tunnel air flow. The ventilation structures would house the fans to exhaust tunnel air to the exterior air shed. The ventilation system would manage air quality in the tunnel and the ventilation structures.*

*Emissions from the tunnel ventilation structures have been modelled (30 metres for the eastern vent and 20 metres for the western vent) and shown to comply with EPA Victoria air quality criteria. Once the tunnel is designed, compliance with these criteria would be demonstrated through additional air quality modelling similar to this assessment and the exact heights may change slightly.*

The CIS acknowledged that further air quality assessment will be required during the detailed design phase to confirm that the contractor's design, including the location of vent structures, can comply with PIARC and SEPP (AQM) requirements.

In respect of localised emission assessment, the CIS noted:

*Five areas along the project alignment were considered further due to the high localised emissions per area identified in the detailed traffic modelling. At each area, levels of NO<sub>2</sub> comfortably fall within SEPP (AQM) criteria of 263 µg/m<sup>3</sup> at all sensitive receptor locations (that is, everywhere beyond the roadside) even after consideration of background levels.*

The CIS concluded that across the region, the predicted motor vehicle emissions and associated air quality impacts due to the operation of the project were found to be negligible compared to no Project operating. It stated that a minor decrease in key traffic emission constituents may be experienced due to easing congestion and free flowing traffic.



### 10.1.3 Objectives and Performance Requirements

The CIS evaluation objective (set by the Scoping Directions) for Air Quality and Greenhouse Gas is:

*To minimise the adverse impacts from noise, vibration, air emissions and light spill.*

There are four corresponding Air Quality Performance Objectives in the CIS and one Greenhouse Gas Performance Objective:

- *To manage tunnel emissions to protect the beneficial uses of the air environment;*
- *To ensure in-tunnel air quality is safe for motorists and others using the tunnel;*
- *To manage tunnel emissions to protect the beneficial uses of the air environment;*
- *To protect beneficial uses of the air environment for the surface sections of East West Link – Eastern Section; and*
- *To protect the beneficial uses of the air environment in relation to greenhouse gas emissions.*

An extensive list of Performance Requirements are specified in Chapter 11 of the CIS (Table 11-10) to meet these Performance Objectives. The CIS stated that it “*would be up to the contractor to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”.

### 10.1.4 Air Emission Issues

The Committee heard air quality evidence from the following experts:

- Mr Barry Cook of GHD for the LMA;
- Dr Paul Torre of the EPA for the EPA; and
- Professor Louis Irving of Royal Melbourne Hospital for Ms Clare Walter

At the request of the Committee, all experts met to discuss the relevant issues and determine points of agreement and dispute. Two meetings on air quality were held in this regard. The conclave was held in two parts as not all experts were available on the same days. Mr Cook and Dr Torre met on 24 February 2014, and Mr Cook and Professor Irving met on 27 February 2014.

At the conclusion of the conclave and further discussions an ‘*Agreed Statement*’ (Document 29), was provided to the Committee.

The following topics were discussed and generally **agreed** by the experts at the conclave.

- The need to control development close to the portals and ventilations structures by the use of planning controls implemented by the relevant Councils;
- The Alphington and Footscray air monitoring data was appropriate for representative background data for the Project;
- SEPP (AQM) compliance could be demonstrated even with a higher percentage of heavy vehicles than that used in the CIS;

- The in-tunnel CO standards adopted for CityLink and Eastlink should be adopted for the Project;
- The near road emissions would need to be remodelled if the final design differed significantly from the Reference Design;
- No portal emissions should be allowed;
- Health effects can occur at levels below the current Australian standards and it is unclear whether there is a lower limit for these adverse effects;
- PM<sub>2.5</sub> has a greater effect on human health and constitutes the majority of particles emitted from motor vehicles; and
- That an air monitoring program be implemented for at least one year before and one year after commencement of the operation of the tunnel to measure the impact of the Project.

The following topics were discussed and generally **not agreed** by the experts at the conclave.

- Mr Cook and Dr Torre agreed that the health impacts of air pollution arising from the Project are accounted for by the levels set in SEPP (AQM). Professor Irving disagreed with this;
- Professor Irving argued that pollution control equipment is commonly used in international road tunnels and would improve the in-tunnel air quality and reduce emissions to the external air. Mr Cook disagreed with this;
- Professor Irving raised concerns that the proposed in-tunnel and ambient air monitoring programs were inadequate and should be ongoing.

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to air quality, the Committee has grouped its assessment under the following headings:

- General Issues;
- Tunnel Emissions;
- In Tunnel Air Quality;
- Surface Roads and Near Road Air Quality;
- Part B;
- Greenhouse Gas; and
- Public Health.

#### **10.1.5 Legislative Framework for Air Quality Management in Victoria**

Air quality in Victoria is managed by two State Environment Protection Policies (SEPP):

- SEPP (Ambient Air Quality) [SEPP(AAQ)]; and
- SEPP (Air Quality Management) [SEPP(AQM)]

The SEPP (AAQ) contains the air quality standards and monitoring and reporting protocols contained in the National Environment Protection Measure (Ambient Air Quality) [AAQ NEPM]. These standards are used to assess general air quality across a region arising from emissions from a wide range of sources.

The SEPP (AQM) establishes the management framework for the control of emission to the air environment to ensure that the ambient air quality standards contained in the SEPP (AAQ) are met and that continuous improvement in Victoria's air quality is achieved.

## (i) SEPP (AQM)

### Policy Aims and Intent

The aims of the policy are to:

- Ensure that the ambient air quality standards in SEPP (AAQ) (which reflect the AAQ NEPM standards) are met;
- Drive continuous improvement in air quality and achieve the cleanest air possible having regard to the social and economic development of Victoria; and
- Support Victorian and National Measures to address the greenhouse effect and depletion of the ozone layer.

The policy is guided by the principles of environment protection as set out in the *Environment Protection Act 1970*, including consideration of the precautionary principle and the wastes hierarchy with avoidance being the main aim.

The policy intent is that emissions to the air environment will be managed so that the beneficial uses of the air environment are protected, Victoria's air quality goals and objectives (standards) are met, air quality continues to improve and the cleanest air possible is achieved, having regard to the social and economic development of Victoria.

Class 3 indicators (such as benzene) will be managed at source to achieve the best practicable outcome irrespective of their ambient levels due to the extremely hazardous nature of these pollutants.

Proposals for new or substantially modified industrial sources (such as the ventilation stack) will be designed to minimise their operational impact. The ventilation system for the EWL tunnels is subject to Works Approval and Licence by EPA (Victoria).

### Definitions of Air Quality

There are four types of air quality described in the SEPP (AQM):

- Regional Air Quality – this is the air quality that exists within a region, for example the whole of Melbourne which is described in the SEPP as the Port Phillip Air Quality Control Region. The CIS refers to regional air quality meaning air quality across the Melbourne Metropolitan area.
- Neighbourhood air quality – is the air quality experienced across a neighbourhood. This could be a suburb or group of suburbs that are affected by a major source or sources of pollution.
- Local air quality – this is what is experienced by people close to a source. In the CIS local air quality is referred to as the air quality experienced due to emissions from the surface roads as part of the Project or the area around the ventilation stacks impacted by emissions from stacks.
- Near road air quality – the air quality experienced adjacent to a road, usually up to 100m from the road. In the CIS this refers to the air quality experienced due to changes in traffic on surface roads or the new elevated viaducts.

### Air Quality Indicators

The SEPP (AQM) classifies air pollutants into three classes based on their toxicity and/or odorous properties. For transport related pollutants the key pollutants are:

- PM<sub>10</sub>, NO<sub>2</sub> and CO – these are classified as Class 1 indicators. They are ubiquitous in the environment and are a subgroup of pollutants used to describe regional air quality as they arise from a wide range of sources. These pollutants are covered by the AAQ NEPM and have ambient air quality standards set to describe general air quality within a region.
- PM<sub>2.5</sub> – Class 2 indicator. Also ubiquitous in the environment and arises from many sources. The AAQ NEPM contains ambient air quality standards for PM<sub>2.5</sub>.
- Formaldehyde – Class 2 indicator.
- Benzene, polycyclic aromatic hydrocarbons (PAHs), 1,3-butadiene – Class 3 indicators. These substances are all carcinogenic. Class 3 indicators are the most toxic pollutants covered under the SEPP.

Class 1 and 2 indicators must be controlled by the application of best practice which goes beyond the application of technology controls.

Class 3 indicators require control to the maximum extent achievable (MEA) which goes beyond best practice. The aim is to minimise these emissions due to their toxicity.

These levels of control apply to all generators of emissions in Victoria not just industrial point sources.

#### **Types of Air Quality Standards**

- Ambient Air Quality Standards – set out in the SEPP (AAQ) and AAQ NEPM. These describe regional air quality across an airshed and do not apply to individual sources.
- Design criteria – these apply to individual point sources (such as the ventilation stacks) in the design stage of a facility. They are more stringent than the ambient air quality standards so that multiple sources can be managed and not exceed ambient air quality standards.
- Intervention levels – these are set at 10% higher than the ambient standards and only apply at hotspots – where multiple sources lead to high levels of pollutants. These are set at the upper bound of health risk and are ‘not to be exceeded’ numbers. If they are exceeded then EPA, other responsible bodies (such as VicRoads) or local Government need to take action to reduce air pollution levels in that area.

For the Project, the design criteria apply to the emissions from the ventilation stacks. The intervention levels apply to the near road air quality but would not apply to sensitive areas, like the Clifton Hill Primary School, where the ambient air quality standards would apply.

The design criteria and intervention levels apply wherever that maximum concentrations are predicted to occur. For buildings such as the Flemington Housing Estate, these criteria would apply at the elevated receptors not at ground level if the maximum concentrations occur at the higher levels.

#### **Demonstrating Compliance**

In demonstrating compliance with the SEPP (AQM) the following process is required:

- Identify pollutants of concern;
- Control of emissions by application of best practice or MEA;
- Model residual emissions (those left after appropriate level of control as been applied) to see if they meet relevant standards;

- If the standards are exceeded then either:
  - a. Review design and emission controls to reduce the impact of the emissions;
  - b. Conduct a health risk assessment to assess what the risk is to the affected community.

The approach to the air quality assessment in the CIS is focussed on meeting the standards in the SEPP (AQM), not minimisation of emissions. Compliance with the standards in the SEPP is the minimum requirement (after controlling emissions) as many of these pollutants do not have a threshold for adverse health effects. All of the pollutants of concern for the Project are considered to be non-threshold pollutants, so there is no 'safe' level of exposure. Even meeting the standards has some level of risk associated with them. The level of risk inherent in the standards is that which Government deemed 'acceptable' at the time of making the SEPP. The focus of the SEPP on minimising emissions and not just meeting numbers is due to the fact that any increase in pollution is linked to an increase in risk in potential health effects associated with exposure to air pollution.

Internationally, the main pollutant of concern with respect to transport is PM<sub>2.5</sub>.

In the opening submission from LMA, Mr Morris stated that the relevant policy and standards for the air quality assessment for the Project is the SEPP (AQM). The Committee agrees that this is the appropriate legislative framework for assessing the air quality impacts associated with the Project. It is the view of the Committee that the qualitative aspects of the SEPP (AQM) are an integral part of assessment of compliance with the policy and must be considered in any assessment of the impact of emissions arising from the project.

## 10.2 General Issues

Although the Committee has identified issues that are of specific concern for the assessment of the air quality impacts arising from the Project, there are some general issues that impact more broadly that need to be considered. These are:

- The selection of NO<sub>2</sub> as the key indicator for the impacts of the Project; and
- The selection of background data used in the air quality assessment.

In terms of minimising the impacts of air emissions arising from the Project, the Committee agrees with the position put forward by the LMA that putting the road in-tunnel is best practice. This is consistent with international trends, discussed by many submitters, that surface roads are being replaced by road tunnels thereby increasing the amount of open space within cities as well as providing improvements in air quality. The Committee is of the view that as far as practicable, as much of the Project should be kept in-tunnel to reduce air quality impacts as well as many of the social and heritage issues that are addressed in other sections of this report.

The CIS air quality assessment has adopted NO<sub>2</sub> as a key indicator of traffic pollution for the Project. Although NO<sub>2</sub> is emitted from motor vehicles PM<sub>2.5</sub> is a more relevant indicator of the potential health effects arising from exposure to motor vehicle pollutants. It is used internationally as the key indicator for assessments of the impacts of motor vehicle emissions and the Committee is of the view that it is the more relevant indicator for this Project. This issue was raised by a number of submitters. PM<sub>2.5</sub> emissions are higher from diesel vehicles than other pollutants especially when the vehicle is under load. As the

Project is proposed as an alternate freight route to the M1, a relatively high proportion of heavy duty vehicles would be expected to use the road system.

In the submission from the RATs (Submission 156,) they quoted from the finding of the Senate Inquiry into Air Pollution in Australia that was conducted in 2013. The report of the Reference Committee that undertook this inquiry found:

*A major source of particles in Australia are vehicle exhausts. Particles are created by both petrol and diesel engines, and the constituents of vehicle exhaust particles are particularly damaging to health as they often contain metals and sulfates.*

The background levels of PM<sub>2.5</sub> are already high and often exceed air quality standards in Melbourne. This is not the case for NO<sub>2</sub> where background levels are well below current air quality standards and exceedances of the standards do not occur. This means that it is much easier to demonstrate compliance for NO<sub>2</sub> than it is for PM<sub>2.5</sub> or PM<sub>10</sub> as background levels must be taken into account in the assessment. As the final design of the road system, alignment and ventilation system (including location of the ventilation stacks) is dependent on demonstrating compliance with SEPP (AQM) standards, the Committee is of the view that additional modelling should be done using PM<sub>2.5</sub> and/or PM<sub>10</sub> as the key indicator to guide the final design of the project.

In its submission, the Department of Health raised concerns over the background data used in the air quality assessment. Similar concerns were raised Ms Walter (Submission 480), the 3068 Neighbourhood Group (Submission 326) and the RATs, (Submission 156). Data from the Alphington air monitoring station was used as background for the assessment of impacts at the Eastern end of the project and data from Footscray was used in the assessment for the western end. The use of this data was supported by EPA Victoria.

Both the Alphington and Footscray air monitoring stations have been sited to provide a representative picture of air quality generally experienced by the local population. They have been located to not be directly influenced by individual sources such as roads or industry. The EPA has conducted monitoring at the North Yarra Community Health Centre on Hoddle Street and at Collingwood College, also on Hoddle Street. These locations are much closer to the proposed location for the ventilation stack and road infrastructure, such as the Hoddle Street flyover, at the eastern end of the Project.

The EPA Publication 874 that reports the results of the air monitoring at Collingwood College, notes that PM<sub>10</sub> levels are higher at the College compared to Alphington or Richmond as the College is closer to the road than either the Alphington or Richmond monitoring stations. The report concludes that:

*The average 24-hour PM<sub>10</sub> concentrations were generally higher than the concentrations measured at fixed monitoring sites in Richmond and Alphington. The higher PM<sub>10</sub> levels are due to the closer proximity to a main road.*

Ms Walter's submission (Submission 480) raised similar concerns and comments that for the residents of Precinct 1, this uncertainty in the modelling may have "devastating" effects on their health.

Ms Walter submitted that the conclusions of the EPA report means that the background data measured at Alphington is not representative of air quality in Precinct 1 and is different from the roadside locations in Precinct 1.

The appropriateness of the background data from Alphington and Footscray for the Project was discussed at the Conclave (Document 29). It was acknowledged that the data collected at Collingwood by the EPA was higher than that measured at Alphington, however Mr Cook and Dr Torre both agreed that the Alphington data was appropriate for use in the air quality assessment.

The CIS claimed that there may be improvements in background air quality due to changed traffic conditions once the Project is in operation. The Committee questions this assumption given that the background data used has not been obtained from the local area. In addition, the traffic modelling presented by Mr Veitch predicts that the traffic on Alexandra Parade will be back to current levels by 2031, so any improvements will be only short-term.

In several places the CIS stated that existing air quality in the Clifton Hill/Collingwood area is already poor and the incremental increase from the Project will not affect that. This issue was raised by the 3068 Neighbourhood Group, the RATs and Ms Walter in their submissions. The SEPP (AQM) requires continuous improvement in air, and Clauses 30 and 31 of the SEPP establish provisions to manage air quality in designated Air Quality Control Regions. These provisions enable the Authority to refuse to allow new sources into an airshed that already has poor air quality unless offsets for emissions can be demonstrated. The Committee believes that the existing condition of the air, as measured in Alphington, should not be used as an excuse to not optimise the design of the ventilation system and the Project overall to minimise the impact of emissions.

The 3068 Neighbourhood Group stated in its submission:

*The modelling still shows that the PM<sub>10</sub> performance is non-compliant and that, even in leafy Alphington, ambient air already exceeded the level that 'would present an unacceptable risk to human health'. The argument supporting this project is that the project will only make things incrementally worse.*

The 3068 Neighbourhood Group are of the view that the CIS does not adequately address the air quality issues. They went further to say that:

*The undue haste with which the CIS has been prepared gives us no confidence in the assurances from the proponent, the Linking Melbourne Authority (the Authority) that it can in fact manage the impacts, or even in fact fully understands them.*

## **10.3 Tunnel Emission Issues**

### **10.3.1 Introduction**

The Scoping directions required the design of the Reference Project to “*minimise impacts of air emissions*”.

The CIS recommended that a new Design and Development Overlay be introduced into local planning schemes to maintain separation for residences from ventilation stacks to minimise

impacts and meet requirements of SEPP (AQM). The Design and Development Overlay would apply to the final design.

The scoping directions required the CIS to provide an outline of potential and any proposed siting and design measures to minimise air quality impacts, including on sensitive receptors in the vicinity of the tunnel ventilation system during project operation.

### **10.3.2 Key Issues**

The Committee has identified that the key issues in relation to the impact of the air emissions from the ventilation stacks are:

- Location of the ventilation structures, in particular the eastern ventilation stack near Gold St, Clifton Hill;
- Inclusion of pollution equipment in the ventilation stacks; and
- Uncertainty in traffic data that may lead to underestimates of the impact on sensitive locations.

A number of submitters raised concerns about the potential health effects of the emissions from the ventilation stacks and whether the SEPP (AQM) standards were protective of public health. These issues are discussed in Chapter 10.8.

### **10.3.3 Submissions and Evidence**

Evidence on the impact of the location of the ventilation stacks on local air quality was contained in the expert witness statement of Mr Cook of GHD. Evidence was provided by Professor Irving in relation to the potential health impacts of the emissions on the local community.

A number of submitters raised concerns about the location of the eastern ventilation stack and the potential impacts on sensitive receptors such as the Clifton Hill Primary School. The 3068 Neighbourhood Group discussed the potential impacts of the ventilation stack and proposed alternative locations to lessen the impacts of air pollution, noise and visual impact (Document 303). Document 282 raised concerns about the location of the ventilation stacks and the need for pollution control equipment to be installed.

### **10.3.4 Discussion**

The Scoping Directions for the CIS state that the Reference Project must be designed to minimise the potential impacts of air emissions arising from the Project.

The CIS Technical Appendix I, p57, states that the proposed location of the ventilation stack is an arbitrary location that was chosen to demonstrate that the requirements of SEPP (AQM), in particular the air quality standards, can be met. The proposed location that has been assessed has not been optimised to minimise the impact of the emissions.

The Committee has concerns that the design that has been assessed has not met the scoping directions in that location of the ventilation stack has not been optimised to minimise the emissions. In Mr Cook's expert witness statement, the results of additional air dispersion modelling were provided to show the effect of moving the ventilation structure either 200m east or west of the location assessed in the CIS on the predicted impacts on the Clifton Hill Primary School. The results of this modelling showed that the predicted concentration of PM<sub>10</sub> at the school was halved by moving the ventilation stack 200m east. This modelling



indicates that optimising the location of the ventilation stack can be done and achieve the minimisation of the impact of emissions from the stack. The Committee believes that additional modelling must be undertaken to guide the final design of the tunnels and the location of the stacks. Consideration should be given to moving the ventilation stacks to the east of Hoddle Street and the South Morang/Hurstbridge Rail Line, away from more sensitive locations.

The relocation of the ventilation stack to the east of Hoddle Street was raised in the submission made on behalf the Clifton Hill Primary School (Submission 907). The school conducted a survey of parent to collect their views in regard to the Project. The submission stated that 90% of respondents supported moving the ventilation stacks further east away from residential areas and the school. The main concern raised was the potential impact on the health of the school staff and students arising from PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The submission raised concern about the impacts of smoke arising from fire, such as that experience in the CityLink Burnley tunnel, on the health of the local community with the ventilation stack located in such a densely populated area. The Committee acknowledges these concerns and such considerations need to be taken into account in the final design of the tunnel ventilation system and the location of the ventilation stacks.

The submission of the 3068 Neighbourhood Group (Document 303) also proposed that the ventilation stacks be moved away from the more densely populated areas to the east of the railway line. The Group proposed three alternative locations which the Committee believe warrant further consideration by the LMA. The 3068 Neighbourhood Group believe that moving the eastern portal to the east of Hoddle Street and the railway line will reduce the impact on sensitive uses such as housing and the schools and locate the ventilation stacks in areas with more open space that will assist in the dispersion of pollution from the ventilation stack. The noise and visual impacts would also be reduced, as well as the need for the Hoddle Street flyover.

In comparing the proposed location of the eastern ventilation stacks with the location of the CityLink and EastLink stacks, it is apparent that the proposed location is in a much more densely populated area than any of the other ventilation structures, including the Burnley ventilation stack in Richmond. The more densely populated the surrounding land use is, the higher the risk of building downwash which essentially traps the pollution from the ventilation stacks at ground level and stops effective dispersion of the emissions from the ventilation stacks. This issue is discussed in the CIS and it was concluded that Design and Development Overlays should be introduced into Local Planning Schemes to restrict the height of buildings in the vicinity of the stacks. The CIS said 2-3 storey buildings may cause building downwash to occur.

One key issue with the proposed location of the ventilation stack used as the basis of the air quality assessment for the Reference Project is that there are already existing buildings that are 2-3 storeys high. The modelling in the CIS does not appear to have taken this into account – it has assumed that there are no buildings other than single story buildings and that there is flat terrain. The Committee believes that taking this approach underestimates the potential impacts on the local community. This concern was raised by Dr Torre from EPA, in his expert witness statement.

There are a number of properties along Alexandra Parade that will be demolished as part of the construction of the Project. The Committee heard submissions from Mr Morris that once the Project was operational, this would provide opportunities for urban renewal along this corridor. Mr Finanzio, on behalf of the City of Yarra, suggested that should the Project proceed, urban renewal opportunities in this area should be pursued. Evidence from Mr McGauran included diagrams of possible urban renewal along the Alexandra Parade precinct that included medium density development. To ensure that the operation of the ventilation stacks and the dispersion of emissions from the stacks were not restricted, such medium density development may need to be prevented.

The area east of Hoddle Street and the railway line is less densely populated than the location assessed in the CIS. The terrain is flatter and the potential for effective dispersion is greater at this location. The Committee is of the view that this location is a preferable location for the eastern ventilation stack. The tunnel should be extended beyond Hoddle Street with the exit portals and ventilation stack located east of the railway line. Air quality modelling should be undertaken for this option and the location of ventilation optimised to minimise the impacts of emissions on the surrounding community. Professor Irving recommended that the ventilation stacks be moved further east to reduce the potential health impacts arising from the air pollution from the stacks. However he further recommended that even with moving the ventilation stacks east of Hoddle Street, pollution control equipment should be installed to ensure that the air emitted from the tunnel is as clean as possible.

During the hearing, the Committee asked LMA if consideration had been given to extending the tunnel and locating the portals and ventilation stack east of Hoddle Street. LMA responded by saying that it had been considered but was a more expensive option. LMA commented that in moving the tunnel east, it may encounter issues with the Merri Creek. No evidence or documentation to support LMA's argument was provided to the Committee. The Committee accepts that extending the tunnels further east and relocating the ventilation stacks may be a more expensive option than the Reference Project, however the Committee is not able to take cost into its considerations. The Committee is of the view that extending the tunnels east of Hoddle Street and the railway line, and locating the ventilation structures at this location would minimise the impact of air emissions meeting the requirements of the Scoping Directions.

A second issue in relation to the minimisation of air emissions is whether the installation of pollution control equipment should be required in the ventilation stacks. Evidence provided by the LMA was that the installation of such equipment is not considered international best practice for emissions control, and would make no demonstrable difference to the external air quality arising from emissions from the ventilation stacks. Many submitters argued that pollution control equipment is used in international road tunnels and should be used for this Project to minimise the health impacts of the air pollution emitted from the ventilation stacks. Professor Irving was strongly of the view that pollution control equipment would improve the quality of the air being emitted from the ventilation stacks, thereby minimising the potential health impacts on the local community.

The LMA did not accept Professor Irving's position. It quoted the experience of the trial of pollution control equipment in Sydney's M5 tunnel as an example that it did not make any

difference to the air quality emitted from the ventilation structure. The Committee notes that the M5 tunnels are of a different design to that proposed for the Reference Project. In the M5 tunnels in-tunnel air is drawn from one tunnel into the second tunnel and both tunnels are then vented through a ventilation stack located approximately 1km from the tunnels. The air flow and ventilation within the tunnels is not as effective as that proposed for the Project, and the Committee consider that it is not an appropriate comparison to consider the effectiveness of air pollution control equipment for a longitudinally vented tunnel as proposed in the Reference Project. However the Committee notes that even though the efficiency target for removal of PM<sub>10</sub> of 80% set for the M5 tunnels was not met, 68% efficiency in PM<sub>10</sub> removal was achieved. Professor Irving was of the view that removal of 68% of PM<sub>10</sub> from the ventilation stack emissions was an acceptable improvement in air quality and would lead to a reduction in potential health impacts in the surrounding community. The Committee accepts Professor Irving's position.

The SEPP (AQM) requires control of emissions by the application of best practice. In the Works Approval Application, contained in the CIS, it is stated that:

*Treatment of emissions is not typically required for tunnel ventilation systems as they are designed to collect and disperse emissions that would otherwise occur at surface and readily achieve air quality limits. It is not expected that a high percentage of heavy vehicles will use the tunnels, and as such treatment of tunnel ventilation systems, which would require significant energy to operate, is considered unnecessary to meet relevant air quality requirements.*

*.... treatment of emissions from the tunnel ventilation system would be costly and energy intensive, and as such is not warranted given the improvement in air quality concentrations for Class 3 indicators that may be achieved (especially given the level of compliance with the relevant SEPP (AQM) criteria that has been predicted with the proposed ventilation system). Therefore the proposed system is the most effective practicable means at the present time to minimise the risks to human health from emissions of Class 3 indicators.*

The question of whether the use of pollution control equipment in road tunnel ventilation systems constitutes best practice emissions control was discussed during the hearing. Mr Morris argued that although pollution control equipment was used internationally, it was not widely used. He quoted that out of hundreds of road tunnels in Norway as an example, only seven tunnels had pollution control equipment installed. There was no explanation provided to the Committee as to why this situation existed. Mr Cook stated that the use of pollution control equipment did not constitute best practice emissions control, and was not widely used overseas for road tunnels. When questioned by Mr Wren on behalf of the Committee, it was clear that he had not undertaken a detailed review of the use of pollution control equipment internationally.

A review of international practice on the use of pollution control equipment in overseas tunnels and the legislative basis for it showed that the reasons for inclusion are dependent on a range of factors (CETU, 2010 (Document 100); Norwegian Public Roads Administration, 2004). The common basis for requiring pollution control equipment includes:

- Whether it is located in a densely populated area or not;

- The sensitivity and quality of the existing environment;
- Community concern about existing air quality in the vicinity of the ventilation stacks;
- Length of the tunnel (tunnels less than 1km in length generally do not require pollution control equipment); and
- Mix of traffic using the tunnel (tunnels with a high proportion of heavy vehicles which emit more particle pollution are more likely to have pollution control systems installed).

In countries such as Norway, the use of studded tyres in the winter months increases particle pollution in the tunnels and reduces visibility. In these situations pollution control equipment is often required to improve visibility in the tunnels.

As discussed above, the proposed location for the Eastern vent stack is within a densely populated area. Based on the above criteria this alone would warrant consideration of the installation of pollution control equipment.

The quality of the existing environment is an important consideration, and is of concern if:

- The area is a pristine area that should be protected; and
- The existing air quality is already poor and exceeds air quality standards.

For the eastern ventilation stack, the existing air quality, represented by data collected at the Alphington air monitoring station, already exceeds air quality standards for PM<sub>10</sub> and PM<sub>2.5</sub>. The CIS acknowledged this and argued that the incremental increase in PM<sub>10</sub> makes no difference to local air quality as it already exceeds the standards and the ventilation stack emissions do not cause any additional exceedances. The Committee acknowledges that, on the basis of the modelling that was done for the CIS, the predicted impact of emissions from the ventilation stacks is small compared to the existing air pollution levels. However, from submissions made by several submitters and Dr Torre of the EPA, there is strong evidence from international studies on the health effects of air pollution, and in particular PM<sub>10</sub> and PM<sub>2.5</sub> that there is no threshold for the health effects associated with these pollutants so that any increase in air pollution will lead to an increased health risk. There is significant community concern about air quality resulting from emissions from the ventilation stacks and the associated health effects.

The tunnels included in the Reference Project are proposed to be 4.4km in length. The CIS concluded that a mid-tunnel fresh air inlet is not required based on modelling of in-tunnel air quality against the PIARC guideline for NO<sub>2</sub>. International practice is that tunnels of similar length require fresh air inlets to improve in-tunnel air quality and the quality of the air vented to the external environment. Some tunnels, such as the A86 West tunnels in France, have more than one fresh air intake to provide adequate ventilation in the tunnels. The Burnley tunnel, as part of CityLink (which is about 3.5km in length), has a fresh air inlet in located in Gosch's Paddock in Richmond. This was required to enable the in-tunnel air quality limits applied to CityLink to be met. At this stage it not proposed for the tunnels for the Project and the Committee considers it should be a requirement.

As discussed above, in the Works Approval application, LMA stated that the percentage of heavy vehicles (HCV) using the tunnels is not expected to be high, and therefore pollution control equipment is not required. The Committee questions this assumption. The Project has been put forward as providing a freight solution for Melbourne. The Project is to

provide a key link between the Port of Melbourne, CityLink and EastLink to provide an alternative option to the M1 for freight movements. On that basis it is unclear how the conclusion has been reached by LMA that the percentage of heavy vehicles would be low. Some international road tunnels are restricted to commuter vehicles with HCV banned from entering the tunnels. This helps control the air pollution levels both in-tunnel and external to the tunnel. As the Project is a proposed freight solution, restricting traffic to commuter vehicles is not a viable option. This would suggest that the inclusion of pollution control equipment in the ventilation stacks should be considered.

LMA put forward that rather than installing pollution control equipment in the ventilation stack, motor vehicle emissions are better controlled at the tail pipe of individual vehicles. This puts the responsibility on individual car owners as well as Government to introduce new vehicle emissions standards and programs to reduce emissions. While the Committee supports actions to reduce motor vehicle emissions, it does not accept that this is an option that alleviates the need for optimal design of the ventilation stacks to minimise the impact of the emissions on surrounding communities. The responsibility for the management of emissions from the Project sits with LMA, not individual car owners.

The predicted level of air pollution arising from the ventilation stacks is strongly dependent on the volumes and mix of traffic assumed to use the tunnels and associated surface roads. As discussed above, the Project has been put forward as a freight solution for Melbourne which would suggest that a relatively high percentage of heavy duty freight vehicles would be expected to use the route. Although the CIS is dealing with the Eastern section of the full link, approvals for Part B (the Port connection) is also being sought. Ultimately the Project would link to the Western Ring Road through the second stage of the project. Since the completion of the Hearing, the Government has announced funding for Stage 2, indicating that the full link will be constructed.

In terms of air quality, a number of factors influence the resulting air quality in the vicinity of the tunnels and associated surface roads. As discussed on p20 of Technical Appendix I of the CIS these include road location (design), ventilation structure location, road gradient (tunnel), speed limits, number of vehicles, vehicle type, emission factors, tunnel ventilation control, meteorological conditions and background ambient air quality data building influences.

On p45 of the CIS Technical Appendix I, it is stated that the traffic mix would be expected to be similar to EastLink, which is primarily a commuter route. This seems to conflict with the stated purpose of the Project as a freight solution. Both the CIS and the Works Approval application state that the expected percentage of heavy vehicles would not be expected to be high. The air quality assessment has assumed 3% of heavy vehicles during peak periods and 5% at maximum freight times. The Committee questions this assumption and believes that this underestimates the potential impacts of emissions from the ventilation stacks (and surface roads associated with the project). Mr Veitch stated that the percentage of commercial vehicles expected to use the tunnels would be of the order of 7-8%. This was based on toll data from Eastlink, and was supported by Mr Pelosi who stated that he would expect approximately 7% of commercial vehicles to use the Project, made up of 3.5% HCV. Mr Pelosi compared this to 10% of HCV currently using the M1 freeway. The impact of using

lower freight percentage is of greater importance for PM<sub>10</sub> and PM<sub>2.5</sub> as diesel freight vehicles emit a higher percentage of particle pollution than passenger vehicles.

In 2010, CETU conducted a review of road tunnels in various parts of the world, including the M5 tunnel in Sydney. The report found that the main reason that the M5 tunnel experiences problems with air pollution is that there is a greater density of traffic using that tunnels than predicted in the modelling done as part of the approval process, in particular the number of HCV using the tunnel (p20, CETU, 2010 – Document 100). The report goes further to say that the reason the cost of installing pollution control equipment in the tunnel ventilation system was so high was because the tunnel was not designed initially to accommodate this equipment. This highlights the need to get the traffic predictions, mix and volumes correct in the design phase of the Project to ensure that the emissions to air are minimised and that the tunnel is designed optimally.

The CIS states that the modelling has been done on theoretical maximum traffic volume from PIARC of 2000 passenger vehicles/hr. It has not been done on the actual predicted traffic flow for this Project including the predicted freight movements. Technical Appendix I stated that the predicted traffic flow is actually lower than the maximum capacity suggested by PIARC. This position is inconsistent with the evidence of Mr Pelosi that the tunnels will be at capacity by 2031. However, the air quality assessment did not assess 2031 traffic conditions. The reasons stated in the CIS and Technical Appendix I is that there were no emission factors available from PIARC for 2031, and therefore the assessment could not be conducted. This position was put forward by Mr Cook in his evidence, which the Committee does not accept. A conservative assessment should have been undertaken using the emission factors used for 2021 applied to 2031 traffic predictions. GHD claim that vehicle emissions will reduce by 2031 and that this would over-predict the potential impacts (i.e. be conservative).

The SEPP (AQM) requires assessment of new sources of pollution to be conducted on the worst case emissions arising from the normal operation of the facility, in this case the ventilation stacks. The use of the 2021 emission factors with the 2031 traffic predictions would represent such a situation and should be assessed in the final design of the tunnels and associated ventilation stacks. Although a Discussion paper was released by the Commonwealth Government in 2010 to obtain stakeholder views on the adoption of Euro 6 emission standards for heavy vehicles in Australia, no commitment or timeframe has been made to adopt these standards. The PIARC emission factors assume that the Euro 6 standards will be adopted and implemented by 2031. This may lead to an underestimate of the predicted pollution levels and the 2021 factors may in fact be more relevant.

The modelling undertaken as part of Dr Torre's evidence used different emission factors to those used by GHD in the CIS. The predicted levels of PM<sub>10</sub> from the ventilation stacks in the EPA modelling, although still low, were double those predicted by GHD using the PIARC factors.

### **10.3.5 Findings**

Based on the information contained in the CIS, evidence presented at the Hearing and in submissions, the Committee finds that the air quality assessment has made a number of assumptions that may underestimate the potential impact of the emissions from the

ventilation stack. In finalising the design of the tunnel and the ventilation system, additional air quality modelling is required. The Committee recommends that a detailed air modelling assessment as part of the final design of the tunnel ventilation system using PM<sub>2.5</sub> and PM<sub>10</sub> as the key indicators for the assessment be undertaken and the ventilation stacks be moved to the east of Hoddle Street and the Hurstbridge/South Morang Railway Line, with the tunnel portal extending to that point. Moving the ventilation stack to the East of Hoddle Street and the Hurstbridge/South Morang Railway line will minimise the potential impact on local communities.

Given the location of the ventilation stack and the condition of the existing air environment, it could be considered that pollution control equipment would be considered as best practice emissions control as required under the SEPP (AQM). The Committee accepts that this has not been required in other road tunnels in Victoria, however it has been a requirement of approval that both the EastLink and CityLink tunnels had to make provision to retrofit pollution control equipment in the future should it be required. It is recommended that this be adopted as a Performance Requirement for this Project.

The LMA should make provision for retrofitting of pollution control equipment, and fit air pollution control equipment into the tunnel ventilation systems if the modelling for the final design shows that the PM<sub>10</sub> or PM<sub>2.5</sub> levels from the ventilation stack emissions is greater than 30% of the applicable air quality standards.

Thirty percent is used as a common 'rule of thumb' in the industry as a point at which impacts may become measureable or may become significant.

Further, a Design and Development Overlay should be introduced into the Yarra and Melbourne Planning Schemes to limit the height of development in the location of the ventilation stacks and portals once the final design is resolved.

## **10.4 In Tunnel Air Quality Issues**

### **10.4.1 Introduction**

The scoping directions required the design of the Reference Project to minimise the impacts of air emissions. In-tunnel air quality can affect the health of people using the tunnel as well as impacting on the external air environment at the point of release either at the portals of the tunnels or through the ventilation stacks.

### **10.4.2 Key Issues**

The Committee has identified that the key issues in relation to in-tunnel air quality are:

- Selection of NO<sub>2</sub> as the key indicator;
- Selection of appropriate in-tunnel air quality standards; and
- Need for mid-tunnel air intake.

### **10.4.3 Submissions and Evidence**

Evidence on the in-tunnel air quality was contained in the expert witness statement of Professor Irving. The EPA submission recommends alternative in-tunnel air quality standards to be used in the project. These are discussed in the report of the Conclave on air quality.

#### 10.4.4 Discussion

The focus of the CIS in terms of in-tunnel air quality is based on the meeting of the PIARC standards for in-tunnel air quality. The modelling, based on the traffic predictions which are dominated by passenger vehicles, indicated that the PIARC in-tunnel air quality standards for NO<sub>2</sub> would be the most difficult to meet. The conclusion reached in the CIS was that NO<sub>2</sub> was the controlling pollutant to guide the design of the ventilation systems for the tunnels. The primary aim of the PIARC standards is to provide a safe environment for people travelling through the tunnels in normal operating conditions. They do not take into account sensitive groups within the population that may be impacted at lower levels of pollution or situations, such as accidents in the tunnel, where people may be exposed to in-tunnel air quality for a prolonged period of time.

In-tunnel air quality is usually controlled by PM<sub>10</sub>, NO<sub>2</sub> or CO (CIS Technical Appendix I, p51)). The CIS does not provide any assessment of PM<sub>10</sub> or CO. It is acknowledged in the CIS (Technical Appendix I, p51 that NO<sub>2</sub> is not commonly used to control in-tunnel air quality. Only one example in an Austrian tunnel is given where NO<sub>2</sub> has been used and in that case the controls were applied to limit emissions to the external air environment to control ambient levels of NO<sub>2</sub>.

Both the CityLink and EastLink tunnels use CO to limit in-tunnel air quality. The CO standards used in these tunnels were derived to protect sensitive groups within the population with a significant margin of safety to account for situations where people may be in the tunnel for extended periods of time – for example if an accident occurred requiring people to leave their vehicles and walk out of the tunnels. The standards also protect maintenance workers who may have to enter the tunnel.

The EPA (Document 29) recommended that the CO standards applied for CityLink and EastLink be applied for in-tunnel air quality for the Project. The Department of Health also recommended that these standards be applied to control in-tunnel air quality. This recommendation has been accepted by LMA and has been included in the draft licence for the ventilation system for the Project tunnels. This needs to be reflected in a Performance Requirement for the Project.

Although the CO standards have been adopted for use in the Project, no modelling has been done to assess whether they can be met with the proposed design. Modelling for the final design needs to be done to confirm that these standards can be met and whether a mid-tunnel air inlet is required.

The Committee is aware that internationally, mid-tunnel air intakes are commonly required in tunnels of the length proposed for the Project to ensure that acceptable levels of in-tunnel air quality can be achieved and also to reduce the emissions from the ventilation stacks to the external air environment. A mid-tunnel air inlet is not proposed for the Project tunnels. This conclusion was based on the assumption that the PIARC NO<sub>2</sub> standards can be met. However, on p51 of Technical Appendix I to the CIS it is stated that arbitrary ventilation rates were used to ensure compliance with the PIARC standards. No attempt appeared to be made to optimise the design to reduce air emissions. The CIS Technical Appendix I, p51, goes further in saying that the design and ventilation rates used in the air modelling in no way represent optimal design for ventilation rates. The Committee believe that this raises



significant concern about the conclusion reached in the CIS and is of the view that to guide the final design of the tunnels and associated ventilation structures additional air quality modelling must be done. This modelling is to be conducted to ensure that the design of the ventilation system can meet the proposed CO in-tunnel air quality standards and to explore the benefits of including a mid-tunnel air intake to improve in-tunnel air quality and reduce the impact of the tunnel emissions to the external air environment.

The risk pathway identified in the CIS (p41 Technical Appendix I) states that the ventilation system is rated as a medium risk. This is based on the potential for in-tunnel air quality standards to be exceeded. The CIS proposes a Performance Requirement to reduce the risk to a low risk which would require closing of lanes in the tunnels to reduce traffic or by the use of variable speed signage. The closing of lanes to manage in-tunnel air quality is currently used at times when the in-tunnel monitoring in the Burnley tunnel exceeds the in-tunnel standards. Limiting the amount of traffic in the tunnels reduces the emissions in the tunnels. This approach to managing emissions can lead to significant traffic congestion and delays; effectively limiting tunnel traffic capacity at the time when it is most needed. The Committee is of the view that the inclusion of a performance requirement that introduces traffic management practices to reduce emissions is not appropriate at the design stage.

The tunnel ventilation system should be able to be designed to provide an adequate margin of compliance with the in-tunnel air quality objectives when the tunnel is operating at full capacity. To provide this level of conservatism a mid-tunnel air intake should be included in the final design which is consistent with international best practice in road tunnel ventilation.

Professor Irving put forward the position that in-tunnel air quality should be as clean as possible so that it is safe for people using the tunnels as well as cleaner air being emitted from stacks. Professor Irving believes the in-tunnel air quality must be at a level that does not impact on the health of people who fall into groups who are particularly susceptible to the health effects of air pollution. This would also ensure that the emissions from the ventilation stacks were minimised and would not impact on the health of the surrounding communities. The use of the CO in-tunnel air quality standards that have been applied in both the CityLink and EastLink tunnels together with a mid-tunnel air intake would assist in achieving this outcome.

#### **10.4.5 Findings**

The Committee supports the adoption of the in-tunnel air quality standards for CO used for CityLink and EastLink for the control on in-tunnel air quality. The adoption of these standards is reflected Performance Requirements in Appendix E. To ensure that the in-tunnel air quality can meet these standards additional modelling must be undertaken to guide the final design.

The final design must include a mid-tunnel air intake to ensure that the in-tunnel air quality is as clean as possible. This will protect the health of people using the tunnel as well as minimising emission to the external air environment through the ventilation stacks. This will also help to avoid the closure of traffic lanes to manage in-tunnel air quality.

## **10.5 Surface Roads and Near Road Air Quality**

### **10.5.1 Introduction**

The scoping directions required the design of the Reference Project to minimise the impacts of air emissions. The scoping directions identified the following key risks in relation to air quality requiring assessment in the CIS:

- Localised increases in emissions affecting residential areas, users of public open space or other sensitive receptors during project construction or operation;
- Localised reduction in air quality from tunnel vents and altered traffic conditions during project operation exceeds relevant standards, and
- Assessment of air quality including in the vicinity of the tunnel ventilation system, the eastern portal and the Flemington Road/CityLink interchange and any other areas identified as being at risk of significant air quality impacts.

### **10.5.2 Key Issues**

The Committee has identified that the key issues in relation to air emissions from surface roads and near road air quality are:

- The gradients of the roads used in the modelling;
- Lack of assessment for PM<sub>10</sub> and PM<sub>2.5</sub>;
- Modelling of impacts from elevated viaducts; and
- Set back of roads from residential buildings.

### **10.5.3 Submissions and Evidence**

The Committee did not receive any evidence in relation to emissions from surface roads. Several submitters raised concerns about the health effects of air pollution arising from trucks using the Project.

### **10.5.4 Discussion**

The CIS Technical Appendix I, p20, identifies the key issues that affect air emissions from transport and associated roads. One of the key influences is the grade of the road. The greater the grade the higher the emissions per km travelled in particular for PM<sub>10</sub> and PM<sub>2.5</sub>. The CIS on p20 of Technical Appendix I acknowledges that the grade of the road affects emissions but claims that this is only important for the tunnel. The Committee does not accept this position as the grade of the road affects emissions whether in tunnel or at surface.

The elevated viaducts that are proposed through Royal Park connecting to CityLink in the north and to the Port Connection in the south are at significant grade. The south bound road in the Reference Project is proposed to rise over CityLink and comes within 25 to 30m of the Debney's Park Housing Estate at the closest point at a height greater than 10m above ground.

The CIS Technical Appendix I states that the surface roads have all been modelled at zero grade. This ignores the significant grades of the elevated viaducts at the western end which are located close to properties in Parkville West as well as the Debney's Park Estate. In the s57(4) Request for further information the Committee requested further assessment of the impact of grade on the local air quality for these areas. In the response from LMA, GHD

responded that the assumption was that *“there were as many up grades as there were down grades and that this averaged out to zero grade”*. The Committee does not accept this response. Even if this could apply to regional air quality it ignores the potentially significant local impacts on residential locations. At a local level the impact of grade can be significant especially for diesel vehicles under load. This is apparent for vehicles exiting the Burnley tunnel where visible emissions from diesel vehicles are observed when under load due to the significant grade of the road at the east end of the tunnel.

In the s57(4) request, the Committee asked for an assessment to be done taking the proposed grade of the surface roads into account for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. Although some modelling was done for NO<sub>2</sub> no assessment was provided to the Committee for PM<sub>10</sub> or PM<sub>2.5</sub>. The influence of grade is likely to be greater for these pollutants than for NO<sub>2</sub> and an assessment of these pollutants needs to be done to guide the final design and alignment of the elevated viaducts to minimise the impacts on the local communities. The modelling provided for NO<sub>2</sub> is likely to underestimate the impact of emissions arising from these elevated roads.

As discussed in Chapter 10.2.4, there is significant uncertainty about the assumptions used in the traffic modelling relating to the percentage of heavy vehicles using the Project. It is unclear whether the freight traffic that would use Part B has been included in the modelling and the estimates of 5% heavy vehicles that have been assumed in the air quality modelling is low for a proposed freight route. The low percentage of heavy vehicles combined with modelling the surface roads at zero grade will significantly underestimate the potential impacts of near road emissions of PM<sub>10</sub> and PM<sub>2.5</sub>.

The modelling of the surface roads has been assessed at ground level even for elevated roads (CIS Technical Appendix I). Mr Morris in his closing on behalf of LMA stated that the impact of emissions from surface roads is greatest at ground level. While this is correct for roads at ground level it is not true for elevated roads. As argued in the CIS the impact of emissions from surface roads decreases with distance from the side of the road. In evidence from Mr Cook in response to submissions, reference is made to several studies that show significant decreases in near road air pollution levels within 50m of the road. The greatest impact is at locations closest to the roadside even for elevated roads as this is closest to the source. Assessing the impact of the elevated viaducts at ground level ignores the potentially significant impacts at the elevated locations such as the apartments in the Debney’s Park Housing Estate where the proposed Port Connection passes within 25 to 30m at the closest point. Vulnerable groups to the effects of air pollution on health have been shown to include people in low socioeconomic groups. This would suggest that the residents of the housing estate are already more vulnerable to the effects of air pollution than the general population.

The Committee is of the view that the approach to the assessment of the surface roads underestimates the potential impacts of emissions arising from these roads on local communities. The Committee recommend that the air quality assessment for the surface roads, including Part B of the Project, needs to be redone to guide the optimal design of the road structures to minimise the impacts on local communities. In his evidence at the Hearing, Dr Torre, EPA, in response to questions from the Committee, stated that it is important to get the design of the surface roads right. If the design is wrong and the air

quality impacts are greater than predicted there are very limited mitigation measures can be implemented to reduce the impacts. The Committee accept Dr Torre's opinion and believe that any modelling done to guide the final design and alignment of the surface roads is critical to ensure that the impacts of these roads is minimised in accordance with the Scoping Directions issued for this Project. This should include exploring alternative setbacks of the roads from residential areas, including the Debney's Park Housing Estate, Parkville West and the Arden-Macaulay urban renewal precinct. International studies have shown that the health effects of traffic pollution are greatest within 100m of the road and can be experienced as far as 500 m from a major road. The Reference design for the Project has roads generally within 8 to 10m of residential properties such as the Bent Street apartments in Kensington.

### **10.5.5 Findings**

The assumptions that have been made in the modelling of surface roads are likely to underestimate the impacts of the air emissions on local communities. As reflected in the evidence of Dr Torre, it is important to get this assessment as accurate as possible, as once a road is built there is very little that can be done if the impact is greater than expected.

It is therefore recommended that an additional air quality assessment be undertaken to guide the final design and alignment of the surface roads and elevated viaducts. The modelling must be done for PM<sub>2.5</sub> and PM<sub>10</sub> and use accurate traffic mix data and road grades that are proposed for the final design.

Given that air pollution levels are highest adjacent to the surface roads and has been shown to drop off rapidly within 50m of the road and close to background levels within 100m of the road side, adequate setbacks need to be included to minimise the impacts of air emissions on sensitive locations.

## **10.6 Part B**

### **10.6.1 Introduction**

The scoping directions required the design of the reference project to minimise the impacts of air emissions. The scoping directions identified the following key risks in relation to air quality requiring assessment in the CIS:

- Localised increases in emissions affecting residential areas, users of public open space or other sensitive receptors during project construction or operation
- Localised reduction in air quality from tunnel vents and altered traffic conditions during project operation exceeds relevant standards, and
- Assessment of air quality including in the vicinity of the tunnel ventilation system, the eastern portal and the Flemington Road/CityLink interchange and any other areas identified as being at risk of significant air quality impacts.
- Identification of dwellings and other sensitive receptors that could be affected by emissions.

### **10.6.2 Key Issues**

The Committee has identified that the key issues in relation to the air quality assessment for Part B are:

- No detailed assessment for Part B has been conducted; and
- No assessment done for the Arden-Macaulay Urban Renewal area.

### **10.6.3 Submissions and Evidence**

No evidence was given in relation to the air quality impacts of Part B. Some submitters raised concern about air pollution from traffic, and trucks in particular, impacting on their residences.

### **10.6.4 Discussion**

In reviewing the CIS it is clear that no detailed air quality assessment has been conducted for the proposed alignment of the viaducts that form Part B of the Project. Some modelling has been done of air emissions from the existing CityLink but the impact of the emissions from the proposed Project viaducts has not been assessed. Modelling of the emissions from the centre of the existing CityLink will underestimate the impacts of the emissions from the Project on local communities adjacent to the proposed road alignment. The CIS does not contain any information about how the proposed alignment has been chosen that would minimise the impacts of air emissions on local communities. As such the CIS does not meet the requirements set out in the Scoping Directions for Part B.

The modelling that has been undertaken only considers NO<sub>2</sub> emissions. As previously discussed the most relevant indicator for traffic emissions is PM<sub>2.5</sub> especially for roads that are predicted to carry a significant amount of HCV. No assessment has been conducted for either PM<sub>10</sub> or PM<sub>2.5</sub> for the roads in Part B of the Project. It has been assumed in the CIS, p83 Technical Appendix I that compliance with NO<sub>2</sub> standards will translate to compliance for PM<sub>10</sub> and CO. This is not necessarily true as existing background air quality for PM<sub>10</sub> and PM<sub>2.5</sub> are already close to or exceeding the standards for these pollutants. The same situation does not apply to NO<sub>2</sub> where existing background concentrations are well below air quality standards. To guide the final design for Part B, modelling of PM<sub>10</sub> and PM<sub>2.5</sub> must be undertaken.

The modelling done for Precincts 4 and 5 has been done at a height of 10m above the ground using the existing CityLink height and centre point as the basis of the modelling. The proposed viaduct however runs to the west of the existing CityLink and is much closer to residences. Several submitters raised concerns that the proposed road would generally be 8 to 10m from their Bent Street apartments which are outside the Proposed Project Boundary and not being considered by LMA for acquisition. Modelling has not been conducted to estimate the impacts of the proposed viaducts on the Bent Street apartments or for the Arden-Macaulay urban renewal precinct more broadly. Given that the Arden-Macaulay Structure Plan for this area has been released (Document 20), the impacts of the proposed roads on local air quality need to be assessed to ensure that the final design minimises the impacts on local residents. This should include the impact on emissions from the Arden Street off ramps and associated traffic changes in the local area.

### **10.6.5 Findings**

A detailed assessment of the air quality impacts of Part B is required to guide the final design and alignment. Alternate alignments to those presented for the Reference Project must be considered to minimise impacts on residences, for example the Bent Street apartments. Any

new modelling must take into account traffic volumes and the traffic mix predicted for the whole link.

## **10.7 Greenhouse Gas**

### **10.7.1 Introduction**

Greenhouse Gas was assessed in Technical Appendix R of the CIS. In the Committee's Terms of Reference at 7(d) under *Public Hearing Matters*, the Committee is required to consider:

*Whether the noise, vibration, air emission and light spill impacts of the project will be appropriately managed by proposed measures.*

As described in Section 1.2 of the Greenhouse Gas in the CIS, the relevant Applicable Approval is the *Environment Protection Act 1970 Works Approval*. The Works Approval Application "...needs to include the predicted operational energy use and greenhouse gas emissions associated with the tunnel ventilation system, ..."

### **10.7.2 Conclusions of the CIS**

The CIS concludes on Greenhouse Gas emissions that there should be a small reduction in vehicle emissions compared to a 'no project scenario' due to more free flowing traffic. Savings from improved traffic flow are offset by electricity use by the project but there should be a small net positive impact of 17 kt CO<sub>2</sub>-e per annum.

There are likely to be construction emissions totalling 660 kt CO<sub>2</sub>-e per annum from fuel use, electricity use and embodied energy, but these construction emissions are estimated to be only 0.5 per cent of current Victorian Greenhouse Gas emissions.

### **10.7.3 Objectives and Performance Requirements**

There was no specific evaluation objective for Greenhouse Gas in the CIS, but the LMA suggested that they are covered in the air quality objective:

*Noise, vibration, air emissions, and light spill – to minimise adverse impacts from noise, vibration, air emissions and light spill.*

A specific performance objective was developed:

*To protect the beneficial uses of the air environment in relation to greenhouse gas emissions.*

And then a Performance Requirement:

*Integrate sustainable design practices into the design process to identify, implement and monitor measures that will reduce overall greenhouse gas emissions arising from construction, maintenance and operation of the project. Include mandatory actions under the SEPP Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry) for selection of best practice energy usage for the tunnel ventilation system.*

### **10.7.4 Key Issues**

The Committee did not hear any specific evidence relating to greenhouse gas.

Based on its consideration of the written and verbal submissions relevant to its Terms of Reference relating to greenhouse gases, the Committee has grouped its assessment under the following headings:

- Greenhouse Gases from traffic and construction; and
- Greenhouse Gas emissions from tunnel ventilation.

#### **10.7.5 Submissions and Evidence**

##### **(i) Greenhouse Gases from traffic and construction**

Mr Morris for the LMA in closing acknowledged that a significant number of submissions raised the issue of Greenhouse Gas emissions from vehicle traffic.<sup>11</sup> He relied on the work undertaken in Appendix R and noted that no submitter had effectively challenged the technical basis of that assessment.

Ms Kerry Echberg for the Yarra Climate Action Now (YCAN) group presented at the Hearing<sup>12</sup> and noted that vehicle traffic emissions account for a significant amount (60%) of transport emissions. Ms Echberg questioned the assumptions in Appendix R, suggesting that predicted vehicle efficiency gains are likely to be offset by larger vehicles and increasing vehicle air conditioning and electrical loads.

YCAN also questioned the likely Greenhouse Gas benefits of improved traffic congestion, given that those improvements have been challenged at the Hearing.

Finally, YCAN did not agree that the emissions of Greenhouse Gases are likely to be insignificant in a Victorian context, submitting that a calculation by one of their members suggested that the construction emissions are similar in magnitude to the annual Greenhouse Gas emissions of a town the size of Traralgon.

The EPA<sup>13</sup> at the Hearing noted that it does not consider Greenhouse Gases from construction and embodied energy in their assessment, but it encourages best practice.

##### **(ii) Greenhouse Gases from tunnel ventilation**

Mr John Marsiglio provided the EPA view on Greenhouse Gas emissions from tunnel ventilation, the consideration of which forms part of the Work Approval Application. Mr Marsiglio submitted that for the Project, Greenhouse Gas emissions must be considered in terms of:

- The SEPP (AQM) to achieve best practice; and
- Because of the calculated Greenhouse Gas emissions from the tunnel ventilation system, triggers requiring consideration of the Protocol for Environmental Management – Greenhouse Gas Emissions and Energy Efficiency in Industry are reached and best practice energy efficient plant and equipment must be used.

Mr Marsiglio submitted that whilst the EPA could comment specifically on the Project as a detailed design is not available, the EPA supported the proposed Greenhouse Gas

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<sup>11</sup> Document 525, para 622 onwards.

<sup>12</sup> Document 304.

<sup>13</sup> Document 266, para 4.3.

Performance Requirement (GG1) that requires specific consideration of the Greenhouse Gas Protocol for Environmental Management.

#### **10.7.6 Discussion**

##### **(i) Greenhouse gases from traffic and construction**

The Committee notes the concern of a number of submitters regarding Greenhouse Gas emissions from construction and increased traffic. There is no doubt that Greenhouse Gas emissions from construction (fuel use, electricity use and embedded energy in materials) will be significant. The Committee does not find it useful to attempt to minimise the conceptualisation of the Project emissions by comparing them to Victorian and Australian emissions. It might have been more useful to compare them to construction project emissions to provide a fairer comparison.

The calculations provided in Appendix R are based on the Reference Project and thus the real figures will vary depending on the design and construction measures proposed. That being said, the basis of the figures relating to construction Greenhouse Gas emissions was not significantly challenged through the Hearing process.

In relation to traffic Greenhouse Gas emissions, the Committee notes the submissions of YCAN and others as to the reliability of the calculations in Appendix R of the CIS. In essence the Committee considers little weight can be given to predictions of Greenhouse Gas emissions over time, as there are numerous assumptions and variables that have high levels of uncertainty attached. These include future fuel prices, vehicle efficiency, passenger and freight modes and others.

The Committee notes the extensive discussion on this issue in the Frankston Bypass EES Inquiry Report (Frankston Bypass (EES) [2009] PPV 33) at Chapter 14. That Inquiry concluded that there is little value in considering the Greenhouse Gas emissions from individual capital works projects, and that they should be assessed at a higher strategic planning level.

Whilst not necessarily adopting the position of that Inquiry in toto, the Committee does consider it is an issue which must be tackled more holistically than at a project by project level. It will include broader community issues such as new vehicle emission standards and the broader investment decisions around transport and city planning.

On these matters the Committee concludes that:

- Construction Greenhouse Gas emissions will be significant, even with mitigation by design and materials and equipment selection; and
- The conclusion by the LMA that Greenhouse Gas emissions from traffic will be reduced over time compared to a 'no project' scenario are dependent on a number of uncertain variables and assumptions.

##### **(ii) Greenhouse Gases from tunnel ventilation**

As there is no detail before the Committee on the location or form of the tunnel ventilation system, it is somewhat difficult to discuss whether or not the Committee considers it is an acceptable part of the Project. However, given that such systems are in use widely in



Australia and around the world, the Committee considers it should be possible to design and implement a system that provides acceptable Greenhouse Gas emission performance.

The Committee notes the submission of the EPA on this matter and is given some comfort that it appeared satisfied that the Greenhouse Gas emissions from the tunnel ventilation system can be managed within the established regulatory framework.

### **10.7.7 Findings**

The Committee concludes that the Greenhouse Gas emissions from the Project are likely to be significant over time from construction and operation. The Committee notes that the evaluation objective is to 'minimise' impact rather than prevent impact. This flows through to the proposed Performance Requirement where the intent appears to be to reduce impacts from construction, operation and maintenance compared to a scenario where no impact minimisation is undertaken.

In this context the Committee generally supports the Performance Requirement GG1..

## **10.8 Public Health**

### **10.8.1 Introduction**

Although there are no direct evaluation objectives from scoping document/CIS, the objective set out in the scoping documents for air and noise emissions is relevant to public health considerations.

*Whether the noise, vibration, air emission and light spill impacts of the project will be appropriately managed by the proposed measures.*

### **10.8.2 Key Issues**

The Committee has identified that the key issues in regard to public health are:

- Health effects associated with air pollution experience below the current air quality standards;
- Health effects of noise not being reflected in Policy;
- Impact on vulnerable groups within the population including children, the elderly, people with existing disease and people in low socioeconomic groups; and
- Current policies for air quality and noise overdue for review and not reflective of the current understanding of the health effects of exposure to these hazards.

### **10.8.3 Submissions and Evidence**

Professor Irving gave evidence on the health effects of air pollution. Many submitters raised concern about the potential health impacts of air pollution from the tunnel ventilation stacks and that the air quality standards did not reflect the most recent understanding of the health effects of air pollution and thus were not protective of health. Submitters raised concern about the health impacts of diesel and that diesel emissions have not been assessed in the CIS.

### **10.8.4 Discussion**

A number of submitters raised concern about the health effects of air pollution arising from the Project. Ms Walter (Submission 480) and the RATs group (Submission 156) provided

extensive reviews of the health evidence for the effects of air pollution. It is clear from the submissions put before the Committee that it is accepted internationally that the main pollutant of concern with respect to transport is PM<sub>2.5</sub>. Dr Torre in his evidence on behalf of the EPA acknowledged that in terms of health, PM<sub>2.5</sub> is the main pollutant of concern. However the CIS did not provide any detailed assessment of the impacts of PM<sub>2.5</sub> arising from either the ventilation stacks or the surface roads.

In October 2013 the WHO/International Agency for Research into Cancer (IARC) classified ambient air pollution as a known human carcinogen. This was noted by a number of submitters who questioned the use of the SEPP (AQM) standards as a basis to assess this Project given that the most recent health information has not been used in the derivation of these standards. This was based on European Study of Cohorts for Air Pollution Effects (ESCAPE) that found an increase in lung cancer associated with exposure to air pollution, in particular PM<sub>2.5</sub>. Professor Irving quoted the ESCAPE study as a key study in identifying the long-term health risks from exposure to traffic pollution. The results of the ESCAPE study showed that the health risks were higher for people living near major roads. Mr Morris questioned the applicability of the findings of this study to the Project area, given that the air pollution levels in the ESCAPE study were generally higher than those predicted for the area around the ventilation stacks. Professor Irving pointed out that it is accepted that there is no safe level of exposure to PM<sub>2.5</sub> and PM<sub>10</sub> and his view was that the study findings were relevant. This was a position put forward by other submitters.

Numerous other studies have found living near main roads and exposure to traffic emissions, including trucks, is associated with increases in deaths due to cardiovascular and respiratory disease, hospital admissions and emergency department attendances for cardiovascular and respiratory disease, including asthma, reduction in lung function and lung growth in children, as well as increases in cough and wheeze. A number of these studies were reviewed in the submissions of Ms Walter, The RATs and evidence of Professor Irving (Submissions 480 and 156). These effects can extend up to 500m from a road. People who have existing cardiovascular disease and respiratory disease, asthma, diabetes, pregnant women, foetuses and people in low socioeconomic groups all form vulnerable groups for the effects of air pollution. Other submitters referred to vulnerable groups and raised concerns about the potential health effects arising from emissions from the Project. The NHMRC report on Air Pollution in and Around Road Tunnels (2006) was quoted in relation to impaired lung development in children and the association with emissions from traffic. Other submitters commented that the LMA must get the assessment and management of the tunnel emissions right based on the views of health experts and the history of Sydney's M5, and questioned the fast track approval and procurement process.

Diesel emissions are classified by WHO/IARC and the United States Environment Protection Agency (USEPA) as a known human carcinogen. This issue was raised by a number of submitters. No assessment was undertaken of the potential impact of diesel emissions which many submitters believe is a substantial flaw in the CIS. Given that the Project is a proposed freight route, it would be prudent for such an assessment to be done to ensure that the final design of the Project minimises the impact of these emissions on the health of the local communities.

The carcinogenicity of the emissions has not been considered in the CIS even though it is considered a freight route. The RATs group (Submission 156) raised concern with regard to the PAHs and metals that are attached to diesel exhaust that have been identified as causing direct and indirect oxidative damage and genotoxic effects. The RATs were of the view that the CIS did not adequately address the health effects of these pollutants. This was a view echoed by many others including Professor Irving, the Clifton Hill Primary School (Submission 907) and Ms Walter (Submission 480). The RATs went further to say that:

*The reliance on a reference design which is subject to change by the contractor and LMA provides no assurance that best practice technology, focussed on ensuring the best health outcomes for the community, will be implemented.*

In 2010, the National Environment Protection Council (NEPM) conducted a review of the standards in the Ambient Air Quality. The review recommended, based on new evidence about the health effects of air pollution, that there were health effects observed at levels below the current ambient air quality standards and that the standards should be changed to provide a greater level of protection to the Australian population. Some work has been done on PM<sub>2.5</sub> and PM<sub>10</sub> but as yet the NEPM standards have not formally been changed. In April 2014 the NEPC announced its intention to vary the Ambient Air Quality NEPM to change the standards for PM<sub>10</sub> and PM<sub>2.5</sub> to reflect the current understanding of the health effects of these pollutants ([www.nepc.gov.au](http://www.nepc.gov.au)).

The SEPP (AQM) was due for review in December 2011. It appears as yet EPA has not conducted the review or made any changes to the SEPP. The Committee is of the opinion that the standards in the SEPP are out of date and do not reflect the current understanding of the health effects associated with exposure to many of the pollutants covered in SEPP, including those of concern for the Project. When the Committee asked Dr Torre from the EPA about the timeframe for review of the SEPP, his response was that DEPI was responsible for the review and that a timeline had not been set. When asked if any of the standards had been changed since the SEPP was made in 2001, his response was that they had not.

In submissions from the LMA, it was proposed that the area of Ross Straw Field that would remain under the viaducts could be used for active recreation once the Project was completed. Professor Irving in his evidence stated that the health effects experienced by people increases with exercise due to a greater intake of air (faster breathing rate). The Committee asked Professor Irving if he thought that the area of Ross Straw Field that would be under the viaducts would be suitable for active recreation and his response was that it was not, due to the increased health risk.

Professor Irving was asked his opinion on the LMA's proposal to locate the Debney's Park Playground under the elevated road adjacent to CityLink. He responded that children are a particularly vulnerable group to the effects of air pollution and that having children playing under a freeway would increase the risk to their health. His view was that it was not an acceptable option for the playground, or any open space where active recreation may occur, to be placed under the elevated road structures.

As discussed in Chapter 10.5, the elevated road for the Port Connection is proposed to go to within 25 to 30m at the closest point of the residential buildings within the Debney's Park Housing Estate. Many international studies have found that people in low socioeconomic

groups, such as the people at the Estate, are particularly vulnerable to the effects of air pollution. This is due to several reasons including:

- They tend to have poorer health status and health care;
- They live in more polluted environments as it is cheaper to live there; and
- Their houses tend to be old stock and are leaky to external air. What pollution is outdoors ends up indoors so their exposure is greater.

Submitters from the Debney's Park Estate, who presented at the Hearing and in written submissions, commented that the flats do not have air conditioning, and during the warmer months the only way to cool their homes is to open the windows. If the road is built close to these residences, the pollution from the traffic will enter their homes increasing their exposure and the potential associated health effects. The site inspection of an apartment on the 12<sup>th</sup> floor of the Estate at 120 Racecourse Road demonstrated to the Committee the reality of this issue.

Ms Yesuf (Submission 63) commented that opening the windows of her apartment on 120 Racecourse Road led to black marks on her walls from traffic (diesel) emissions and that this would only get worse with having heavy freight traffic even closer if the Project proceeded. Ms Yesuf stated that although the CIS stated that the EPA requirements were to be met, she did not think that they were adequate.

Mr Petit (Submission 109) raised concerns about the health effects of noise and that they hadn't been addressed in the CIS. Mr Petit provided a copy of the WHO Night Noise Guidelines for Europe which are based on protecting public health. In recent years evidence has accumulated regarding the health effects of environmental noise. Epidemiological studies have found that cardiovascular diseases are consistently associated with exposure to environmental noise. The WHO has released three reports on the health effects of environmental noise: *Guidelines for Community Noise* (1999), *Night Noise Guidelines for Europe* (2009) and the *Burden of Disease from Environmental Noise* (2011). In these documents the main health effects associated with environmental noise are:

- Cardiovascular disease;
- Cognitive impairment;
- Sleep disturbance;
- Tinnitus;
- Annoyance; and
- Hearing impairment.

As discussed in the WHO Night Noise Guidelines (Submission 109) epidemiological studies suggest a higher risk of cardiovascular diseases, including high blood pressure and myocardial infarction, in people chronically exposed to high levels of road or air traffic noise. Mr Petit raised concern about the lack of a night time noise standard in the Vic Roads Traffic Noise Policy. He requested that the health effects of noise be investigated as part of the approvals process for the Project and that sound attenuation measures be installed to ensure that noise levels did not exceed levels that endangered public health.

Concerns about sleep disturbance were raised by a number of submitters. Sleep disturbance is one of the most common complaints raised by noise exposed communities, and can have a major impact on health and quality of life (WHO (2009) part of Submission 109). Studies

have shown that noise affects sleep in terms of immediate effects (e.g. arousal responses, sleep stage changes, awakenings, body movements, total wake time, autonomic responses), after effects (e.g. sleepiness, daytime performance cognitive function deterioration) and long-term effects (e.g. self-reported chronic sleep disturbance). Mr Trippas (Submission 110) raised concerns about the noise from the Project creating sleep disturbance and in particular the impacts on the Debney's Park Housing Estate which is a particularly vulnerable community.

As discussed in the appendix to Submission 109, sufficient undisturbed sleep is necessary to maintain performance during the day, as well as for good health (WHO 2009). Humans recognise, evaluate and react to environmental sounds even when asleep. Although they are natural responses to noise, it is assumed that substantial increase in the number of these effects constitutes a health issue.

The CIS has considered noise in terms of amenity only and has ignored the potential public health issues associated with the traffic noise generated from the project. The proximity of the roads to residential areas, schools, kindergartens, child and aged care facilities increases the potential health risks posed by exposure to noise in the vulnerable groups.

The VicRoads Road Traffic Noise policy does not contain a night-time noise criteria. The daytime limits are based on minimising annoyance from traffic noise. These criteria were developed before there was a strong understanding of the health effects associated with road traffic noise. These criteria should be reviewed to reflect this understanding.

As with air quality, the final design of the Project needs to consider mitigation measures as well as optimising the alignment of the surface roads to minimise noise being experienced at night and at sensitive locations along the route. Measures need to be implemented to avoid sleep disturbance which may include the adoption of Project specific standards for night-time noise. Mitigation measures should be implemented in areas where schools, kindergartens and child care centres are located to minimise any impact on the cognitive development of children that may be impacted by noise from the Project.

### **10.8.5 Findings**

The Committee accepts that there is a significant body of new information on the health effects of air pollution that needs to be considered. The applicable Policies have not been updated to reflect this information in the air quality standards, and the policies are well overdue for review. One of the key scoping directions is that the impacts of air emissions from the Project be minimised. This is consistent with the aim of the SEPP (AQM) to drive continuous improvement in air quality.

Although the SEPP (AQM) is overdue for review, it is the statutory policy in Victoria for the management of air quality and applies to this Project. However, the qualitative parts of the SEPP (AQM) are focussed on avoidance and minimisation of emissions - not just meeting the standards in SEPP. In assessing compliance with SEPP (AQM) these issues need to be considered alongside meeting the standards as the minimum requirement.

While not a formal recommendation in the context of this assessment process, the Committee urges DEPI/EPA as a priority to undertake a review of the SEPP (AQM) and SEPP N1 to ensure that the standards contained in these policies are protective of public health.

Likewise, VicRoads should review the road traffic noise policy to include health based criteria, in particular night-time noise standards.

The Committee has recommended in Chapter 9 that a project specific night time noise criteria is warranted for the Project, given the likely traffic volumes and mix and the proximity of dense residential areas.

The Committee recommends that in the final design of the Project, the contractor must consider design elements, both in pollution control and alignment options (including the location of the ventilation stacks), to minimise air pollution levels in sensitive areas. In doing this, the impacts on public health will be minimised. It is further recommended that no playgrounds where young children frequent or formal active recreation areas be located under the elevated viaducts.

Truck movements and construction activities in residential areas should be kept to a minimum at night and if possible avoided, to avoid sleep disturbance for local residents.

## **10.9 Applicable Approvals**

As discussed in Chapter 3.3 of this report, a Works Approval under s19B of the EP Act is required for the tunnel ventilation system. The need for the Works Approval is triggered by the in-tunnel CO levels which exceed the limits under the *Scheduled Premises and Exemptions Regulations 2007*. Under the MTPF Act, it is the Minister for Planning who may issue the Works Approval.

Based on the reasoning and findings in the Chapter, the Committee recommends that the Works Approval for the tunnel ventilation system be issued, conditional on:

- Conducting further detailed air modelling assessment on the final design which includes moving the ventilation stacks east of Hoddle Street and the Hurstbridge/South Morang Railway Line.
- Including a mid-tunnel air intake in the final design.
- Adopting the CO in-tunnel air quality standards used in CityLink and EastLink for the Project.
- Making provision to retrofit pollution control equipment in the ventilation stacks for PM<sub>10</sub> and PM<sub>2.5</sub>.
- Requiring pollution control equipment if PM<sub>10</sub> or PM<sub>2.5</sub> levels are greater than 30% of the applicable air quality standard.
- Undertaking an air monitoring program in Clifton Hill and in the vicinity of the western stack for a period of 12 months prior to the tunnel opening and 12 months post opening. Repeat the monitoring 5 years post opening of the tunnel.

# 11 Cultural Heritage

## 11.1 Introduction

### 11.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(e) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to cultural heritage:

*Whether the impacts of the project on cultural heritage places have been appropriately addressed.*

The relevant applicable approvals for cultural heritage are:

- Permits under section 67 of the *Heritage Act* 1995 for the Melbourne General Cemetery (H1788), Cambridge Terrace (H1606), Royal Parade (H2198), Former Police Station complex (H1545) and the former College Church (HO394);
- Consent under section 129 of the *Heritage Act* 1995 for Yarra Bend Park (H7922-0142), Debney's Park East (H7822-0209), Royal Park (H7822-2311), West Melbourne Rubbish Tips – Dynon Road Tip (H7822-0312); and
- Planning scheme amendment under sections 8, 29 and 35 of the *Planning and Environment Act* 1987 to remove Heritage Overlay permit triggers from land within the Proposed Project Boundary in the Melbourne and Yarra Planning Schemes for Gold Street Precinct (HO321), Clifton Hill Western Precinct (HO317), North and West Melbourne Precinct (HO3), Parkville Precinct (HO4), Kensington Precinct (HO9) and Bridge (railing only) over Moonee Ponds Creek at Arden Street, Kensington (HO814).

Section 5.5 of the CIS noted that Section 49A of the *Aboriginal Heritage Act* 2006 requires a Cultural Heritage Management Plan (CHMP) to be prepared if a comprehensive impact statement is required under the MTPF Act. The preparation of the CHMP has been prepared separate to the CIS and is beyond the Committee's Terms of Reference.

### 11.1.2 Conclusion of the CIS

Chapter 9 of the CIS, 'Heritage' concluded that a number of heritage impacts have been identified. During construction, impacts would primarily be associated with the loss of heritage buildings. Archival recordings of any items to be removed for the project would be undertaken prior to demolition.

In relation to the potential for vibration impacts on heritage items, the CIS concluded that these would be managed through appropriate construction techniques.

The potential for subsurface disturbance of unknown archaeological items during construction was acknowledged:

*The potential for subsurface disturbance of unknown archaeological items during construction would need to be further investigated during the pre-construction phase through predictive archaeological modelling and the development of appropriate management techniques.*

In respect of impact on character, the CIS concluded:

*In the longer term, the presence of the East West Link – Eastern Section structures may have an impact on the character of heritage precincts along the alignment, such as the Gold Street, Clifton Hill Western and Kensington heritage precincts, or Royal Park (Parkville heritage precinct). The application of urban design principles would minimise long term visual impacts to these heritage precincts.*

*Future development at cleared sites, no longer required post-construction, would also need to consider the heritage values of adjacent heritage precincts or sites.*

The CIS noted that all heritage impacts would need to be considered further during detailed design of the Project.

### **11.1.3 Objectives and Performance Requirements**

The CIS evaluation objective (set by the Scoping Directions) for Cultural Heritage is:

*To provide appropriate protection for cultural heritage.*

There are five corresponding Cultural Heritage Performance Objectives in the CIS:

- *To minimise impacts on sites of Aboriginal cultural significance;*
- *To minimise impacts on sites of historical cultural significance;*
- *To minimise impacts on both known (identified) and unidentified archaeological historic sites and values;*
- *To protect structural integrity of known historic sites and values; and*
- *To record historical values of buildings and streetscapes or relocated/reused small structures if feasible that are disturbed by project works.*

An extensive list of Performance Requirements are specified in Chapter 9 of the CIS (Table 9-3) to meet these Performance Objectives. The CIS stated that it “*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”. The CIS noted that in addition to these requirements, other Performance Requirements, such as those relating to land use, vibration, and landscape and visual impacts, may contribute to minimising these impacts.

### **11.1.4 Cultural Heritage Issues**

The Committee heard cultural heritage evidence from the following experts:

- Mr Peter Lovell of Lovell Chen for the LMA;
- Ms Christina Dyson of the City of Melbourne for the City of Melbourne; and
- Mr Bryce Raworth of Bryce Raworth Pty Ltd for Yarra City Council.

At the request of the Committee, all experts met to discuss the relevant issues and determine points of agreement and dispute.

At the conclusion of the conclave and further discussions an ‘*Agreed Statement*’ (Document 8), was provided to the Committee.

Among the topics discussed and generally **agreed** by the experts at the conclave were the following:

- The assessment of heritage impacts of the Project is constrained by the lack of a final design;



- The landmark role of the Shot Tower should be considered in both the immediate and wider local contexts;
- As the CIS does not address post-construction planning controls for the proposed sidetrack area, there is potential for adverse impacts of future renewal in this area;
- Recording of heritage buildings to be demolished is an appropriate action;
- The identified significance of the former Box's Hair Curling works (Provans) as a contributory heritage place is accepted;
- The preferred methodology of the CIS would have been one that addressed the significance of Royal Park in accordance with the principles of the Burra Charter;
- Royal Park is at least of local significance and the 1984 Master Plan should form the basis of the approach to reinstatement of landscapes within Royal Park; and
- In terms of Royal Park, the river red gums on the south side of Elliott Avenue require review, the elms adjacent to Ross Straw Field should be retained and protected, and the Australian Native Garden is of significance and should be protected during construction.

Among the topics discussed at the conclave and generally **not agreed** by the experts were the following:

- The approach to risk assessment/modelling;
- The level of heritage impact on the loss of less mature trees in Royal Park;
- The impact of the realignment of the tram line in Royal Park; and
- The cultural heritage significance of Ross Straw Field in the context of the western portal.

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to cultural heritage, the Committee has grouped its assessment under the following headings:

- Sites of Historical Cultural Significance; and
- Applicable Approvals.

## **11.2 Sites of Historical Cultural Significance**

### **11.2.1 Introduction**

The parts of the Project area where cultural heritage is an issue are the areas around the Hoddle Street interchange and to its west, and Royal Park. Although the Melbourne General Cemetery and the Colleges associated with Melbourne University are on the alignment, because the Reference Project has the Project in-tunnel below these places, there are no impacts on these properties or places.

The CIS evaluation objective for cultural heritage is *“to provide appropriate protection for cultural heritage”*.

### **11.2.2 Key Issues**

The key issues with regard to cultural heritage are the impacts of the Reference Project on the Heritage Overlay Precincts to the north-west, north-east and south-west of the Hoddle Street/Eastern Freeway interchange, in particular the visual impacts on the Shot Tower on Alexandra Parade, the loss of contributory buildings in Bendigo Street and in the area of the

proposed sidetrack, including the former Box's Hair Curling Works building, and the impacts on Royal Park's landscape and vegetation due to both construction processes, such as cut and cover, and permanent works.

### **11.2.3 Submissions and Evidence**

Mr Tweedie called Mr Lovell who had prepared Technical Appendix G: East West Link Historical Heritage Assessment of the CIS. Mr Lovell addressed the Performance Requirement CH5 and made one recommendation, namely that a photographic record of the former Box's Hair Curling Works complex at 64 Alexandra Parade (now Provan's timber merchants) be undertaken and that a measured drawing for the original two-storey section of the works be prepared prior to demolition.

In other respects Mr Lovell stated that he had undertaken further detailed work in relation to Royal Park and had read all submissions to the Committee which were relevant to his area of expertise. He advised he had undertaken site visits to particular locations along the Project alignment. He prepared a detailed 'Response to Submissions' (Appendix C to his Statement) which responded to each Precinct and the impacts of the Reference Project on buildings, heritage precincts and sites, trees in Royal Park and Flemington Road, and Arden Street, and the Moonee Ponds Creek precinct.

Mr Lovell concluded that, with the exception of his advice regarding 64 Alexandra Parade, this further work did not cause him to materially change his opinions expressed in Technical Appendix G.

Mr Lovell did not consider the demolition of the dwellings on the east side of Bendigo Street affects the significance of the Heritage Overlay area (Gold Street Precinct HO321), although he acknowledged that the removal of these buildings, while a significant local intervention, was not a significant impact in the wider context. He stated that the proximity of the eastern part of the Hoddle Street flyover would not jeopardise the integrity of the Heritage Overlay area to the north (Clifton Hill Eastern Precinct HO316), although the ramp would be visible along Rutland Street.

Further, Mr Lovell did not consider the loss of part of the Heritage Overlay area (Clifton Hill Western Precinct HO317) north of Alexandra Parade for the construction of the temporary sidetrack to be of concern. He considered that with regard to the Shot Tower, the visual impacts of new structures could be controlled through design. He did accept during cross-examination, that there would be a 'tension' between the Shot Tower and the proposed tower which is part of the Hoddle Street flyover.

With respect to Performance Requirements, Mr Lovell relied on the UDF as the vehicle to manage impacts on heritage elements near the proposed Project.

In terms of Royal Park, Mr Lovell's opinion was that the Reference Project's associated works, while requiring loss of trees, realignment of the tramline, the use of cuttings and the proximity to Anzac Hall (the Urban Camp), did not 'fatally' affect the Park historically, and that the impact, when taken in the context of all of Royal Park and its component 'rooms' would be adverse but not fatal. He stated that extent of impact would depend on how the interventions were managed.

He considered that the Reference Project's impacts on the Ross Straw Field area did not represent a loss in heritage terms and there was no heritage status in the rail cutting.

In terms of the loss of 13 buildings (5 of which are graded) in Bent Street and within Heritage Overlay area HO9, Mr Lovell considered this not to be significant given the size of the area.

During cross-examination, Mr Lovell admitted that he did not recommend that any buildings not be demolished because of their heritage significance. He stated that no buildings were of sufficient significance to alter the Proposed Project Boundary and that he accepted the Proposed Project Boundary within Royal Park. He considered that the proposed works at Elliott Avenue can be mitigated over time by landscaping and that Royal Park is an evolving and dynamic landscape. He agreed that it would be preferable to not have to move the tram line, and that the trees in Flemington Road that would be removed can be reinstated.

In terms of Bendigo Street, Mr Lovell accepted that it would be better if the houses did not have to be demolished, in that the flyover ramp would impact the heritage precinct, but he said this would not marginalise the properties on the west side of the street.

Mr Tweedie called Mr Patrick. As discussed in Chapter 8, much of Mr Patrick's evidence centred around the landscape aspects of Royal Park. He did however, highlight that there is no pre-European settlement vegetation in Royal Park, that there are no trees subject to a Heritage Overlay in the Park, and he had not identified any trees worthy of individual heritage protection.

Mr Finanzio called Mr Raworth. In answering questions regarding heritage aspects of the Project, Mr Raworth agreed that in the context of the Local Planning Policy at Clause 22.03 (Landmarks and Tall Structures) which specifically nominates the Clocktower of Collingwood Town Hall as a landmark which should remain the principle built reference, the flyover would interrupt the existing view to the Collingwood Town Hall from Hoddle Street north of the proposed flyover.

Mr Pitt called Ms Dyson. Her evidence focused on the cultural and historic significance of Royal Park and was based on research carried out as part of a doctoral research.

Ms Dyson noted that the CIS methodology should have referred to the Burra Charter. She described the historic development of Royal Park and confirmed the importance of the 1984 Master Plan as a pivotal document in terms of the Park's recent and on-going development. She noted in particular the location of various tree groups and avenues which contribute to the Park's landscape value including those near the proposed Elliott Avenue works and on the north side of Ross Straw Field. She noted that Ross Straw Field was the first purpose-built baseball field in Australia.

Asked if the heritage values of Royal Park will be adequately protected, Ms Dyson considered that other options than the Reference Project could do this better, and stated:

*That for such a large infrastructure project which has the potential for major temporary and permanent adverse impacts on an aspect of Melbourne's and Victoria's cultural heritage, this approach [the methodology adopted in the preparation of the historical heritage assessment] [as it relates to Royal Park] in my professional opinion is inadequate and unjustifiably constrained.*

Mr Nigel Lewis (Submission 1406), architect and conservation consultant, presented material relating to the Shot Tower in Alexandra Parade and his concerns about the adverse heritage impact of the Project. He was concerned about the impact of the proposal on the values of the Heritage Overlay areas in Clifton Hill and Collingwood and the environmental values of the Yarra Bend Park.

The tower is listed on the Victorian Heritage Register (No. H0709) and is classified by the National Trust (B3798). It is, in Mr Lewis' opinion, not of local significance as stated by Mr Lovell on behalf of LMA, but is of "*global significance*" as it has the most distinctive design for a shot tower due to its scale, design and patterned brickwork. Mr Lewis cited two international experts who have visited the site, one of whom was impressed with the visual impact of the tower on the surrounding area and how it dominates views from many locations due to its isolated location on relatively flat ground.

Mr Lewis considered that it is imperative that the aesthetic and landmark values of this "*remarkable structure*" are not devalued by the Project. He indicated concern with the proposed loss of contributory buildings within Heritage Overlays, the "*massive visual impact*" of the Hoddle Street flyover, and the location of the eastern vent stack due to its proximity to the Shot Tower.

The Committee notes that the Shot Tower is listed in local planning policy at Clause 22.03 'Landmarks and Tall Structures' of the Yarra Planning Scheme as a landmark which should remain the principal built reference in its vicinity.

Mr Lewis considered that a specific geotechnical investigation is needed to ensure the stability of the Shot Tower.

Mr Lewis indicated concern with the proposed upgrade to the Eastern Freeway within Yarra Bend Park in terms of increased traffic including trucks, particularly at the Merri Creek bridge which is proposed to be widened potentially affecting the values of the environment at this 'sensitive location'.

#### **11.2.4 Discussion**

##### **(i) The Hoddle Street/Eastern Freeway area**

Experts called by the LMA found no heritage reasons to disagree with the Reference Project's proposed acquisition of contributory buildings to facilitate the construction of the Reference Project. They considered that the recording of buildings to be demolished would be an appropriate measure prior to demolition.

Other experts echoed Yarra Council's and the community's position that alternative designs for the Project should be explored to avoid the loss of contributory buildings and other buildings that are within Heritage Overlay Areas and the impacts on those Precincts.

The Shot Tower was seen by many submitters as being adversely affected by the presence of the Hoddle Street flyover and its tower, particularly in vistas from the east near and on the Eastern Freeway and the Hurstbridge/South Morang rail bridge and, to a lesser extent, from the west. It is noted that the Shot Tower is specifically listed in the Yarra Planning Scheme as a landmark and tall structure that should remain a visually dominant element of its surroundings.

**(ii) Royal Park**

The whole of Royal Park is covered by a Heritage Overlay (HO4) under the Melbourne Planning Scheme. While some buildings and places within the Park have individual overlays, none is directly affected by the Reference Project, although the Proposed Project Boundary is adjacent to Anzac Hall (the Urban Camp) (HO898).

There was much discussion regarding the relative importance of both the broad landscape of the Park and various stands of trees within the Park for their contributions to the cultural heritage of the place. Within this context, there was general agreement that the Park is an evolving entity in landscape terms and that the 1984 Master Plan was an agreed and acceptable mechanism to guide the Park's continued management and development.

It is evident that the impacts of the Project would be experienced most at the site of the Elliott Avenue works. The most significant impacts in this location are due to the following interventions: removal of trees and the consequential impact on views and the character of that part of the Park; the physical impact of the portals, excavations and roads on the connectivity between the Park's 'rooms'; and the isolation of areas of open space separated by roads and the tram line.

There was some acceptance that Royal Park had capacity to accommodate new elements within it and that these could be ameliorated by landscape and other treatments.

The extent of disturbance of the Park by construction activity is not possible to determine, as the method of construction and the extent of cut and cover as a means of building the tunnels is not explicit in the CIS, but is to be determined by the contractor.

**11.2.5 Findings**

The cultural heritage values of parts of Collingwood and Clifton Hill and Royal Park as well as some identified contributory buildings and areas covered by Heritage Overlays are to be affected by the Reference Project. Heritage buildings are to be demolished and the contribution of streetscapes to Heritage Overlay areas will be diminished. The valued landscape of Royal Park will be permanently affected.

The Committee accepts that a Project of the scale of East West Link is likely to have some impacts on places of cultural heritage, however, it considers that the proposed extent of intervention can and should be reduced.

The Committee considers that the Reference Project in the Hoddle Street area is unacceptable and that changes are warranted, not only on traffic grounds and visual landscape grounds, but also to reduce the impact on heritage places and values.

The Committee does not support the acquisition and demolition of property within the Clifton Hill Western Precinct (HO317) and the Gold Street Precinct (HO321), and recommends accordingly.

In particular, the Committee considers that the demolition of all properties on the east side of Bendigo Street will irrevocably diminish the heritage value and visual amenity of the street. It therefore considers that if the recommendation to abandon the Hoddle Street flyover is not accepted and demolition proceeds to allow this construction, the Proposed Project Boundary be extended to include all properties on the west side of Bendigo Street

and the south side of Hotham Street east of Bendigo Street and that these properties be removed from the Gold Street Heritage Overlay Precinct. This would allow owners of these properties to redevelop in a manner that responds to the changed streetscape environment and the visual and other impacts of the flyover.

The Committee does not support the above ground structures (apart from necessary overhead signs, lighting and sound barriers) at the Eastern Freeway/Hoddle Street interchange to preserve the visual integrity of the Shot Tower.

Should the recommendation to remove the sidetrack not be accepted, the Committee considers that further urban design guidelines be developed to ensure that the current level of residential amenity enjoyed by owners of properties abutting the boundary of the sidetrack acquisition area is not diminished by redevelopment in the sidetrack area.

Further, if there is to be any permanent intervention of the Project in Royal Park that may impact on the cultural heritage of the Park, the Committee recommends a comprehensive study be carried out to identify the specific impacts and to determine appropriate ameliorative measures and that the design of the Project is modified to minimise such impacts.

It recommends that that the design of any structure or works likely to impact the cultural heritage of Royal Park is consistent with the Urban Design Principles in Appendix F.

### **11.3 Applicable Approvals**

The Committee concludes that in relation to Part A, and the five heritage places listed in Table 3.3 of Chapter 3 of the CIS, permits should be granted as the proposed works relate only to tunnelling works at a minimum approximate depth of 20 metres.

The Committee concludes that in relation to Part A, and the two heritage places listed in Table 3.4 of Chapter 3 of the CIS, namely Yarra Bend Park and Royal Park, permits should be granted.

The Committee concludes that in relation to Part B, should this part of the Project proceed, permits for the two places listed in Table 3.4 of Chapter 3 of the CIS should be granted.

## 12 Surface and Ground Water

### 12.1 Introduction

#### 12.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(f) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to surface and ground waters:

*Whether the impacts of the project on surface and ground waters have been appropriately addressed.*

The applicable approval as listed in Schedule 1 of the MTPF Act with respect to surface water falls under the Victorian *Water Act 1989*. Section 67 of the *Water Act 1989* requires a licence to construct, alter, operate or decommission works on a waterway. This would be relevant to the widening of the Eastern Freeway crossing over Merri Creek as well as the construction of piers within Moonee Ponds Creek and elevated roadways above Moonee Ponds Creek.

The CIS stated that while no applicable approvals are required in relation to groundwater, the contractor would be required to comply with the relevant legislation, guidelines and policies governing these matters in Victoria.

#### 12.1.2 Conclusion of the CIS

Chapter 13 of the CIS, '*Surface Water*' concluded that good design, the application of best practice and compliance with regulatory requirements would minimise any significant surface water impact. No residual risks achieved a 'high' rating.

The CIS concluded that whilst there will be temporary impacts during construction on the Merri and Moonee Ponds Creeks, they should not be significant and the project offers the opportunity to restore and enhance waterways.

Chapter 14 of the CIS, '*Groundwater and contamination*' concluded that there would be some construction groundwater impacts in Precincts 1, 2 and 3. The most significant were said to be:

- Contaminated groundwater from the former gasworks site impacting on tunnel construction (Note: Contamination is dealt with in Chapter 14 of this report); and
- The potential 'damming' effect of the tunnel in Precinct 2.

The CIS noted that these impacts pose significant risks but are not uncommon in major urban tunnelling projects and can be managed through rigorous performance requirements.

#### 12.1.3 Objectives and Performance Requirements

The CIS evaluation objective (set by the Scoping Directions) for Surface and Ground Water is:

*To maintain the functions and values of affected waterways, floodplains and groundwater.*

There are nine corresponding Surface Water Performance Objectives in the CIS:

- *To maintain or improve existing surface water quality during operation and construction;*
- *To maintain existing levels of flood protection;*
- *To maintain flood plain storage;*
- *To maintain flow regime;*
- *To protect people and assets from flood waters in the tunnel;*
- *To maintain access to stormwater assets;*
- *To protect water quality and habitat in Merri Creek;*
- *To protect the bank stability of Merri Creek and Moonee Ponds Creek; and*
- *To protect the beneficial uses of air, land and water, and human ecological health, from the impacts of hazardous materials and dangerous goods.*

There are three corresponding Groundwater Performance Objectives in the CIS:

- *To protect beneficial uses of groundwater;*
- *To minimise changes to groundwater levels during operation and construction to manage mobilisation of contaminated groundwater; and*
- *To minimise impact on existing groundwater users.*

An extensive list of Performance Requirements are specified in Chapters 13 and 14 of the CIS (Tables 13-2 and 14-2) to meet these Performance Objectives. The CIS states that it “*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”.

#### **12.1.4 Surface and Ground Water Issues**

The Committee heard surface water evidence from the following experts:

- Mr Gavin Hay of GHD for the LMA on surface water;
- Mr Tim Anderson of GHD for the LMA on groundwater;
- Dr Peter Nadebaum of GHD for the LMA on contamination; and
- Associate Professor John Webb for the City of Yarra on groundwater and contaminated land (Professor Webb’s evidence was tabled but he was not called).

At the request of the Committee, all experts met to discuss the relevant issues and determine points of agreement and dispute. This conclave was held between Mr Anderson, Associate Professor Webb and Dr Nadebaum to discuss groundwater and contamination. The agreed conclave statement was tabled in the Hearing as Document 6.

The following topics were discussed and generally **agreed** by the experts at the groundwater conclave.

- There were some discrepancies in mapping and others maps and sections have been updated since the CIS was exhibited;
- The contractor will determine the construction method and will be bound by the performance requirements;
- There were a number of suggested updates to performance requirements and the CIS; it was not clear how these were to be addressed; and
- There were a number of agreed points on groundwater and tunnelling risk modification; where this led to changed performance requirements this was on an agreed basis



There were **no points of disagreement** on fact or contention in the groundwater conclave.

In addition, the Committee commissioned Dr Sandy Bennet to provide independent advice on groundwater, geotechnical and tunnelling issues. Dr Bennet provided an initial report (Document 47) and a final report post-Hearing (provided as Appendix G).

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to surface water and groundwater, the Committee has grouped its assessment under the following headings:

- Impacts on Surface Water;
- Impacts on Groundwater; and
- Applicable Approvals

## **12.2 Impacts on Surface Water**

### **12.2.1 Key Issues**

The CIS identified that two major waterways are located within the Proposed Project Boundary, Moonee Ponds Creek and Merri Creek. These waterways flow into the Yarra River (lower reaches), which in turn flows into Port Phillip Bay.

In his closing submission, Mr Morris for the LMA (document 525) identified the three main surface water issues that have arisen during the Hearing as:

- *First, the extent to which contaminated run-off from construction works or from new road surfaces could enter local waterways and reduce water quality;*
- *Second, the extent to which the construction of structures in and around the Moonee Ponds Creek will have the potential to impact upon the floodway capacity of the Creek; and*
- *Third, the impact of the Project on existing drainage infrastructure.*

### **12.2.2 Submissions and Evidence**

In his evidence, Mr Hay identified that in the order of 160 submissions to the CIS raised the issue of impacts on surface water to some degree, although many of these were concerned more in relation to amenity rather than surface water quality. Amenity, including along the Moonee Ponds Creek, is addressed in Chapter 8 of this report.

As a result of reviewing the submissions and technical reports, Mr Hay suggested a number of refinements to the exhibited Performance Requirements. These suggestions were shown in a tabled attachment to his evidence and were generally accepted by the LMA in putting forward its preferred version of the Performance Requirements in Document 525.

Mr Hay attached a detailed response to submissions to his evidence at Appendix C.

In the Hearing, Mr Hay (Document 66) provided comments on the Statement of Associate Professor John Webb who was called for the City of Yarra. He summarised the issues as follows:

1. *Given the controls in place there should be no deleterious impacts on surface water during construction.*

2. *Concern that the Performance Requirement SW3 does not specify in detail how the water will be treated other than in accordance with VicRoads Integrated Water Management Guidelines.*
3. *Vegetated retarding basins and constructed wetlands should be used to treat all roadway runoff before it enters the creek.*

In relation to these issues he provided the following response:

1. *Agree.*
2. *The intent of SW3 is to assist in achieving an integrated and appropriate water management outcome. The best method of achieving this may vary with location. The VicRoads Integrated Water Management Guidelines provide a contemporary framework to help achieve appropriate water management outcomes during the planning and design processes, as well as during construction, operation and maintenance activities. While inclusion of the guidelines helps to identify a number of the relevant legislative requirements, there are other Performance Requirements which identify the level of performance required, SW3 provides guidance on how this can be achieved.*
3. *Although suitable in some locations, I disagree with this suggestion. It is important to recognise that vegetated retarding basins and constructed wetlands are not the only treatment option, or the most suitable treatment option in all locations. The VicRoads Integrated Water Management Guidelines referenced in Performance Requirement SW3 include a range of Water Sensitive Road Design treatment elements which may be more appropriate in some circumstances for achieving the required treatment outcomes.*

Mr Hay noted in assumptions behind his evidence that due to the Project approach being taken, using a Reference Project:

*No detailed hydraulic modelling of the reference design has been undertaken at this point in time since from a hydraulic perspective there are many approaches and solutions.*

He went on to note that the detailed design would need to be undertaken when there is an actual design rather than now at the conceptual stage.

In his evidence for the City of Melbourne, Mr Shears highlighted a number of areas of concern in relation to surface water including, in summary:

- Lack of information about impacts on the Royal Park wetlands and lack of evidence regarding suggested low impacts;
- Lack of detail on how Moonee Ponds Creek may be improved; and
- Lack of regard to an integrated water cycle approach (he noted that the *Melbourne's Water Future* document encourages integrated water management).

He went on to highlight a number of areas where there may be adverse impacts, particularly in the Royal Park, Parkville West and Moonee Ponds Creek areas.

Other submitters, for example Mr Tony Smith from the Moonee Ponds Creek Coordinating Committee (Submission 1092), expressed the similar concern that given there is little information on the Project, it is difficult to determine what the surface water impacts may be.

In response in Document 66, Mr Hay did not disagree in principle that these are important issues, but submitted that they will be able to be managed through the detailed design process using the Performance Requirement framework.

The City of Melbourne made significant suggested changes to the Performance Requirements for surface water in Document 443. These changes primarily go to the interaction of the Project with the Council's stormwater infrastructure and assets.

The EPA's submission on surface water (Document 268) stated that the CIS identified and assessed a number of potential risk to surface water environments during construction and operation of the Project, including:

- *Roadway and stormwater run-off affecting surface water quality during operation;*
- *Contaminated surface water run-off affecting surface water quality during construction; and*
- *Sediment/chemical laden water from dewatering of surface structures affecting surface water quality during construction.*

The EPA noted that public submissions had commented on the potential for the surface water quality in Moonee Ponds Creek and Merri Creek to be impacted by surface and stormwater run-off. In relation to this, EPA advised that SEPP (Waters of Victoria) clauses 10(3) and 11(4) and Schedule F7 sets the framework for the protection and rehabilitation of Victoria's surface water environments; and defines environmental quality objectives and indicators that must be met.

Mr Metzeling for the EPA provided a submission on surface water in the Hearing (Document 268). Mr Metzeling outlined the regulatory framework for surface water, and in particular highlighted the SEPP (WoV), Yarra River Schedule F7 as setting the objectives for surface water for the project. The EPA supported the LMA's approach of modifying Performance Requirement SW1 to ensure the Project meets 'background' water quality in the Moonee Ponds and Merri Creek rather than a direct reference to the SEPP. This is because the water quality in these creeks is already in poor condition.

The Friends of Moonee Ponds Creek did not agree with this change in the Hearing and submitted that reference to the SEPP should remain in SW1. Similarly, Mr Hanna from the RATS group (Document 430) did not agree with this approach. He submitted that the "*bar is being set too low*" and the risks from poor quality stormwater and water pumped from the tunnel must be addressed. He further expressed concern about the potential for contaminated surface water runoff from the former Fitzroy Gasworks site.

Mr Metzeling commented on the discharge of 'wastewater' from the Project and outlined the various regulatory responses that may be required depending on whether this water is polluted or saline. The EPA's suggested amendment to Performance Requirements on these issues were accepted by the LMA.

In response to the issue of infrastructure impacts, Mr Morris noted that the design of the Project will need to accommodate hydraulic impacts of the elevated roadway and associated structures.

Referring to the expert evidence of Mr Hay, Mr Morris stated in closing submissions that a number of engineering techniques will be required and those that are recommended by Melbourne Water (SW7) are likely to improve the waterway through “... *reshaping, revegetation of creek banks, and the streamlining of existing structures*”.

Further, Mr Morris commented that “... *any large linear infrastructure project of this type and scale will potentially impact overland drainage flows*” and, as articulated in the Performance Requirements, any existing drainage infrastructure that is impacted by the Project will require relocation to the satisfaction of the relevant drainage authority (SW7), which is most likely to be Melbourne Water.

Regarding a Committee question at the Hearing about whether contaminated groundwater could enter and impact on the quality of discharges from the Alexandra Parade Main Drain, Mr Morris noted that due to the separation distances between the water-table and the drain, there is a low risk of this happening.

One of the issues raised in submissions at the Hearing was that of opportunities as opposed to impacts. In Section 13.1 of the CIS, a summary list of ‘*Potential benefits and opportunities*’ was provided to reduce surface water impacts and improve surface water outcomes. Mr Hay reflected on this issue in relation to improving the values of Moonee Ponds Creek in response to submissions in his evidence (for example see Page 16, response to submission 902).

Associate Professor Webb, in his evidence statement for the City of Yarra, identified the capture and reuse of stormwater as a potential ‘legacy’ outcome of the Project that should be investigated.

Mr Morris was clear in submissions however, that such opportunities delivered through the Project would be ancillary to project works and should not be taken to be an offer for the Project to deliver improvements beyond the project scope of works.

### **12.2.3 Discussion**

The Committee recommends elsewhere in this report that Part B of the Project should be set aside at this stage. Comments on Part B in this section are made on a ‘without prejudice’ basis to that recommendation in principle.

There is no doubt that there is significant potential for adverse impacts on surface water given the scale of the Project and the extent of works. If a similar project to that shown in the Reference Project is constructed the impact could be significant on:

- Water Authority assets (Melbourne Water and Local Government);
- Amenity from reductions in water quality and loss of community recreational assets such as the Royal Park Wetlands and Moonee Ponds Creek; and
- Environmental values of waterways.

The detailed impact assessment will need to wait until there is an actual project and final design to be considered. At that stage, serious consultation with Water Authorities and land managers will need to occur.

In principle, the Committee considers that the likely impacts should be able to be managed. Careful design and the implementation of management measures to avoid or minimise impacts will be required to be developed, funded, implemented and then monitored.

This next phase will occur under the guidance of the EMF and Performance Requirements, and based on the submissions received, the Committee considers there are a number of improvements that should be made.

**(i) Reference to the SEPP**

The Committee considers that in Performance Requirement SW1, the reference to the SEPP should be reinstated as exhibited. In practical terms, Mr Robinson for EPA suggested that the SEPP and 'background levels' may in practice be the same thing. If this is the case it is another argument for directly referencing the SEPP. In addition, the SEPP has separate statutory weight and thus should be complied with anyway.

**(ii) Recommendations from Local Government**

A number of Councils made recommendations to include more consultation as part of the Performance Requirements, and the Committee has generally adopted these.

The City of Melbourne in (Document 443), made extensive additional commentary on Performance Requirements SW3 and SW7. The Committee agrees in principle that some of these elements have some merit, in that they are more specific in outlining what may be required to meet the Performance Objectives. However some of them may equally apply to other Councils affected by the Project. The Committee has reviewed the intention of the Performance Requirements alterations and made changes as shown in Appendix E.

**(iii) Potential benefits and opportunities**

The Committee considers that a recurrent theme in the CIS process and Hearings has been a sense of lost opportunities where for a relatively small likely (comparative) cost, the impact of the Project may have been more effectively mitigated. This may be occurring through the tender process, but the Committee has no knowledge of any such program.

The Committee considers that the *Potential benefits and opportunities* contained in the CIS at Chapter 13.1 should be specifically referenced in the Performance Requirements. That is not to say they must be delivered, but they should form a more central part of the thinking around surface water improvements that could result from the Project.

**12.2.4 Findings**

The Committee concludes that the management of surface water runoff for the eventual Project should be able to be managed within the regulatory framework established by the SEPP (WoV) and the EMF and Performance Requirements for the Project. As there is no real project before the Committee, it is difficult to be absolutely conclusive on this point; but

rather the Committee considers that the range of surface water management issues likely to arise are not unheard of in major project implementation.

The Committee agrees with the submissions of the Friends of Moonee Ponds Creek and RATs and considers the reference to the SEPP (WoV) in Performance Requirement SW1 as exhibited is superior, as it ties the Project succinctly to the statutory instrument rather than a more nebulous 'background level', even if in time there is no difference in the outcome.

The Committee further considers that some of the other suggested changes to the Performance Requirements from submitters have merit and has recommended accordingly.

## **12.3 Impacts on Groundwater**

### **12.3.1 Key Issues**

Appendix M of the CIS, Groundwater Impact Assessment, identified the following issues related to Groundwater impacts:

- Contaminated Groundwater Plumes;
- Contaminated or saline groundwater inflow into the tunnel;
- 'Damming' of regional groundwater flow by the tunnel; and
- Dewatering that induces subsidence.

Other issues identified included managing potential acid sulfate soils; protection of groundwater resources for use; and groundwater dependent ecosystems.

### **12.3.2 Submissions and Evidence**

#### **(i) Linking Melbourne Authority**

The LMA called Mr Tim Anderson to give expert evidence on groundwater. He commented on further work that has been undertaken since preparation of the Technical Report. In doing so he reviewed the *East West Link Stage 1 Preliminary Hydrogeological Investigation, Final Interpretive Report* (SKM, October 2013).

This report presents the results of preliminary hydrogeological investigations into the project area, and was undertaken by SKM at the request of VicRoads. As noted in Mr Anderson's expert witness statement, the SKM report included the following key findings:

- *Estimates of groundwater inflows were provided using multiple (analytical) methods. Estimates of steady state, lined tunnel inflows were around 14 ML/yr (twin tunnels). Because these methods assumed a fully drained tunnel (and no progressive lining) over its entire length I consider that they are likely to overestimate potential inflows.*
- *Estimates of drawdown were documented, for both a fully drained tunnel over its entire length, and a lined tunnel. The radius of influence under a lined tunnel were generally less than 1 m at 50 m, and <0.3 m at 1,000 m.*
- *Estimates of impacts to existing groundwater users were made based on publicly available groundwater information. It was noted that many bores were of unknown use, and that groundwater salinity was likely to limit use for domestic applications.*

- *Estimates of impacts to waterways (Yarra River) were made using analytical approaches for both fully drained and lined tunnel conditions. Lined tunnel impacts were less than 1.5 L/s (depending upon the analytical method). The report concluded that stream flow impacts should be assessed using a numerical groundwater model.*
- *Estimates of impacts on groundwater dependent ecosystems were made, focussing on three waterways (Moonee Ponds Creek, Merri Creek and the Yarra River) and their associated riparian vegetation. The report concluded that drawdown impacts at these locations were less than 0.2 m. Further recommendations were made to assess whether mature trees at Royal Park were using groundwater, and if so, their sensitivity to groundwater change.*
- *Estimates of long term drawdown in the Moonee Ponds Creek suggested a low risk of oxidising Acid Sulphate Soils as the magnitude of drawdown (0.2 m) was within the natural seasonal variation.*
- *Estimates of subsidence, as a result of long term drawdown (of a lined tunnel) were made, however they were noted as being subject to significant uncertainty and unsuitable for design.*
- *The estimates recorded in the report that are based on a lined tunnel support the conclusions expressed in the Technical Report with respect to why the groundwater impacts associated with the project are manageable. In my view many of the estimates (drawdowns, groundwater inflows) recorded in the report are potentially over-stated, given the underlying assumption regarding fully drained conditions (during construction) over the entire tunnel length.*
- *Some uncertainty remains regarding the potential sensitivity of vegetation to drawdown, and also quantitative estimates of construction inflows and drawdown extents. It is for this reason that I consider that assessment of impacts to Royal Park vegetation is required when tunnel designs (and construction methods) are finalised.*

The objective of *East West Link Preliminary Assessment of Potential Inflows and Drawdowns – Drained Tunnel and Portals* (GHD, 2013) was to inform the Project specification, in relation to the potential groundwater inflows and the drawdown of the water table associated with ‘drained’ tunnels and excavations, west of Royal Parade and at the eastern (Hoddle Street) portal. The report provided an analysis of aquifer permeabilities, analytical estimation of drawdown and groundwater inflow of a ‘drained’ tunnel. The report stated that:

*... analytical modelling at the 6 sections indicated a range of radial influences (up to 1 km) and predicted consolidation settlements estimated as being less than 5 mm. The numerical modelling simulated approximately 1.2 km of ‘drained’ tunnel. Estimated inflows under these conditions were 0.3 L/s to 1 L/s per km.*

*Higher inflows could be expected during and shortly after construction. Risks of impact of drawdown settlement to infrastructure (e.g. Moonee Ponds Creek culvert) were low under long term inflow rates.*

*Long term drawdowns could extend to the Oak Street pond and Trin Warren Tam-Boore wetlands. The effect on these surface water features are within the limits of natural seasonal variation. Further assessment of impacts to Royal Park vegetation was recommended.*

Mr Anderson stated that the additional modelling demonstrates that the risk of impacts to the built environment and waterways is manageable, and made recommendations in the performance requirements regarding vegetation on groundwater.

The technical paper *Hutchinson and Lamb, Construction Management of the Hydrogeological Aspects of the Melbourne City Link Project, Tenth Australian Tunnelling Conference, Melbourne 1999* was published as part of a conference documented information regarding the CityLink project. The paper highlighted a number of groundwater related issues associated with CityLink, which Mr Anderson stated reinforce the chosen performance requirements as part of the CIS. Notable information is listed by Mr Anderson in his statement.

#### **(ii) The City of Yarra**

The City of Yarra commissioned expert evidence from Associate Professor John Webb of La Trobe University. He identified in his evidence a number of improvements that could be made to the Performance Requirements in the following groundwater areas:

- Prediction and modelling of the damming effect;
- Development and calibration of a groundwater monitoring program to verify the predictive model; and
- Modelling to determine whether subsidence is likely from dewatering.

Associate Professor Webb identified and discussed these issues in his report and provided commentary on the risk associated with each, suggesting that further work is needed to ensure project delivery. With the consensus of all parties, he was not called to give his evidence at the Hearing.

#### **(iii) The Environment Protection Authority**

In relation to impacts on groundwater, the EPA submitted at the Hearing on two key issues; the contamination from the former Fitzroy Gasworks site (addressed in Chapter 14) and the protection of the groundwater resource. Ms Julia Caluzzi for EPA presented on these issues (Document 270) and outlined the protections available through the SEPP (Groundwater of Victoria).

Ms Caluzzi identified the need for a groundwater management plan and baseline groundwater monitoring to establish groundwater conditions pre-construction.

#### **(iv) The Conclave Statement**

Mr Anderson, Associate Professor Webb and Dr Nadebaum participated in a Conclave on Groundwater (Document 6). There was significant agreement on key issues leading to recommended changes to the groundwater Performance Requirements which LMA accepted. These changes are included in Appendix E to this report.



In his closing submission for the LMA, Mr Morris stated that expert witnesses at the groundwater conclave reached a consensus that “... *the only outstanding matters of contention concerning the impacts of the Project upon groundwater, and of ground water upon the Project, have been appropriately addressed*”. The recommendations made by the experts, as incorporated in the conclave report, were incorporated by LMA in its revised Performance Requirements.

**(v) Dr Sandy Bennet**

The Committee retained Dr Sandy Bennet to advise it on elements of the Project including groundwater impacts. Dr Bennet reviewed the CIS and relevant expert material and provided his initial advice in Document 47 tabled in the Hearing. Final advice was provided to the Committee post-Hearing and this has been provided to the LMA and posted on the Committee’s website.

Dr Bennet’s report raised a number of issues with the Project conception and many of these are technical issues that will need to be addressed by the LMA and contractor in project detailed design.

At a high level, some of these concerns relating to groundwater are, in summary:

- There needs to be further work undertaken to understand ground conditions to input to sound project design rather than to monitor and model as mitigation measures;
- Further investigation of groundwater chemistry and quantity is critical at an early stage to allow the tunnel design and construction to respond to any issues; and
- A better understanding of any damming effect on groundwater is needed.

Dr Bennet considered that the revised groundwater Performance Requirements agreed in the Conclave were superior to those exhibited.

**(vi) Others submitters**

A number of other submitters expressed concern about groundwater protection and management. Mr Hanna from the RATS group highlighted that a treatment plant was constructed for injecting recycled water into groundwater for CityLink and that controversies arose when potable water was used.

Ms Gherardin (Submission 582) submitted that changes to groundwater as a result of the Project may lead to building structural damage.

**12.3.3 Discussion**

The tunnel component of the Project is the most critical, (and as advised by LMA, the most expensive) part of the Project. Ensuring that appropriate measurement and investigation of ground and groundwater conditions is undertaken prior to detailed design and construction is essential to minimise risk during both tunnel construction and operation.

Monitoring to find mistakes rather than designing to avoid them is not an acceptable approach for any project, let alone one of such significant cost to the Victorian community. The Committee was aware that even during its Hearings further investigations were ongoing into these elements. Given this, and the lack of an actual, as opposed to Reference, Project,

it has been difficult for the Committee to engage at a detailed technical level with the groundwater environment that may be encountered during construction.

The Committee is left to 'take it on trust' that the requisite level of investigation is being undertaken to ensure that risks to the community and the Project are effectively managed.

The Committee is given some level of comfort from the work of the experts in the field in refining the Performance Requirements around groundwater. However it is concerned that for a multi-billion dollar project, there was not a higher level of project definition provided to allow more detailed consideration of the likely ground conditions and risk.

#### **12.3.4 Findings**

Based on the minimal information received, the Committee concludes that technically, the tunnel component of the Project should be able to be achieved. However to minimise risk to both the community and the Project, a higher level of certainty is needed as to define the design and construction methods required to accommodate the specific groundwater environments to be encountered. The amended Performance Requirements should assist in providing some of this higher level of certainty.

The Committee has been much assisted by the work of Dr Bennet and commends his final report to the LMA and contractors.

#### **12.4 Applicable Approvals**

As outlined in Chapter 12.1.1, the Project requires approval under the Section 67 of the *Water Act 1989* for "works on a waterway" due to works affecting the Merri Creek and Moonee Ponds Creek.

The approach to the Water Act approval was provided in Appendix A.5 of the CIS. The CIS appears to suggest that provided a series of Performance Requirements and the EMF are adhered to around Land use and utility assets; Visual and landscape; Surface water and Biodiversity, the consent should be issued, although this is not explicit in Appendix A.5. There are no specific conditions sought to be applied to the consent.

The waterways manager, Melbourne Water, did not make a submission to the CIS either supporting or objecting to the application. This is disappointing as it leaves the Committee to determine the matter in the absence of their opinion. However the Committee considers it is entitled to assume that as there is no objection, this can be taken at some level as an implied consent.

The Committee has considered the impacts on Surface Water in Chapter 12.2 above and has concluded that the impacts should be able to be managed acceptably through Project delivery. This includes the works on waterways consent. The Committee has made recommendations in chief elsewhere in this report regarding elements of the project; particularly with regard to the setting aside of Part B.

There are no specific Applicable Approvals for Groundwater.

The Committee recommends that on a without prejudice basis, consent under Section 67 of the *Water Act 1989* for works on waterways in Merri Creek and Moonee Ponds Creek be issued.

## 13 Native Vegetation and Biodiversity

### 13.1 Introduction

#### 13.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(g) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to Native vegetation and Biodiversity:

*Whether the impacts of the project on native vegetation and biodiversity have been appropriately addressed.*

The relevant applicable approvals include:

- Planning Scheme Amendment to allow removal of native vegetation under sections 8, 29 and 35 of the *Planning and Environment Act 1987*.
- Request for comment from the Secretary of the Department of Environment and Primary Industries (DEPI) regarding the construction of dams, weirs or other structures in or across waterways which potentially interfere with the passage of fish or the quality of aquatic habitat under s66 of the *Conservation, Forests and Lands Act 1987*.

Other permits noted in the CIS that may be required (to be obtained by the contractor) relating to Native Vegetation and Biodiversity include:

- Management Authorisation under the *Wildlife Act 1975* for handling of fauna (such as pre-clearance of trees)
- A permit under the *Fisheries Act 1995* from DEPI if fish handling, capture or translocation is required (for example, the capture and release of entrapped fish in any in-stream construction structures such as coffer dams for pier construction).

The CIS noted that a referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was submitted to the Commonwealth Minister for the Environment in March 2013 (LMA 2013). The former Australian Government Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (now Department of Environment) subsequently determined that the proposed action (East West Link – Eastern Section) was not a controlled action. Consequently, the LMA determined that further consideration under the EPBC Act was not required, and the Committee does not need to take this further.

#### 13.1.2 Conclusion of the CIS

Chapter 15 of the CIS, 'Biodiversity' concluded that most potential impacts associated with the construction and operation of the project are assessed as negligible or low risk to flora, fauna and aquatic ecology values, and that there were no initial or residual risk ratings for the project above a 'medium' risk.

Potential ecological impacts highlighted include:

- *Removal of up to 3.57 hectares of remnant vegetation comprising four EVCs (up to 3.45 hectares in Royal Park and 0.12 hectares in the vicinity of Merri Creek).*

- *Removal of up to 93 scattered native trees in Royal Park (10 within the permanent works area and 83 within temporary works/construction laydown areas) and three scattered native trees in Precinct 5.*
- *Location of viaducts along Moonee Ponds Creek and over Trin Warren Tamboore Wetlands.*
- *Potential changes to channel structure could affect fish passage and water quality in Moonee Ponds Creek. These impacts would be localised, short-term and could be managed with the performance requirements. In the highly modified state of Moonee Ponds Creek, the impacts would be minor.*

In respect to impacts on biodiversity the CIS concludes that most biodiversity impacts of the project are likely to be associated with its construction and *“some of these impacts may be reduced with refinement of construction works areas”*.

*The project would not result in ecological impacts at a bioregional (or higher) scale and while vegetation and habitat loss would occur at a local precinct scale, this would be managed and offset in accordance with the Biodiversity assessment guidelines (DEPI 2013). There would be no net loss in the contribution made by native vegetation to Victoria's biodiversity.*

The CIS noted that the Project impacts on waterways and the wetlands system in Royal Park are expected to be localised and short-term, readily mitigated and unlikely to result in regional impacts. Impacts on ecological values within the Proposed Project Boundary are expected to be minimal due to a combination of the highly modified and disturbed state of the waterways and the performance requirements and other possible mitigation measures that could be implemented for the project.

The CIS concluded that the project would not have a significant impact on *Flora and Fauna Guarantee Act 1988* listed communities, species or habitats. It states that impacts on ecological values are expected to be minimal with the implementation of performance requirements and the incorporation of additional mitigation measures would reduce these impacts further.

### **13.1.3 Objectives and Performance Requirements**

The CIS evaluation objective (set by the Scoping Directions) for Native Vegetation and Biodiversity is:

*To maintain the values of remnant native vegetation and associated biodiversity.*

There are four corresponding Native Vegetation and Biodiversity Performance Objectives in the CIS:

- *To protect biodiversity values;*
- *To minimise impacts on Merri Creek;*
- *To minimise impacts on native vegetation and fauna habitat in Royal Park; and*
- *To manage interactions with aquatic fauna habitat in Moonee Ponds Creek where impacts are unavoidable.*

A list of Performance Requirements are specified in Chapter 15 of the CIS (Table 15-2) to meet these Performance Objectives. The CIS stated that it “*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”. The CIS noted that in addition to these requirements, other Performance Requirements, such as those relating to surface water, may contribute to the mitigation of these impacts.

#### **13.1.4 Native Vegetation and Biodiversity Issues**

The Committee heard Native vegetation and Biodiversity evidence from the following experts:

- Mr Brett Lane of Brett Lane and Associates Pty Ltd for the LMA on flora, fauna and aquatic ecology; and
- Mr Ian Shears, of the City of Melbourne for the City of Melbourne on water, vegetation and biodiversity.

At the request of the Committee, both experts met in a conclave to discuss the relevant issues and determine points of agreement and dispute.

At the conclusion of the conclave and following further discussions an ‘*Agreed Statement*’ (Document 28), was provided to the Committee.

The following topics were discussed and generally **agreed** by the experts at the conclave:

- Approach used to assess biodiversity impacts, and the use of the State Planning and Policy Framework (SPPF) native vegetation controls within a highly modified urban landscape, would not capture all impacts on biodiversity in the area;
- Large hollow trees, irrespective of provenance had high value as fauna habitat;
- White’s Skink and Trin-Warren Tam-boore wetlands had higher biodiversity value than some other areas of Royal Park, and that screening and light baffling were considered appropriate where light potentially impacts the White’s Skink habitat;
- The term ‘minimising’ in the Performance Requirements is a general term, not a quantitative measure, and more definition of which areas are priorities for retention was needed to ensure minimisation; and
- Habitat connectivity is an important consideration for biodiversity conservation, and the Project has the ability to limit future landscape scale connectivity along the Moonee Ponds Creek.

The following topics were discussed and generally **not agreed** by the experts at the conclave:

- The geographic scale and related threat status at which biodiversity was considered;
- Prioritisation of established indigenous trees species over other trees and vegetation;
- The level to which light spill from the Project would affect fauna within Royal Park, and therefore should be mitigated;
- The level of impact of the Project on the current landscape scale habitat connectivity; and
- The number of trees likely to be impacted by the Project within Royal Park.

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to Native vegetation and Biodiversity, the Committee has grouped its assessment under the following headings:

- Native Vegetation; and
- Fauna Species and Associated Habitats.

## 13.2 Impacts on Native Vegetation

### 13.2.1 Introduction

The Proposed Project Boundary encompasses approximately 204ha, which encompass two bioregions, Victorian Volcanic Plain and Gippsland Plain. The amount of remaining vegetation in each of these bioregions is 4.5% and 18% respectively.

The CIS stated that a total of 3.52ha of native vegetation, comprising four Ecological Vegetation Classes (EVCs) has been mapped within the Proposed Project Boundary, of which 3.4ha occurred within Royal Park, and 0.12ha occurred within the road reserve west of Merri Creek. These EVCs are all listed as Endangered within the bioregion in which they occur, and comprise:

- Escarpment Shrubland (EVC 895);
- Floodplain Riparian Woodland (EVC 56);
- Plains Grassy Woodland (EVC 55); and
- Grassy Woodland (EVC 175).

Further, of the 96 scattered native trees identified within the Proposed Project Boundary, 93 occurred within Royal Park, with 16 of these identified as Large Old Trees.

As stated previously the evaluation objective for native vegetation, as set out in the Scoping Directions is to *“maintain the values of remnant vegetation and associated biodiversity”*.

Where above-ground construction is proposed, impacts on native vegetation could occur in areas proposed for permanent works areas, and temporary lay down areas resulting in loss of patches of remnant vegetation and scattered trees. It is stated in the CIS that potential impacts to native vegetation may be reduced, and this is contingent on the final construction footprint and construction laydown and temporary works areas.

The CIS indicated that implementation of the Reference Project would require the removal of up to:

- 3.57ha of remnant vegetation comprising four EVCs that included:
  - Precinct 1 (Hoddle Street - Eastern Portal) - 0.12 ha in the vicinity of Merri Creek; and
  - Precinct 3 (Royal Park - Western Portal) - up to 3.45 ha in Royal Park.
- 96 scattered native trees:
  - Precinct 3 (Royal Park - Western Portal) - 93 scattered trees (11 within the permanent works area, and 82 within temporary works/construction laydown areas); and
  - Precinct 5 (Port Connection) – three scattered native trees.

The following overview provides a summary of potential impacts to native vegetation in Precincts 1, 3, 4 and 5. Project elements within the remaining Precincts (i.e. 2 and 6) are not likely to result in impacts to ecological values.

**(i) Precinct 1: Hoddle Street (Eastern Portal)**

The CIS stated that whilst vegetation within the freeway reserve has had a history of disturbance, areas adjacent to the existing carriageways contain native vegetation and fauna habitat including Escarpment Shrubland, Floodplain Riparian Woodland, and Plains Grassy Woodland.

The CIS stated that if the construction area in this Precinct is located between the existing lanes east of the current bridge structures, then no impact to remnant vegetation would occur in this precinct. If the Project footprint was required to extend to the northern and southern road reserves, the CIS identifies impacts on native vegetation in Precinct 1 as a total area of 0.12ha (0.11ha of Escarpment Shrubland, and 0.01ha Plains Grassy Woodland), the bioregional conservation status being 'Endangered' for both EVCs. There do not appear to be any scattered trees that require removal in this area.

**(ii) Precinct 3: Royal Park (Western Portal)**

Despite a long history of disturbance, ecological values are present within Precinct 3, and include:

- Grassy Woodland (with patches totalling 0.77ha likely to be remnant);
- Plains Grassy Woodland (an area of 2.43ha of remnant vegetation, which has been partly planted and is located near the rail line, an area of 0.13ha on the corner of Oak Street and Galada Avenue, and an area totalling 0.06ha on a drainage line near the Trin Warren Tam-boore wetlands); and
- Ninety-three scattered remnant trees located throughout the Proposed Project Boundary in Royal Park, consisting mainly of River Red-gum and Yellow Box, including large, medium and small trees. A combination of planted and remnant native vegetation (or vegetation that has colonised naturally) exists within this precinct.

The CIS notes that removal of scattered remnant and planted indigenous trees and hollow-bearing non-indigenous native trees would be required for removal in this precinct, and include:

- 0.59 habitat hectares (hha) of endangered native vegetation within the permanent works area;
- 0.95hha of endangered native vegetation within areas designated as laydown areas, temporary works or strata-tunnel works areas; and
- Eleven scattered native trees, and potentially another 82 scattered native trees (eight large, three medium, and 71 small), contingent upon the final construction footprint.

**(iii) Precinct 4 - CityLink**

This Precinct does not include removal of any native vegetation *per se*, and discussion is therefore focussed on the impacts to fauna habitat (See Chapter 13.3).

**(iv) Precinct 5 - Port Connection**

In Precinct 5, the Project would require the removal of three scattered native trees on the banks of the Moonee Ponds Creek. The trees appear to have colonised naturally and were identified as River Red-gum and Swamp Gum, and were designated as Small trees (i.e. 23-40

cm - Diameter Breast Height (DBH)). Discussion of potential impacts in this Precinct is focussed on the fauna habitat values (See Chapter 13.3).

### 13.2.2 Key Issues

The key issues considered include:

- Whether the extent of impacts to native vegetation is justified;
- Whether the methodology used to define the vegetation and floral diversity, to calculate the potential offset requirements, and the use of the SPPF was appropriate; and
- Whether the Performance Requirements for Native Vegetation are adequate.

### 13.2.3 Submissions and Evidence

Each of the key issues outlined above, is discussed relevant to the two precincts in which native vegetation is to be removed. Discussion relevant to Precincts 4 and 5 is presented in Chapter 13.3, as impacts are more relevant to fauna habitat values.

#### (i) Whether the extent of impacts to native vegetation is justified

##### Precinct 1 – Eastern Portal

Neither expert witness made comments related to this matter. Several submissions mentioned potential impacts to the Merri Creek, but comments focussed on impacts to fauna and associated habitats.

The CIS notes that if construction works are located between the existing lanes where there are insignificant ecological values, then no impact to remnant vegetation would occur in this precinct. If the project footprint was required to extend to the northern and southern road reserves, impacts on native vegetation in Precinct 1 will affect a total area of 0.12ha of EVCs Endangered within the relevant Bioregion.

##### Precinct 3 – Royal Park (Western Portal)

Mr Shears made extensive comment regarding the excessive amount of clearance of vegetation proposed in Royal Park, and stated that:

*Fragmentation and devastation of this remarkable asset will result in the following impacts:*

- *Specifically the loss of indigenous River Red-gums ... would create a permanent impact across the landscape;*
- *..*
- *Royal Park contains the only remnant Grassy Woodland (EVC 175) remaining in the City of Melbourne;*
- *..*
- *This potential loss of existing future vegetation will greatly impact flora and fauna species inhabiting the area ...*

Mr Lane did not make specific comments as to whether the extent of native vegetation clearance was justified, confining his comments to a critique of the assessment methodology according to legislative requirements.



Both the Cities of Yarra (Document 206) and Melbourne (Document 103), and the Combined Community Group's (CCG) submission (Document 386) from the Royal Park Protection Group/Protectors of Public Lands Victoria, all stated that impacts of the Project on Royal Park were unacceptable, and that the area required for laydown and works areas should be minimised, and sensitive areas must be avoided.

Specifically, the City of Melbourne stated in its submissions that the Reference Project and CIS failed to adequately recognise the range of important community values associated with and embodied in Royal Park, including Biodiversity values; and the impact on Royal Park of both the Reference Project and the design put forward by Mr Higgs (Document 109) was unacceptable.

Further, in relation to the proposed works, the City of Yarra stated in its submissions that:

- *The potential negative impacts of any future project fall broadly into the following categories ...;*
- *The destruction and alteration of important parkland ...;*
- *In relation to the Elliot Avenue interchange and the effect on Royal Park, looking at the impact of the reference project as designed, the only conclusion that can be drawn is that the impact of an interchange which involves interference in the middle of Royal Park at the scale proposed is clearly unacceptable;*
- *Even if a road project like East West link should have an exit in this general location (a view obviously shared by LMA but which is not accepted by any of the Councils or Eddington) it does not necessarily follow that the reference project design appropriately addresses the impacts of such a project; and*
- *There is no evidence before the Committee that the reference project design or location is the only feasible or alternative location or design.*

The CCG submission stated:

- *The impacts of stripping Royal Park of over 5,000 trees, and constructing the tunnels using the cut and cover method will be evident in Royal Park for the next 15-20 years (Closing submission Hearing Document 523); and*
- *that there is no justification afforded in the CIS, other than general statements about construction needs, to the large amount of land needed in Royal Park during construction (i.e. Why the large section of land to the north of the State Netball and Hockey Centre?, Why does the LMA need the surface of Royal Park to the east of Elliott Avenue if it is to be tunnelled, Why does it need all of Ross Straw Field and the wetlands?).*

Many submissions from the public made comment regarding the extent of impact to vegetation within Royal Park, a large proportion of which were concerned about the extent of impact to native vegetation from the temporary works areas.

The following statements were noted in proforma submissions:

*The Large scale removal of mature trees and the removal of wetlands and open space in Royal Park, on the Merri Creek/Moonee Ponds Creek and from parks along City Link, are unacceptable in terms of destruction of native vegetation, habitat and biodiversity loss.*

*A large swath of native vegetation is scheduled for destruction in Royal Park and nearby areas; loss of 5000 trees, including many mature and historic trees, destruction of important native vegetation in the Upfield rail line corridor, overshadowing of the invaluable wetlands water recycling area and reservations and adjacent parkland along the Moonee Ponds Creek.*

**(ii) Whether the methodology used to define the vegetation and floral diversity, to calculate the potential offset requirements, and the use of the SPPF was appropriate**

Mr Shears (in relation to the CIS's assessment of urban ecosystems and biodiversity and to the Terms of Reference, 2 (7) (g) - whether the impacts of the project on native vegetation and biodiversity have been appropriately addressed), stated that the *"impact of the Reference Design for the Project on the mature tree canopy, vegetation species diversity and habitat provision in Royal Park are highly critical"*. In summary, he stated that *"use of the Native Vegetation Framework is not appropriate to assess the 'true' vegetation impacts of this project"*.

Mr Shears argued that the statement in the CIS that concludes *"the project area generally contains no significant ecological value"*, does not reflect the consequences the Project will have at the local scale. Further he went on to say that *"no consideration was given to the significant contribution that the trees within the Proposed Project Boundary make to the city through their amenity value, the provision of ecosystem services and mitigation of the urban heat island effect"*. Further Mr Shears noted *"the CIS refers to only 2 species listed under the FFG Act, the Swift Parrot and the Grey-headed Flying Fox, and states that this is not an adequate assessment as there is a greater diversity of other species inhabiting the area"*.

Mr Shears noted that ecological surveys had been undertaken by the City of Melbourne, and these have included some 152 species, of which 59 species listed under the migratory list of the EPBC Act, and six listed under the FFG Act.

Mr Shears argued that in relation to potential areas of adverse impact, that the *"remnant vegetation within Royal Park is highly significant, particularly at a local level, and that accordingly the use of the NVF significantly understates the impacts of the reference design on vegetation cover"*. Mr Shears stated that *"the CIS indicates that less than 100 trees will be impacted, in contrast to the 4,713 trees identified through the City Of Melbourne mapping for the reference design"*. Mr Lane argued that the effort put to collection of data in the field was considered sufficient, both in length and seasonality, to ascertain the extent of vegetation communities and fauna habitats associated with the Project. Although he noted that not all threatened flora species listed in the Parsons Brinckerhoff (PB) report (2013) would have been flowering in October, he considered it unlikely that any threatened flora species would occur within the project alignment. This summation was based on the lack of suitable habitat and the high levels of public access and degraded nature of any remnant areas. He stated that the assessment was adequate to document the EVCs, to perform habitat hectare assessments, to document scattered trees and to assess habitats for the likelihood of occurrence of threatened species.

Mr Shears raised the issue of monetary compensation for the loss of amenity associated with tree removal, in particular in relation to the *City of Melbourne's Tree Retention and Removal Policy 2012*. This issue is addressed in Chapter 8.

Mr Lane documented the following points of disagreement in the CIS with regard to the vegetation assessment methodology. He noted several additional treed areas containing native vegetation were identified and mapped, although these were not considered to include remnant native vegetation (p9, Mr Lane evidence statement). He also noted that the calculation of offsets in the CIS was undertaken according to the approach detailed in *Victoria's Native Vegetation Management: A Framework for Action* (DNRE, 2002). Since exhibition of the CIS the approach to quantification of impacts to native vegetation is assessed according to the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (DEPI, 2013).

In Mr Lane's evidence, he stated that the proportion of the area that supported remnant or revegetated vegetation and fauna habitats is limited, with just 7.722ha classified as native vegetation in accordance with the *Biodiversity Assessment Guidelines* (BAGs) (DEPI 2013). He also stated that in order to calculate the degree of offsets required for removal of native vegetation, the definitions provided in Clause 52.17 of the planning scheme were utilised, whereby a permit is required to remove, destroy or lop native vegetation unless an exemption under the clause applies. Planted vegetation is exempt from this permit requirement where such vegetation has been planted for aesthetic or amenity purposes, unless public funding was provided to plant or manage the native vegetation, "*and the terms of the funding did not anticipate removal or harvesting of the vegetation*"(Clause 52.17, *Table of exemptions*).

This particular matter was addressed by Mr Lane with specific regard to consistency in the classification of native vegetation as amenity planting versus revegetation. The approach that was adopted in this reassessment was that, consistent with Clause 52.17, any planted native vegetation that is locally indigenous, where not planted for amenity, and funded by the public should be treated as native vegetation. Further in a relatively conservative approach, it was assumed by Mr Lane that specific sections of Royal Park had been revegetated for specific purposes (i.e. almost all vegetation either side of the 'grass circle' in Royal Park), was planted for purposes of conservation, based on the predominantly indigenous plantings using species from the pre-European vegetation types, including canopy, shrub, and grassy ground-cover layers.

Mr Lane also undertook a revision of the designation of habitat zones within the Project area prepared in the CIS, and surmised that the original assessment in the CIS required refinement.

He considered that the treed and fringing vegetation around the perimeter of the Trin Warren Tam-boore wetlands should be considered as remnant patches of native vegetation in accordance with the BAGs (DEPI 2013). He stated that this vegetation comprised woody species including River Red-gum, Black Wattle, and Sweet Bursaria, and understorey species including Spiny-headed Mat-rush, Flax Lily and Kangaroo Grass, as well as vegetation that fringed the wetlands such as Tangled Lignum, rushes and sedges, Common Tussock-grass, Knobby Club Rush. It did not include aquatic vegetation as this was not thought to have

been present in the area prior to pre-European settlement, and therefore would not meet the definition of a remnant patch.

A revised tree inventory was presented by Mr Lane (143 tree count (Mr Lane) compared with 114 tree count (CIS)). This was produced as a result of his identification during a further field assessment of several errors in the original inventory. Errors included:

- Exclusion of several trees based on the exclusion criteria mentioned above;
- Misidentification of tree species; and
- Differences in determination of size class of trees.

Having completed his further assessment, Mr Lane concluded that:

- The survey effort was appropriate to ascertain the extent of vegetation communities and fauna habitats in the Proposed Project Boundary and was sufficient to make an appropriate assessment on the suitability of habitats for threatened flora and fauna in the available data bases;
- The native vegetation assessment, including the mapping of the remnant patches and scattered trees, and habitat hectare assessment undertaken in the CIS was incomplete, but had now been addressed by the additional work he has undertaken as presented in his evidence statement; and
- A small number of threatened wetland species were not considered in the assessment, but have been included in his evidence statement and that potential impacts on them were not considered to be significant.

Mr Lane summarised a number of submissions, and made comment on their claims.

In response to the submission from Dr and Mr White (Submission 372), Mr Lane noted the presence of a remnant grassland patch adjacent to Oak Street, and that this area was not recognised in the CIS. Mr Lane agreed with the CIS that this area was a patch of remnant native vegetation of Plains Grassy Woodland (EVC 55), and that the patch was now in a state where it comprised a derived grassland habitat, due to the removal of trees in the past. He agreed that the population of Pink Bindweed *“in the submission, constitutes a record of a common grassland species, and therefore is not subject to the controls that protect threatened species, and therefore does not require further consideration”*.

In response to the submission on behalf of the Friends of Royal Park (Submission 396), Mr Lane noted the presence of eight regionally significant plant species that occur in the remnant Grassy Woodland vegetation in Royal Park west. Mr Lane stated that none of these species are listed at the State or Commonwealth level, and therefore the occurrence of these species was not subject to the controls that protect species threatened under Commonwealth or State legislation or policy, and therefore did not require further consideration.

Mr Lane largely dismissed the concerns expressed in the submission by a collective of scientists from the University of Melbourne by Dr Williams (Submission 504), that noted the presence of an EPBC Act Listed ecological community within the Project area. Mr Lane stated that the matter of EPBC listed Vegetation communities had been dealt with in a previous section of the evidence statement. Further, Mr Lane acknowledges that the vegetation subject of the submission, consisted of Plains Grassy Woodland (EVC 55), but that the patch fell below the minimum patch threshold of 0.5ha for classification as the listed

ecological community, as stipulated in the listing advice (Threatened Species Scientific Committee 2008).

The submission of on behalf of the Friends of Moonee Ponds Creek (Submission 528) noted that there were five additional River Red-gums that had not been included in the CIS assessment, and had therefore not been included in Mr Lane's evidence. Mr Lane made the recommendation *"that these trees be surveyed by an ecologist to determine whether they should be included in the final assessment of native vegetation for the Project"*.

In respect of the submission by Ms Ervin-Ward (Submission 592) that noted the presence of a significant grassland area in the Royal Park Grass circle, Mr Lane noted that the area comprised almost exclusively introduced grasses. He argued that this did not therefore constitute significant grassland, and as such did not require further consideration.

Mr Shears considered that the approach to biodiversity assessment used in the CIS, and by Mr Lane, was not adequate to encompass the impacts to biodiversity in Royal Park. Mr Lane countered this by stating that impacts to biodiversity were assessed in line *"with the mandated approaches of the applicable state planning framework native vegetation planning controls and state and national biodiversity legislation that apply to threatened species and communities in Victoria"*. Both agreed that the methodology and approach used to assess biodiversity impacts was different, that Mr Lane *"used an approach that focussed attention on threatened species, and their conservation status in the Project area and on assessable native vegetation as defined in the State Planning Policy Framework for mapping and offset calculation purposes"*. Mr Shears however, considered biodiversity to *"equate to the sum of all species that play a crucial role of ecosystem services"*, which both parties agreed was a correct definition.

Mr Shears believed that applying the SPPF to assessment of native vegetation did not reflect contemporary values of all vegetation, capture all vegetation impacts or provide offsets for the other types of vegetation to be impacted by the Project (i.e. small trees, shrubs, planted non-indigenous trees, planted introduced species, amenity trees). Mr Lane disagreed with this view, and stated that the method objectively determined offsets for native vegetation removal and that this included scattered trees, as well as indigenous small trees and shrubs as offsets were required for the removal of a 'habitat zone' or remnant patch of native vegetation, by way of the habitat hectare offset target.

Notably the submission from scientists from the University of Melbourne, discussed above, also stated their concern *"that the loss of remnant vegetation in Royal Park is only considered at a bioregional scale, given the extremely limited amount of remnant vegetation in inner Melbourne the scale of assessment in the CIS is inappropriate. In extremely fragmented landscapes such as urban Melbourne, the impacts of the loss of even small natural areas on the cities biodiversity will be magnified"*. Ms Nataprawira (Submitter 413) made a presentation to the Committee (Document 457) that made specific reference to this matter, stating that *"the evaluation tool fails to take into account the value of this ecosystem to the thousands of people who might benefit from its proximity. To People who live close to Royal Park, this EVC is worthy of preservation because it is the only intact remnant of our local vegetation"*. The Friends of Royal Park made a submission (Document 326) that stated that the remnant sited within Royal Park acted as *"important core area for increasing*

*indigenous flora and fauna in Royal Park, for building plant resilience and for providing biolink connectivity”.*

Mr Lane and Mr Shears disagreed over the number of trees recorded in the CIS. Mr Lane identified 144 scattered trees (i.e. indigenous canopy species with a diameter at 1.3m above the ground (Diameter at Breast Height (DBH)), 0.25 times or greater than the large tree DBH defined in the relevant EVC benchmark that were not planted for amenity purposes. Mr Shears in utilising the same EVC benchmark identified at least 214 scattered trees, a number that was not reviewed by Mr Lane. Mr Shears indicated that the City of Melbourne’s tree database included over 5,000 other trees within the Project area and that impact on all trees needed to be considered.

The City of Melbourne (Submission 902) stated that the CIS significantly under-represented the number of trees that would be removed for the Project. This was reiterated in the submissions put by Mr Pitt during the hearing. Mr Lane noted that whilst he had made some refinement of the numbers presented in the CIS, the far greater magnitude of the difference in numbers of trees to be impacted between the CIS and the City of Melbourne assessments were due to a completely different method to assess tree value being used by the City of Melbourne.

Ms Derriman (Submissions 667) and Mr Lance (Submission 746), commented that the survey duration and timing was inadequate to thoroughly assess the potential impacts of the Project. Many submissions, including that from Ms Clarke (Submission 259) noted that the calculation of losses of native vegetation associated with the project could not be accurately determined until the construction methods and works areas were determined.

A proforma submission received from 14 parties, stated that the CIS erroneously stated there would be no net loss in the contribution made by native vegetation to Victoria’s biodiversity.

### **(iii) Whether the Performance Requirements for Native Vegetation are adequate**

In their agreed conclave statement, Mr Lane and Mr Shears agreed that the use of the term ‘minimising’ in the performance requirements was not a quantitative measure and more definition of which areas were priorities for retention was needed to ensure minimisation.

However, they disagreed with respect to Performance Requirement B4, whereby Mr Lane stated that priority should be placed on established indigenous tree species, whilst Mr Shears believed that all trees should be given the same priority.

Mr Lane recommended changes to the performance requirements but these broadly relate to fauna habitat values and therefore are discussed in Chapter 13.3.3.

The City of Yarra requested many revisions to the Performance Requirements, namely to replace the term ‘minimise’ with ‘avoid’. The LMA agreed to some amendments to the Performance Requirements, and these are shown in Appendix E.

### 13.2.4 Discussion

**(i) Whether the extent of impacts to native vegetation is justified (i.e. did the Project avoid, and minimise impacts to native vegetation)**

All losses of native vegetation associated with the Project occur within Location A, as defined in the BAGs (DEPI 2013). According to the BAGs, this dictates that the Project would be assessed as a moderate risk pathway application, for which the LMA would need to demonstrate *“whether reasonable steps have been undertaken to ensure that impacts of the proposed removal of native vegetation on biodiversity have been minimised. These steps should have regard to the contribution to biodiversity made by the native vegetation to be removed and the native vegetation to be retained”* (DEPI 2013).

Consideration of whether the extent of impact to native vegetation in Royal Park is justified requires consideration of the following:

- The alternative locations/routes looked at prior to selection of a route that resulted in an alignment through Royal Park; and
- The extent of the footprint within Royal Park.

As discussed in Chapter 2, three broad corridors for this Project were identified as part of the options analysis undertaken for the business case, and were evaluated against goals for the Project that included to:

- *Facilitate development of an integrated and efficient transport network;*
- *Achieve an economic and financially viable solution;*
- *Protect natural and cultural resources and enhance the environment; and*
- *Support sustainable communities and land use patterns.*

Section 4.1 of the CIS gives a very high level description of the justification for selection of the Alexandra Parade Corridor. However it is not clear to what extent the protection of natural resources or enhancement of the natural environment were considered in the determination of this preferred corridor, and thus the Reference Project.

The CIS did however make clear that within the Proposed Project Boundary, the majority of native vegetation that would potentially be impacted occurred within Precinct 3, in Royal Park.

In relation to the footprint of the Project in Royal Park, there were two main issues that will determine the extent of impacts to native vegetation:

- The existence, design, and location of the Elliott Avenue interchange and the Western portals; and
- The proposed location and extent of both the permanent and temporary works areas during the construction period.

In relation to the Elliott Avenue interchange area, according to the Reference Project, the Project would impact around 8 to 10 Medium to Large Old Trees, and around 60 Small Trees, as well as another non-indigenous but hollow-bearing trees. There was extensive debate and evidence presented regarding the design of this element. The debate focussed on whether the interchange was required, as well as the design and location. The degree to which the removal of native vegetation can be avoided will largely depend on the location

and final design of this element. In the CIS, calculations associated with elements such as the Elliott Avenue Interchange, are presented according to the *“Best case scenario – which assumed that all native vegetation within the areas marked as ‘permanent works’ would be removed (i.e. and represents a minimum loss of native vegetation)”*.

The factor that appears to have the greatest bearing on the amount of native vegetation removed according to the Reference Project, is the area required for temporary construction and laydown areas, termed in the CIS as the *“Worst case scenario – which assumed all native vegetation within the permanent works area as well as the laydown and temporary works areas will be removed”*.

In Royal Park, in relation to the extent of vegetation removal associated with permanent and temporary works areas, it is noted that 88% of the scattered trees proposed for removal are associated with temporary works areas. Only 11 trees are located in permanent works areas, the remaining 82 are located within temporary works areas.

There are obvious benefits of avoiding and or minimising impacts on any area that have ecological values. In areas that are purely required for temporary convenience of the Project (e.g., a construction laydown area) it is considered important to avoid and or at least minimise impacts on areas of ecological value. Such areas included in the project boundary that hold intrinsic ecological value and therefore fall into this category include the Grassy and Plains Grassy Woodland EVCs, the White’s Skink habitat and the Trin Warren Tam-boore wetlands.

The Committee recommends that the project should avoid the wetland areas and White

The extent of native vegetation to be cleared along Merri Creek is relatively small, and would only be required if the construction area could not be constrained to the area between the existing freeway lanes. If in the final design and determination of construction footprint, it is determined that this area is required then specific measures (i.e. a Construction Environmental Management Plan, and requirements under the *Conservation, Forests and Lands Act 1987*) should be implemented.

**(ii) Whether the methodology used to define the vegetation and floral diversity, to calculate the potential offset requirements, and the use of the SPPF was appropriate**

The Committee is of the view that the assessment related to native vegetation in the CIS was broadly undertaken in accordance with the relevant legislative requirements.

The Committee however, notes the points made by Mr Lane regarding the methodology and approach to the native vegetation assessment in the CIS and that his review revealed that the native vegetation assessment, including the mapping of the remnant patches and scattered trees, and habitat hectare assessment undertaken in the CIS was incomplete. The Committee acknowledges that Mr Lane addressed these matters in his review, and this was presented in his evidence, and that he recommended that an assessment of the five additional River Red-gums that had not been included in the CIS assessment, be surveyed by an ecologist to determine whether they should be included in the final assessment of native vegetation for the Project.



In any case, all parties, including the LMA, agreed that the calculation of offset requirements would need to be revisited upon determination of the final Project footprint.

**(iii) Whether the performance requirements for Native Vegetation are adequate**

The ability of the Performance Requirements to protect fauna species and associated habitats is closely aligned to the consideration of native vegetation. For this reason, discussion of these matters will be presented jointly in this part of the Report.

In relation to protection of native vegetation, suggested modifications to the Performance Requirements were put forward by several parties including Mr Patrick and Mr Lane, the City of Yarra, and the City of Melbourne.

The Committee has considered the Performance Requirements as put forward by the LMA, and also the suggested amendments, with the aim being to ensure that the performance objectives listed above are attained. The final recommended performance requirements are presented in Appendix E.

Specific reasons as to why suggested amendments are supported or otherwise are outlined below.

In relation to the Performance Requirements listed under B1 regarding *“fencing defined protected areas and no go zones along the banks of the Merri Creek and within Royal Park including protection of scattered native trees to prevent access during construction”*, the Committee does not see it as necessary to list all areas that are to be protected, but that in the final design layout all protected areas and no go zones are defined. Protected areas and no go zones may well include the Australian Native Garden, the remnant Grassy Woodland EVC, and the White’s Skink habitat site, but they may also include other areas. It will then be paramount that protected areas and no go zones are clearly identified in the Environmental Management Plans to be implemented by the LMA/Contractor.

The Committee agree with the recommendations from the City of Melbourne as below:

- Development and implementation of a Tree Management Plan for protected Trees based on the recommendations of *Australian Standard 4970-2009 Protection of Trees on Development*; and
- New and replacement plantings of indigenous plantings of indigenous vegetation in Royal Park, where practicable, is to use nursery stock of local provenance.

In relation to the proposed amendment, *“Cut and cover construction must not be used for the Main tunnel in Royal Park east of the Upfield Rail Line, and to the minimum level possible in the western area of Royal Park”*, the Committee has made comments regarding this matter in Chapter 6.

In relation to the City of Yarra suggestion regarding B1, the Committee disagreed with the suggested word change from *“Minimising”* to *“Avoiding footprint and surface disturbance of temporary and permanent works”*, as this is not achievable.

The following suggestions from the Yarra City Council are supported in part:

- To add *“Fencing should be to a standard agreed with the relevant land manager”* to Fencing of Protected areas dot point;

- Managing the spread and introduction of weeds and pathogens ... *“including through vehicle hygiene”*;
- Reinstating affected areas ...*“in consultation with local Council”*, although this can be combined with suggestions from the City of Melbourne regarding provenance of the source of plant stock for rehabilitation works.

In relation to B2, the City of Melbourne suggested the following change which was not supported by the Committee, *“The City of Melbourne must be compensated for the loss of any trees in accordance with Council’s tree amenity value assessments”*. As stated previously, this is something to be negotiated between the LMA and the City of Melbourne. The following changes are however supported by the Committee:

- Provide vegetation offsets ...*“The location of any offsets works should be as near as possible to the area where the loss has occurred”*; and
- Where works will result in loss or partial loss of the Trim Warren Tam-boore wetlands *“complex”*, provide a comparable wetland habitat to compensate for the loss.

The Committee agrees with the change to B2 from the City of Yarra, that *“Offsets must be defined before construction commences, and in consultation and to the satisfaction of local council”* (Note - this is now required according to the BAGs (DEPI 2013)).

In relation to B3, the Committee accepts the change put forward by Mr Lane that the design of *“project structures”*, instead of ‘bridge widening’, over Merri Creek *“and Moonee Ponds Creek”* to minimise additional shading of waterways and select appropriate species for vegetation planting along the waterways under new road structures”. This is now presented as B4 in the Performance Requirements.

In relation to the exhibited B4, the Committee accepts the change put forward by Mr Lane that:

- *Reflect that the Trin Warren Tam-Boore Wetlands and White’s Skink habitat at western end of tunnel are priorities for minimisation and therefore require the retention of at least 50% of each and reinstatement through offsetting (PowerPoint last slide);*

The City of Melbourne suggested a range of changes to the exhibited B4 in relation to the White’s Skink habitat. Apart from minimising the removal of habitat, the Committee does not accept these changes as they contain a level of detail inappropriate for the Performance Requirements.

The final suggested change *“All Flora and Fauna Guarantee Act listed wildlife recorded in Royal Park must be protected. A plan indicating how this will be achieved must be prepared to the satisfaction of the City Of Melbourne”*, is supported in principle, but the Committee suggests wording should be similar to Performance requirements for EPBC-listed species, (i.e. *“Minimising footprint and surface disturbance to foraging habitat for Swift Parrot and Grey-headed Flying-fox”*).

The following changes were suggested by the City of Yarra in relation to B4 (the Committee’s new B5), mostly involving the use of the term ‘avoid’ rather than ‘minimise’. The Committee has not accepted these suggestions.

- *Develop and implement measures to minimise avoid impacts on native vegetation and fauna habitat in Royal Park, including:*
  - *Temporary works and permanent structures to “avoid” removal of remnant vegetation in areas surrounding Upfield railway line and Trin Warren Tam-boore wetlands;*
  - *“Avoiding” the removal of aquatic habitat at Trin Warren Tam-Boore wetlands which requires the retention of at least 50% of the species and reinstatement through offsetting, and Merri Creek;*
  - *Temporary and permanent works to “avoid” removal of scattered remnant trees and non-indigenous hollow bearing trees throughout Royal Park, particularly around Elliott Avenue, avoiding the following trees: [insert list of trees];*
  - *“Avoiding” footprint and surface disturbance to foraging habitat for Swift Parrot and Grey-headed Flying-Fox;*
  - *“Avoiding” removal of habitat for White’s Skink which requires the retention of at least 50% of the species and reinstatement through offsetting; and*
  - *Establishing and maintaining appropriate screening and light baffling for the White’s Skink habitat.*

### **13.2.5 Findings**

The Committee considers the large construction footprint within the Proposed Project Boundary in Royal Park cannot be justified. The Elliott Avenue interchange should be designed to minimise the removal of native vegetation, particularly scattered trees that hold habitat value to fauna. The potential impacts associated of the Project on Merri Creek are acceptable if works are constrained to the central median of the Eastern Freeway.

The Committee is satisfied that the CIS has broadly addressed matters of native vegetation assessment, and considers that the evidence statement of Mr Lane advances the assessment. The evidence statement from Mr Lane provided proposed amendments to the approach used in the CIS, which the Committee agree should be adopted. The additional assessment undertaken by Mr Lane as part of his evidence should be used by the LMA and provided to the project contractor to be used as a key reference document.

In relation to the calculation of offsets, these should be revised based on:

- The updated approach outlined in the BAGs (DEPI 2013);
- The evidence of Mr Lane whereby offsets should be recalculated following the results of this revised assessment; and
- Following the development of a final development footprint.

Based on this revised assessment, consideration should be made of any flora species, or vegetation communities that may subsequently be affected.

The five additional scattered remnant River Red-gums between Racecourse Road and Macaulay Road on the western side of the Moonee Ponds Creek should be surveyed by an ecologist to determine whether they should be included in the final impact assessment of native vegetation for the Project.

In relation to the concerns raised by Dr Nick Williams from the University of Melbourne regarding the potentially incorrect botanical classification and description; this goes to the EPBC Act referral status of the project and is an issue more appropriately addressed with the Commonwealth Government. The LMA should consider discussing it further with Dr Williams and seeking further Commonwealth advice if necessary.

In regard to the biodiversity values of Royal Park, the Committee acknowledges that:

- Consistent with the latest approach to native vegetation removal applications, offsets should ensure that there is no net loss to the contribution made by native vegetation to the state's biodiversity; and
- While some fauna are likely to be displaced by the removal of trees with hollows, impacts on state and nationally threatened fauna are not considered to be significant.

The Committee considers the recommended Performance Requirements in Appendix E are adequate to address potential impacts on native vegetation.

### **13.3 Impacts on Fauna Species and Associated Habitats**

#### **13.3.1 Introduction**

The CIS stated that the area within the Proposed Project Boundary is a *“highly modified urban environment that for the majority of its length contains insignificant ecological values”*, and therefore offers limited values to native fauna and their associated habitat requirements.

However, the CIS further stated that *“three local areas support ecological values, albeit in a modified state, these areas being Royal Park, the Moonee Ponds and the Merri Creeks”*. The CIS mentioned the Trin Warren Tam-boore wetlands and stated that the wetlands provide habitat for a number of common native fauna species. The contribution that these areas make to fauna habitat values is discussed below.

The fauna species documented by GHD were presented in the Appendices to the CIS chapter. No FFG Act-listed fauna species were detected during the site assessments by PB (2013) or during the GHD site visit in June 2013.

The following overview provides a summary of potential impacts in each of the relevant precincts. The CIS states that these potential impacts may be reduced depending on the final construction footprint, and construction laydown and temporary works areas.

#### **(i) Precinct 1: Hoddle Street (Eastern Portal)**

If vegetation in this area were to be removed as discussed in Chapter 13.2, the CIS stated that the native vegetation in areas adjacent to existing carriageways contains fauna habitat, whilst vegetation within the median strip has insignificant ecological value. Table 7 of Technical Appendix O stated that habitat and foraging resources exist within the northern and southern road reserves in areas mapped within EVCs 895, 55 and 56. Wildlife habitat exists within these patches and would provide habitat for common urban-adapted native birds, reptiles and widespread native mammal species (i.e. Common Ringtail and Common Brushtail Possums). However, the CIS noted that removal of this habitat would be expected

to result in an insignificant loss of foraging habitat for the Swift Parrot and Grey-headed Flying-fox, which are listed under the FFG Act.

The CIS noted that Merri Creek provides in-stream habitat for a range of common and threatened aquatic mammals (platypus and native water rat), aquatic invertebrates, and fish resident species as well as those undertaking upstream or downstream migrations. It is an important tributary of the Yarra River, with connectivity to upstream reaches of the Yarra River important through this area as it presents habitat for migratory fish species, including several common (i.e. short-finned eel, several galaxias fish species).

The CIS also stated that areas of aquatic and riparian vegetation, under the existing freeway crossing of the Merri Creek are relatively denuded due to the shadowing effect of the overpass. The existing rock-beaching and the history of modification and urbanisation have reduced the diversity of in-stream habitat for fauna species. Water quality in Merri Creek is currently categorised as poor (Melbourne Water 2007).

#### **(ii) Precinct 3: Royal Park (Western Portal)**

Vegetation removal for this precinct is discussed in Chapter 13.2.1. The CIS stated that these impacts may result in loss of foraging habitat for the Victorian Temperate Woodland Bird Community in Royal Park, the Swift Parrot and the Grey-headed Flying-fox, which are all listed under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act).

The CIS stated that while Royal Park supports most of the remaining ecological values within the Proposed Project Boundary, it has been subjected to extensive human disturbance over the past 100 years (Talbot Shaw 2012).

Precinct 3 provides habitat for common urban adapted native birds and widespread common native mammal species. Hollow-bearing trees in this area provide diurnal or nocturnally active species (i.e. insectivorous bats, arboreal mammals and a range of bird species) with nesting and denning sites. The associated EVCs were discussed in Chapter 13.2. Of note is the:

- Remnant Grassy Woodland (EVC 175) within areas protected as White's Skink habitat and as small patches of remnant vegetation within Royal Park. A total of 1.15 ha is located within permanent works areas, with an additional 2 ha located in areas where the construction area requirements are yet to be determined. There were 16 Large Old Trees contained within patches of this EVC;

Removal of scattered trees is expected to result in a minor loss of foraging habitat for the Swift Parrot and Grey-headed Flying-fox, and avian species of the FFG-listed *Victorian Temperate Woodland Bird Community* within Royal Park.

The constructed Trin Warren Tam-boore wetlands are located in Precinct 3, the two ponds of which provide water bird habitat, and could support common frog species, and native and/or exotic fish species. The CIS states that should the Trin Warren Tam-boore wetlands be required for construction, a small number of bird species would be displaced to the nearest suitable habitats. It also states that during the operational phase, overhead structures would reduce light and rain penetration to parts of the wetland, which may result in a loss of vegetation cover, aquatic habitat and reduced water quality, impacting aquatic fauna.

**(iii) Precinct 4: (CityLink)**

The potential impacts to fauna habitat within this precinct are limited to those associated with the widening of the existing CityLink carriageways, and are similar to that described below for Precinct 5 in relation to potential impacts on the Moonee Ponds Creek.

**(iv) Precinct 5: (Port Connection)**

The CIS stated that road widening and the construction of the viaduct structure between Brunswick and Racecourse Roads could result in the reduction of available fauna habitat and foraging resources for common and threatened fauna species along Moonee Ponds Creek. The CIS noted that there is the potential to impact on water quality, and aquatic fauna/fish passage as a result of instream and/or over stream structures.

Moonee Ponds Creek is a highly modified urban creek, which is generally in very poor to moderate condition (PB 2013). However, it provides habitat for a range of common terrestrial and aquatic fauna species, including common water birds and frog species. The concrete lined section could provide passage for a number of migratory fish species, and the non-lined section could provide habitat for a range of freshwater fish species, and also act as a corridor for fish passage. A number of juvenile stages of native fish are likely to migrate upstream via the creek's vegetated and non-vegetated edges where flows are generally lower (Appendix D to Appendix O of CIS).

**13.3.2 Key Issues**

Key issues include:

- Whether potential impacts to these species, and their associated habitat values, particularly threatened fauna species been avoided as far as practicable;
- Whether the CIS adequately described the fauna species and associated habitats within the project area, and correctly identified threatened fauna species; and
- Whether the Performance Requirements protect fauna species and associated habitats.

**13.3.3 Evidence and Submissions****(i) Whether potential impacts to these species, and their associated habitat values, particularly threatened fauna species been well defined and avoided as far as practicable**

The following comments relate to the entire Project area.

Mr Shears stated the potential fragmentation of Royal Park by this Project will result in the following impacts to fauna and fauna habitats:

- Loss/reduction in canopy cover, specifically the loss of indigenous River Red-gums and other mature trees would take generations to repair, and the effects of soil profiles and future vegetation growth would create a permanent impact across the landscape;
- Reduced genetic diversity, value of local provenance native vegetation. Royal Park contains the only area of remnant grassy woodland EVC (EVC 175) remaining within the City of Melbourne;

- Reduced viability of habitat corridors for dispersal of fauna;
- Loss of fauna habitat for flora and fauna species, particularly the White's Skink; and
- Increased levels of light pollution in an area that currently has 'low levels' of illumination. Further the CIS has not considered the vast impact of light spill from the Project on nocturnal wildlife patterns.

In relation to the White's Skink, Mr Lane stated that the CIS, PB (2013) recognised the area as supporting a regionally significant population of the species, despite the fact that the species was not listed as threatened under any Commonwealth or state legislation or policy. He noted that the CIS identified the area that supports White's Skink habitat as a 'lay down area or temporary works' area, and that the species habitat is acknowledged although no discussion of impact to the population is provided. In his evidence, he states that based on the proposed works in the area of White's Skink habitat, it is considered that the population will be impacted negatively through a significant reduction in habitat area (minimum case) or possible total loss of habitat area, depending on the scale of works in this area. Mr Lane recommended that, to the extent practicable, part of the habitat for this regionally significant population, is retained. Where this cannot occur, a *"suitable offset area and salvage of White's Skink from the works area should be considered prior to works, followed by reintroduction of salvaged individuals into new habitat areas created in the area. This will ensure the persistence of this regionally significant population"*. A large number of submissions noted the proposed impacts to the habitat area that had been restored for White's Skink north-west of the Upfield train line within the corridor, and suggest that the species was not given enough weight in the CIS.

A number of submissions question the impacts of noise on local and nearby Zoo kept fauna. Mr Lane stated that while noise impacts had been considered for the project for humans, such considerations do not seem to have been made for fauna. He further stated that *"any increased noise from construction or traffic was likely to have an effect on local fauna through potential displacement. It is noted that the proposed corridor occurs mostly in areas that already are exposed to noise impacts from traffic movements, such as the Tullamarine Freeway, Upfield Railway line, Elliot Avenue and the Eastern Freeway. While some local fauna may be displaced due to noise, impacts on threatened fauna are not considered to be significant as none occurs in the affected areas regularly in significant numbers"*.

Mr Lane stated that increased noise may also be heard by fauna in the Melbourne Zoo, and that impacts to Zoo fauna were not considered in the CIS. He also stated that the *"impacts of traffic noise on Zoo-kept fauna are a matter more appropriately addressed by the management of the Zoo"*.

Several submissions noted that local fauna were considered to be exposed to higher levels of light due to traffic and construction works. Mr Lane noted that the *"proposed corridor occurs mostly in areas that are already exposed to light impacts from street lighting, including extensive freeway lighting at either end of the project area, as well as lights from vehicle traffic, taller buildings and sport venues. While some local fauna may be displaced due to an increase in local lighting near construction and infrastructure areas, impacts from this on threatened fauna are not considered to be significant as these areas do not regularly support significant numbers of any threatened species."*

In relation to loss of waterbird habitat, several submissions regarding the Trin Warren Tam-boore wetlands noted it as a key location in Melbourne to see a diversity of bird species. Mr Lane observed this was noted during the field assessment on the 4 December 2013. While the area was constructed in 2006, *Where to see Birds in Victoria* (2009) names this area as one of the best places for birding in Metropolitan Melbourne. Mr Lane went on to state that the wetlands:

*Although supporting a diversity of wetland habitats for waterbirds, from open water to mudflats and densely vegetated wetland margins, are limited in extent and therefore in their capacity to support significant numbers of waterbirds for any length of time. Although a good bird watching location, the wetlands are unlikely to support significant numbers of any threatened species on a regular basis and, therefore, are unlikely to make a significant contribution to the population of any threatened species.*

Mr Lane stated that as their loss is more likely to be temporary (provided it proves feasible to replace them after construction is completed), no long term impact on their role in treating stormwater, or providing habitat for waterbirds is anticipated. He further stated that:

*The wetlands have been in existence for less than ten years, and that were any area of the Trin Warren Tam-boore wetlands be removed, and it is technically feasible, consideration should be given to reconstructing similar wetland habitats in order to provide a venue close to Melbourne where a comparable diversity of waterbirds can readily be observed. The performance requirements of Performance Objective B2 and B4 were modified in his report to include the above recommendation. In the case that the wetlands or part of the wetlands can be retained, a small amount of shading may occur from the proposed flyovers in this area. Given the wetlands occur to the north of the northern proposed flyover, only a small proportion of the wetlands would be shaded for a short part of the day, with such shading being even less pronounced in winter. The impacts from such minimal shading are unlikely to significantly impact on the ecology of the wetlands.*

In its opening submission (Document 23), the LMA stated that it recognised that the Trin Warren Tam-boore Wetlands “are a valued resource of the City of Melbourne (and of members of the public), and that it is important that the Project’s impacts on the wetlands be minimised”.

The CCG stated that “In relation to the Trin Warren Tam-boore wetlands it is submitted that these provide a number of environmental roles, the RPPG/PPLV submit that they should be protected from any of the impacts of the proposal”.

Many written submissions discussed potential impacts to aquatic fauna in relevant waterways, and stated concerns regarding the potential shading of the aquatic habitats for fish and other aquatic fauna in both the Moonee Ponds and Merri Creeks. Submitters mentioned platypus in Merri Creek, and potential impacts to their foraging and denning habitat. In this regard, Mr Lane stated that there are:



*“Several records of platypus in the vicinity of the confluence of Merri Creek and Yarra River, the most recent from 2000 near the Chandler Hwy exit of the Eastern Freeway and the closest at Dights Falls in 1970. While this species is not listed under any Commonwealth or state legislation or policy, the species is considered an Australian ‘icon species’ and impacts on this species from the project are considered below. Platypus habitat comprises permanent waters, stable earthen banks consolidated with tree roots overhanging the water and abundant micro invertebrates for food. Any action that degrades these features is likely to impact negatively on the species”.*

And further:

*“Given that no in-stream works were proposed for the project where it crosses the Merri Creek it is considered that there will be no direct impacts on platypus or their habitat in the Merri Creek from the project. However, the Platypus is sensitive to human disturbance and construction works in this area are likely to disturb any platypus in the immediate area. Construction will result in increased activity near creek banks by personnel, increased vehicle movements, and a consequent increase in noise. This disturbance is considered to be a temporary impact during daytime works periods and platypus activity in the Merri Creek (which is mostly crepuscular and nocturnal) is likely to return to its current situation once works are complete, either at night or post-construction. Provided that all works near the creek are undertaken consistent with best practice construction environmental management standards, and having regard to the temporary nature of the disturbance from construction, it is considered that there will be no significant medium or long-term impacts on Platypus and their population in the Merri Creek”.*

The City of Moonee Valley stated that the Moonee Valley Open Space Strategy 2009 (Open Space Strategy) is a reference document in the Planning Scheme, the long term vision in the strategy is *“A linked, sustainable and accessible system of quality open space well used by Moonee Valley’s diverse community, comprising the waterway corridors that are highly valued for their native habitat and recreational use”.*

Many written submissions raised the potential loss of vegetation along the western bank of the Moonee Ponds Creek, near Macaulay Road.

Mr Lane stated that shading of Moonee Ponds Creek and the potential impacts on fish and other aquatic fauna behaviour is discussed in the CIS, and found that the impact on aquatic fauna would represent a low risk to this biota given the already highly degraded nature of the creek and the fact that a significant proportion of the affected reaches are already partially shaded by the Western Link component of City Link. Mr Lane stated that the results of this assessment were considered appropriate and agreed that the impacts on aquatic fauna in the Moonee Ponds Creek would be low. Furthermore, he stated that impacts on threatened aquatic fauna had been appropriately dealt with in the CIS.

Mr Lane agreed with the assessment in the CIS of potential impacts to fish passage and aquatic habitat concluded that if present, mudfish would utilise aquatic and emergent vegetation at the sides of the creek to enable their migration through the lower part of

Moonee Ponds Creek (i.e. Precincts 3, 4 and 5). A large proportion of Moonee Ponds Creek within the Project Area is concrete lined with little to no aquatic vegetation or habitat and such modifications already pose a barrier to fish passage (Biosis Research 2009).

In his evidence, Mr Lane stated that while three scattered remnant trees were recorded and mapped in the GHD report in this area, remaining trees along the western bank were considered to have been planted for amenity/aesthetic purposes. This is supported by the linear arrangement of trees along the bank. Impacts to these trees had not been considered in the GHD report as these trees do not trigger a permit requirement unlike the remnant scattered trees nearby. He agreed with the classification of these trees as planted, and that their loss will be of local consequence for common, urban-adapted fauna such as birds. No threatened fauna species is likely to utilise these trees as habitat in significant numbers or on a regular basis so the loss will not be of consequence for threatened fauna at a population scale.

He also stated that the Project had the potential to limit the value of the Moonee Ponds Creek as a fauna corridor, if projects that restored the waterway were implemented in the future, and that the Project would not have a significant impact on current landscape scale habitat connectivity (i.e. along Moonee Ponds Creek), as habitat connectivity was very limited beyond Royal Park.

The following generic statement was made in a proforma submission from 33 parties -

*Moonee Ponds Creek is already overshadowed by CityLink, and the proposed elevated tollway (which will include two traffic lanes in each direction plus emergency stopping lanes) will compound this. This will result in a likely reduction in vegetative cover and bank stability and the potential to increase erosion within the waterway and adjacent floodplain, thereby reducing the overall health of the creek and increasing the risk of flooding to adjacent properties.*

**(ii) Whether the CIS adequately described the fauna species and associated habitats within the project area, and correctly identified threatened fauna species**

The following comments relate to the entire Project.

Mr Shears does not make specific comment regarding fauna species and their associated habitats other than that which has already been included in relation to protection of native vegetation broadly. No further comments are made here.

In addition to the comments regarding native vegetation, Mr Lane stated that the databases and information sought for the desktop assessment was considered to be sufficient, with the exception that Eremaea Birdlines (a site maintained by Birdlife Australia) should have been referenced. He stated that considerable field survey effort was undertaken to inform the conclusions documented in the flora and fauna assessment (GHD 2013). The survey effort was appropriate to ascertain the extent of vegetation communities and fauna habitats in the Proposed Project Boundary, and was sufficient to make an appropriate assessment on the suitability of habitats for threatened flora and fauna in the available data bases. A small number of threatened wetland species were not considered in the CIS assessment, but these

had been included in his evidence statement. The potential impacts on them were not considered to be significant.

In his evidence, Mr Lane stated that given the range of survey timing undertaken in the preliminary flora and fauna assessment (early and late autumn, and mid spring), he considered the survey timing sufficient to ascertain the extent of vegetation communities and fauna habitats in the Project corridor. He responded that although it was not clearly stated in the reports, field work was undertaken in both winter and spring for both the PB (2013), and CIS documents. This timing was considered sufficient to make an appropriate assessment on the suitability of habitats for threatened flora and fauna. The bulk of the Project area comprises extensive artificial, modified and urbanised areas that are not habitat for significant flora or fauna species. In this context, the duration of the surveys was considered adequate to document vegetation types (EVC's), to perform habitat hectare assessments, to document scattered trees and to assess habitats for the likelihood of occurrence of the short-listed threatened species.

As discussed, previously Mr Lane stated that the resources utilised in the PB assessment to inform the preparation of lists of threatened species with potential to occur in the study area (Section 2.4 of the PB Report) are considered to be sufficient. The lists prepared utilised the usual sources of information on publicly available biodiversity databases from the Commonwealth and State governments (as well as additional information available from Birdlife Australia). The threatened species lists were appropriately screened by PB, documenting the most recent records for each species as well as providing information on the habitats for which the species occurs.

Mr Lane agreed with the summation in the CIS that through the application of the discussion provided in the significance assessments for EPBC Act listed species, the Project is unlikely to significantly impact on threatened species or communities listed under the FFG Act. Mr Lane stated that on review of the DEPI listed species, he considered that no DEPI listed species will be significantly impacted by the Project.

In relation to comments from the City of Melbourne regarding the paucity of bird data presented, Mr Lane acknowledged that species not listed in public data bases were sometimes overlooked. He concluded however that the extent or quality of wetland habitat present in Royal Park is not considered to make a significant contribution to the species' population at a state or national scale.

Ms Pepper (Submission 114) and Mr Lester (Submission 321) also questioned the thoroughness of the assessment of avifauna values. Mr Lane stated that the majority of the species on this list had been dealt with appropriately in the CIS/PB (2013). The exception to this being the Common Sandpiper and Australian Painted Snipe, which had been discounted from the assessment in the PB report (2013). Mr Lane stated that these two species should not have been excluded from consideration, as they do occasionally occur inland on other aquatic habitats. The likelihood of occurrence should be listed as 'Recorded', given that this species has one record in the affected area, although it is unlikely to be a regular visitor to the area.

The submission of Ms Thomas (Submission 308) made comment regarding potential impacts to bats in Royal Park. Mr Lane assessed the likely microbat and larger frugivorous bat

species that might occur within the Project area, which included the Eastern Bent Wing Bat, Gould's Wattleed Bat, and the Grey-headed Flying Fox, and stated that the Project was unlikely to significantly impact upon these species.

The submission of Mr Murtagh (Submission 691) noted that the CIS demonstrated a lack of assessment of invertebrates, notably the Golden Sun Moth. Mr Lane dismissed this matter, stating that this species was considered in the preliminary assessment (PB 2013), *"that the habitats affected by the Project were unlikely to form habitat for this species, and that the Project area was neither near to nor connected with known habitats for this species"*.

Mr Lane stated that the White's Skink habitat area and Trin Warren Tam-boore wetlands had higher biodiversity value than some other areas of the Park. Mr Lane considered these to be of value as spatially highly limited habitats within Royal Park and with respect to White's Skink, constituted a remnant population of regional significance within Melbourne.

**(iii) Whether the Performance Requirements protect fauna species and associated habitats**

In his evidence, Mr Lane stated that the areas associated with the Trin Warren Tam-boore wetlands and the White's Skink habitat area should be clearly delineated to exclude construction impacts in these sensitive areas. He and Mr Shears was agreed that the Habitat Protection area proposed in Appendix 4 to the City of Melbourne's submission, if subject to a Management Plan that had agreement from all relevant parties, would ensure retention of sufficient habitat to ensure population continuity for the White's Skink, by improving the scope for re-establishment of the temporarily disturbed habitat and population after Project Construction had ceased.

Mr Shears, in relation to Term of Reference, 2 (7) (f) *"whether the impacts of the project on surface and ground waters have been appropriately addressed"*, stated his concern in relation to the functionality of the wetlands (and therefore diversity and longevity of plants), and the potential for shading from the proposed flyovers to permanently affect plant growth, and that in terms of stormwater quality, biodiversity and landscape integrity, it is critical that the wetlands and associated landscape is retained intact and functioning while construction works for the Project are underway. In response Mr Lane suggested the following Performance Requirements be added:

- B1 – to protect biodiversity values – add minimising the removal of planted and remnant native trees along the banks of the Moonee Ponds Creek, to the extent practicable;
- B2 – Provide vegetation offsets *to achieve no net loss* (italics added to original by Mr Lane), as required in accordance with the BAGs:
  - Where works are to occur in the White's Skink habitat area in Royal Park West, undertake salvage of White's Skink prior to works and create appropriate habitat to compensate for the area of habitat removed; and
  - Where works will result in loss/partial loss of the Trin Warren Tam-boore wetlands, provide a comparable wetland habitat to compensate for the loss.

In relation to the degree to which light spill and increased light impacts from the Project will impact fauna species, Mr Shears stated that light impact on biodiversity in Royal Park is considered to be an important factor for fauna and diurnal rhythms, and that light reduction should be an aim for the Project in relevant areas of Royal Park; whilst Mr Lane stated that potentially affected fauna are mostly mobile, urban-adapted species, they would be acclimatised to urban light levels, and that light impacts from the Project were unlikely to significantly affect fauna within the Park. Mr Shears has accordingly requested a modification to the Performance Requirements to reduce light spill throughout the Proposed Project Boundary, Mr Lane agrees that this should only be implemented in the White's Skink area as a precautionary measure and not in other areas within the Proposed Project Boundary.

The submission from Moonee Valley City Council noted that the Performance Requirements for the Project relevant to biodiversity be revised to include the protection of biodiversity values on the banks of the Moonee Ponds Creek, and to compensate for the removal of vegetation on this area. Mr Lane agreed with this objective. Moonee Valley stated that it was content with Mr Lane's suggested additions to the Performance Requirements with the addition of "*avoid where practicable and otherwise minimise*", rather than going straight to minimise in his last slide first bullet point.

#### **13.3.4 Discussion**

##### **(i) Whether potential impacts to these species, and their associated habitat values, particularly threatened fauna species been avoided as far as practicable**

With specific regard to impacts to fauna habitat (which is directly related to the potential to impact fauna, including threatened species), it is not evident from the CIS that effort has been made to avoid such impacts as far as practicable. Rather it appears that in relation to the avoidance of removal of native vegetation in Royal Park, in particular scattered trees, the opposite has been put forward. The open space associated with the Ross Straw Field, and the areas of native vegetation surrounding it which include the White's Skink Habitat area, the remnant Grassy Woodland patch, the Trin Warren Tam-boore wetlands, and the scattered native trees have all been included in the proposed temporary works area. The term 'temporary' in this case, is to some degree misleading, as whilst the works areas may be temporary (i.e. during construction which may be up to 7 years), the effects of the impacts to the habitat areas need to be considered on a much longer time scale.

The significant area that has been put forward as potential construction areas and temporary works areas in the Reference design will account for 88% of the scattered trees that need to be removed for the Project. Whilst there are suggested amendments in the performance requirements to replace any vegetation with local provenance plant stock to achieve any offsets as close as possible to the area of impacts, the fact that several Large and Medium Old Trees (some of which have developed hollows) will be removed will have an impact on the local fauna that utilise these assets in Royal Park for foraging, nesting, roosting and denning habitats.

It would take many years for the replacement vegetation to become substantial enough to provide a similar level of resources, given that it can take between 70 to 100 years for many trees to develop hollows.

In relation to any construction activities associated within the Merri Creek environs, these would align with the Project commitments of the EPBC referral (as stated in the CIS), which included the following:

- No works are to be undertaken in the Merri Creek waterway. Bridge piers would be sited outside of the waterway area and no earthworks would spill onto the creek banks or into the waterway; and
- Construction would be managed so that there are no off-site impacts to the water quality within Merri Creek and the Yarra River. Best practice sediment and erosion control measures and appropriate handling of construction materials to be incorporated into the Environmental management requirements.

A similar approach to any proposed works associated with the Moonee Ponds Creek should be adopted.

**(ii) Whether the CIS adequately described the fauna species and associated habitats within the project area, and correctly identified threatened fauna species**

The Committee is satisfied that the appropriate methodology undertaken to describe fauna species, and utilisation of relevant habitats within the Proposed Project Boundary, was broadly adequate. The Committee acknowledges the thorough review by Mr Lane that considered the relevant databases, the PB report (2013), relevant submissions, and the CIS. The Committee notes that whilst there are some issues of dispute as to these aforementioned elements, the broad conclusions from Mr Lane's evidence *"The assessment of threatened species and communities undertaken for the project (PB 2013) is considered to have been undertaken using the correct process, the results of which were confirmed by BL&A. Additional detail provided by BL&A on threatened species and communities leads to conclusions not inconsistent with the conclusions drawn in the initial assessment report"*. The Committee considers that Mr Lane's evidence adds credibility to the CIS documentation, and should be considered as a preferred document in relation to the assessment of biodiversity values, in particular those related to fauna and habitat values.

**(iii) Whether the Performance Requirements protect fauna species and associated habitats**

The Performance Requirements for fauna and associated fauna habitats are addressed in Chapter 13.2.4 (iii) of this report.

### **13.3.5 Findings**

The Committee is satisfied that the CIS has broadly addressed the matters in relation to fauna and associated habitats, but considers that the proposed amendments in the evidence statement by Mr Lane be adopted, and further that the Evidence Statement be used as a key reference document by the LMA and contractor during detailed project design and development.

As per the recommendations given in Chapter 13.2.5 (ii), based on a revision whereby offsets should be recalculated following the results of Mr Lane's revised assessment, and following the development of a final development footprint, consideration should be made of any fauna species, or associated habitats that may be affected.

According to the discussions raised in Chapter 13.2.4 (iii), and the final recommended amendments to the Performance Requirements in Appendix E, the performance requirements would be considered adequate for protection of fauna species and associated habitats.

### **13.4 Applicable Approvals**

The Committee turned its mind to the Applicable Approvals relevant to the removal of native vegetation, that being Planning Scheme Amendment GC2 to allow removal of native vegetation under sections 8, 29 and 35 of the *Planning and Environment Act 1987*. Subject to the adoption of the recommendations of the Committee, including the Performance Requirements, the Committee considers it appropriate that this Approval be granted.

In relation to the Applicable Approval relevant to the protection of fauna species and associated habitats, that being a 'Request for comment from the Secretary of the DEPI regarding the construction of dams, weirs or other structures in or across waterways which potentially interfere with the passage of fish or the quality of aquatic habitat under s66 of the *Conservation, Forests and Lands Act 1987*', this Approval is only relevant for the Moonee Ponds Creek. The CIS stated that the aquatic ecology fish passage investigation "*was only undertaken for Moonee Ponds Creek as no in-stream structures are planned for Merri Creek. A 'low' risk rating was assigned for Merri Creek based on the potential for shading to lead to behavioural impedance to fish passage*".

The Committee has recommended that Part B be set aside, so comment from the Secretary of DEPI in relation to works across waterways is not required. If that recommendation is not accepted, subject to the adoption of its primary recommendations, including the Performance Requirements, it is appropriate that the Applicable Approval under s66 of the *Conservation, Forests and Lands Act 1987* be granted.

## 14 Solid Waste and Contamination

### 14.1 Introduction

#### 14.1.1 Terms of Reference and Applicable Approvals

In addition to its overarching tasks of assessing the CIS and evaluating all applicable law criteria for applicable law approvals, Part 7(h) of the Committee's Terms of Reference includes the following 'Public Hearing Matter' relating to visual impacts and the Urban Design Framework:

*Whether the risk from disturbance and disposal of solid wastes has been appropriately addressed.*

The CIS states that while no applicable approvals are required in relation to contamination, the contractor would be required to comply with the relevant legislation, guidelines and policies governing these matters in Victoria.

#### 14.1.2 Conclusion of the CIS

In regard to contamination, Chapter 14 of the CIS, 'Groundwater and contamination' concluded that during construction the Project would interact directly with the groundwater environment in Precincts 1, 2 and 3 and that contaminated groundwater from the former Fitzroy Gasworks could potentially enter the tunnel in Precinct 2 and impact on the cut and cover works at the western end of Precinct 1:

*While these potential impacts pose a significant risk to the groundwater environment, they are not uncommon for tunnelling projects undertaken in urban settings. These impacts have been managed successfully in many other tunnelling projects, including major road projects in Melbourne.*

*Identified risks can be managed through the rigorous performance requirements outlined in Section 13.3 Technical Appendix L CIS. Minimising these risks should result in a low overall impact to the groundwater environment.*

*In particular, a tanked tunnel design, the use of recognised tunnel construction methods and pre-construction groundwater modelling would minimise disturbance to the groundwater environment. These methods would also be effective in managing other risks such as subsidence and the activation of potential acid sulfate soils.*

*While some potential impacts on human health from the excavation of contaminated soil and rock have been identified, these could be managed through sound construction practices and control measures.*

*Other than the Fitzroy Gasworks site, the presence of contaminated soils has not been confirmed. However, further investigation and assessment would be undertaken by the contractor prior to construction to characterise soil and rock material present within the study area. This would assist in identifying contamination, assessing if a risk of contaminated material being exposed exists*



*and, if so, determining the most practicable and feasible approach to mitigate this risk.*

### **14.1.3 Objectives and Performance Requirements**

The CIS contains evaluation objectives (set by the Scoping Directions) for Contaminated Land and Hazardous Materials:

- *To minimise risks from disturbance and disposal of solid wastes from excavation works, including potentially contaminated materials and acid sulfate soils;*
- *To maintain the functions and values of affected waterways, floodplains and groundwater; and*
- *To minimise risks from disturbance and disposal of solid wastes from excavation works, including potentially contaminated materials and acid sulphate soils.*

There are three corresponding Contamination Performance Objectives in the CIS:

- *To protect the beneficial uses of land and minimise risk to human health and ecosystems from exposure to contaminated soil;*
- *To minimise odour from the excavation and transportation of contaminated material to protect local amenity; and*
- *To manage all wastes from the construction and operation of the project.*

The CIS includes the following Hazardous Material Performance Objective:

- *To protect the beneficial uses of air, land and water, and human ecological health, from the impacts of hazardous materials and dangerous goods.*

An extensive list of Performance Requirements is specified in Chapter 14-2 of the CIS (Table 7-7) to meet these Performance Objectives. The CIS stated that it “*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”.

### **14.1.4 Contamination and Solid Waste Issues**

The Committee heard contamination and solid waste evidence from the following expert:

- Dr Peter Nadebaum of GHD for the LMA;

There was no conclave on contamination.

Based on its consideration of the evidence and written and verbal submissions and evidence relevant to its Terms of Reference relating to contamination and solid waste issues, the Committee has grouped its assessment under the following headings:

- Contamination Issues; and
- Solid Waste Issues

## **14.2 Contamination Issues**

### **14.2.1 Introduction**

The CIS identified that the potential for contaminated soil varies for each Precinct and discusses the issues on that basis.

The Scoping Directions for the CIS in relation to contaminated land establishes the following evaluation objective for the assessment:

*To minimise risks from disturbance and disposal of solid wastes from excavation works, including potentially contaminated materials and acid sulphate soils.*

The key risks identified for assessment were the impacts associated with waste solid materials from excavation works, including those arising from off-site disposal of any acid sulphate soils or potentially contaminated materials.

The CIS was developed to identify the occurrence of acid sulfate soils, contaminated soil, landfills and other potential sources of contaminated materials in the project area, identify volumes and characteristics of waste materials to be excavated and to identify suitable off-site disposal options for waste materials. The identification of any potential or proposed measures to minimise the disturbance and need for off-site disposal of any acid sulfate soils and potentially contaminated materials was also required.

#### **14.2.2 Key Issues**

The Committee has identified that the key issues in relation to the disturbance and removal of contaminated soil are:

- Removal of volatile organic compounds (VOC) contaminated soil in the vicinity of the Fitzroy Gasworks Site during tunnel construction (Precincts 1 and 2);
- Disturbance and removal of asbestos contaminated soil during cut and cover operations in Royal Park (Precinct 3);
- Presence of old landfills near the Ormond Rd/Brunswick Rd off ramp (Precinct 4); and
- The presence of old industrial sites adjacent to the proposed alignment for Part B (Precinct 5).

The potential for encountering the presence of soil contaminated with pathogens during tunnel construction under the Melbourne General Cemetery was raised as a potential issue in the CIS Technical Appendix N. Further assessment undertaken subsequent to the finalisation of the CIS and referred to in the evidence of Dr Nadebaum, indicated that there are no pathogens at levels that would pose a health risk to either tunnel construction workers or the general public. The Committee accepts this evidence and does not consider this form of contamination to be a significant issue for the Project.

#### **14.2.3 Submissions and Evidence**

The Committee received evidence on contamination issues from Dr Nadebaum of GHD, on behalf of LMA. A submission was received from EPA Victoria.

#### **14.2.4 Discussion**

The relevant legislation that applies to the identification, assessment and management of contaminated land in Victoria includes:

- SEPP (Prevention and Management of Contaminated Land) as amended August 2013;
- Contaminated Land NEPM;
- Worksafe OHS Asbestos Regulations;
- EPA Industrial Waste Management Policy; and
- EPA Guidelines for the Management of Acid Sulfate Soils.

The SEPP requires that:

*Any decision which has the effect of allowing a use or development of a site to occur, consistent with the Planning and Environment Act 1987, will be made having regard to:*

- *Any contamination of land at the site and any significant effects that contamination may have on any proposed use or development;*
- *The potential for any use or development to contaminate land; and*
- *The need to impose any conditions necessary for the prevention of contamination of land or the ongoing management of existing contamination of land.*

**(i) Precincts 1 and 2**

The key issue in Precinct 1 is the removal of contaminated soil during the tunnel construction near the former Fitzroy Gasworks site. The contamination is due to removal of soil that has been in contact with groundwater contaminated with VOC, coal tar and PAHs from the former gasworks site. The presence of contaminated soil has been confirmed in an Audit conducted by URS in 2011 and has been identified to be widespread in fill material and natural clay. The Gasworks site is currently the subject of a clean-up notice issued by EPA.

The CIS, Technical Appendix N, p38, states that:

*The construction of the eastern portal, including road widening, open cut, cut and cover, and tunnelling has potential to intercept contaminated soil, rock and groundwater caused by sources detailed in Table 11, which may pose a risk to human health and the environment. The construction works may require excavation of contaminated soils and rock, as well as dewatering of contaminated groundwater, which may represent a risk to construction workers by one of the following pathways:*

- *Contact with skin,*
- *Ingestion of contaminated soil, rock and/or water, and*
- *Inhalation of components and contaminated dust.*

The overall risk ranking for this contamination in the CIS was 'high'. The CIS recommended that further investigation is required to determine the extent of contamination.

The CIS identified that construction of the tunnel in Precincts 1 and 2 will be delivered by a combination of tunnel boring and cut and cover methods. The CIS identified (p41, Technical Appendix N) that:

*Excavation of contaminated soil, rock and groundwater during cut and cover works has the potential to release air pollutants. Air pollutants of potential concern derived from the former Fitzroy Gasworks include VOCs, polycyclic aromatic hydrocarbons (PAHs), sulphur compounds, hydrogen cyanide and dust. Asbestos-impacted soils may also be encountered during the excavation works. All these compounds would need to be monitored during cut and cover construction works.*

In addition to the requirement to protect beneficial uses of land, the SEPP requires that land must be managed to protect any beneficial use designated under any State environment protection policy as protected in any other segment, or element of the environment. This includes the SEPP (Air Quality Management). The release of any air pollutants through construction activities in Precincts 1 and 2 must be managed in accordance with the requirements of the SEPP (AQM).

Many of these substances are highly toxic and known to cause cancer in humans (NEPM (ASC), SEPP (AQM), WHO, 2000). The location of the potential cut and cover area and its proximity to the densely populated area at the eastern end of the tunnel increases the potential of exposure of the general public to these pollutants. The excavation of soils in this area needs to be carefully managed.

Tunnel boring as opposed to cut and cover methods will reduce the potential for exposure in the local area. All spoil generated through tunnel boring is proposed to be removed through the western end of the tunnel. The Committee considers that any contaminated spoil removed from the tunnel should not be stored in populated areas, and should either be transported for immediate disposal, or to be stored at the former Melbourne Market site which has been identified as a potential laydown area for the Project. Minimising the extent of cut and cover in Alexandra Parade will minimise potential exposure of the local community to contamination and reduce the associated risk. Contaminated soil should not be stored on the former Gasworks site given its proximity to residential areas.

Dr Nadebaum stated that contamination at this site would need to be managed in accordance with a contaminated soil management plan. The Committee supports this intention and notes that Performance Requirement CL1 includes the requirement for the preparation and implementation of a *“Contamination Management Plan, to the satisfaction of the EPA, which includes...”* a number of soil management requirements. Further, the extent of tunnel boring should be maximised to reduce the amount of cut and cover in densely populated parts of Alexandra Parade. This requirement should be included as a Performance Requirement for the Project.

The contamination at this site has been well studied and documented through previous environmental audits. Further detailed site assessment, including assessment of the extent of contamination in the area surrounding the site should be undertaken in accordance with the requirements of the SEPP and NEPM. The delineation and characterisation of the contamination will enable the removal and disposal of contaminated spoil without the need for stockpiling in Ross Straw Field or at the Gasworks site. The site assessment should guide the final alignment and design of the tunnel so that as much of the contamination can be avoided in the construction of the tunnel.

## **(ii) Precinct 3**

The CIS identified the potential for asbestos contaminated soil being present in Royal Park in the area that has been identified for cut and cover as part of the construction of the western end of the tunnel and the Elliott Avenue interchange. Evidence was given at the Hearing that the area where cut and cover will be used is large, with large areas of potentially contaminated soils being disturbed.

The presence of asbestos contaminated soil has not been confirmed but has been identified through a preliminary site assessment based on historical land uses. Housing was provided during the war in Royal Park. These houses are assumed to have contained asbestos as they were pre-1970's houses and were demolished after the war, giving rise to potential contamination.

A full detailed site assessment, in accordance with the requirements of the NEPM, must be undertaken prior to any construction works commencing. If asbestos is confirmed, then the impacts must be managed in accordance with the Worksafe regulations. The extent of cut and cover in Royal Park should be minimised to reduce the potential impact arising from disturbance of the contaminated soil to the public using the Park. The extent of tunnel boring through areas identified as being contaminated should be maximised so that the amount of soil disturbed at surface is as low as possible. The contamination, if present, is likely to be close to the surface and is unlikely to be encountered at depth where the tunnel boring would be undertaken. This would minimise the amount of contaminated soil removed during the tunnel construction in this area.

The Worksafe regulations require the limitation of airborne asbestos fibres which is the major exposure pathway (Worksafe OHS Asbestos Regulations 2006, p226). The regulations state that:

*An asbestos licence holder performing asbestos removal work must ensure that the asbestos removal work is performed in a manner that, so far as is reasonably practicable eliminates the release of airborne asbestos fibre and prevents the contamination of areas adjacent to the asbestos removal area.*

Further the Worksafe regulations require environmental monitoring in surrounding areas if asbestos contamination is identified (Section 4.3.72, p226). Dust control measures must be implemented in all areas where asbestos contamination has been confirmed and soil disturbance for construction works is being undertaken. These measures are required to conform to the Worksafe regulations and will reduce community exposure (both park users and local residents) to potential asbestos contamination.

Environmental monitoring must be conducted in Royal Park for the duration of any cut and cover works if the detailed site assessment confirms the presence of asbestos. Monitoring should be conducted at locations close to the Melbourne Zoo and The Royal Children's Hospital, as well as areas representative of residential areas of Parkville West and Flemington Road, as well as The Avenue.

Under the requirements of the Worksafe regulations, local residents have to be advised of presence of asbestos, removal works and that monitoring is being undertaken. Given the location of the proposed cut and cover works in Royal Park, in addition to local residents the Zoo and Royal Children's Hospital should be advised.

The need for environmental monitoring and notification of local communities of the presence of asbestos, removal works and monitoring have been incorporated in the Committee's Issue-Specific Recommendations in the Executive Summary of this Report..

**(iii) Precinct 4**

The preliminary site assessment conducted for the CIS identified the potential for two old landfill sites near the Ormond Road/Brunswick Road on-off ramps adjacent to the Moonee Ponds Creek. These sites were apparent in aerial photos taken in 1960.

Towards the north of Precinct 4 an industrial area was identified in all aerial photographs except 2013 (CIS, Technical Appendix N, p80). This area is situated to the south of Albion Street, just west of Duggan Street, and incorporates approximately 100 square metres of the Proposed Project Boundary.

The demolition of buildings built between 1931 and 1960 are evident in photographs taken in 1972. The demolition of these building raises the potential for the presence of asbestos contaminated soil.

The CIS at Technical Appendix N (p. 82) identified that widening of the CityLink carriageway in this area and the realignment of the Brunswick Road on- ramp has the potential to intercept contaminated soil, rock and groundwater caused by the sources of contamination identified above.

No detailed assessments of these sites have been conducted at this time. If the final alignment of the Project is identified as intersecting with any of these areas, detailed site assessments must be undertaken prior to the commencement of any construction works. If asbestos contamination is identified, then compliance with the Worksafe regulations is required and measured, including environmental monitoring (as discussed for Royal Park), and will need to be implemented.

Detailed site assessments should be undertaken to confirm the presence of old landfills near Ormond Road/Brunswick Road. If these are confirmed, then the extent of contamination beyond the original site boundaries needs to be determined. Detailed site management plans will need to be developed to manage the impacts of old landfill waste and residual contamination.

**(iv) Precinct 5**

The preliminary site assessment undertaken as part of the CIS, identified old industrial land adjacent to the CityLink corridor. This land has been the subject of several EPA audits that concluded that the land is unsuitable for residential and other sensitive use redevelopment. This implies that significant levels of contamination have been identified at these sites.

The Proposed Project Boundary in Precinct 5 is very tight as it aligns with the CityLink corridor. The CIS concluded that the contaminated land is outside the Proposed Project Boundary, however from the maps provided in Technical Appendix N, it is clear that these sites abut the Proposed Project Boundary. As the extent of the contamination has not been assessed in the CIS, the nature of the contamination is not confirmed, and the potential of the contamination to migrate into the Project area is unknown. A comment was provided by the LMA at the Hearing that the Proposed Project Boundary is arbitrary and could change with the final design for the Project.

The SEPP states that the site management must take into account the results of any environmental audits. Before any construction activities are undertaken for Part B of the

Project, further detailed site assessment must be undertaken in this area. The results of this assessment as well as the results of previous environmental audits should inform the development of a contamination management plan for this area. Strict dust management practices must be implemented during the construction activities to reduce the potential for exposure of local communities to contaminated soil. As far as practicable, the final alignment for Part B of the Project should be chosen to avoid the intersection with contaminated land.

The preliminary site assessment identified old industrial land through Kensington and the Arden-Macaulay urban renewal area. The CIS concluded that these areas are outside the Proposed Project Boundary so further investigation or survey is required. Given that the final alignment and design of the Project has not been confirmed, if there is any change in the Proposed Project Boundary that would extend into these areas, detailed site assessments will be required and contamination management plans developed for this area.

#### **14.2.5 Findings**

Based on information contained in the CIS and evidence provided during the Hearing, it is clear that there is the potential for contaminated soils being intercepted or disturbed during the construction of the Project. With the exception of the Fitzroy Gasworks site, no detailed assessments of contamination have been undertaken. However, the conclusion in the CIS is that the potential risks from these sites are low to medium. Given the identified land use history for these sites, it is difficult to understand how these conclusions have been reached.

It is recommended that complete site investigations be undertaken prior to any excavation of potentially contaminated soil. This includes any old landfill sites and industrial land as well as areas where previous environmental audits have shown land unsuitable for development. All site investigations must be done in accordance with the requirements of the SEPP and the Contaminated Sites NEPM.

In areas where asbestos has been identified, environmental monitoring plans must be developed in accordance with the requirements of the Worksafe Regulations. Community engagement plans must also be developed.

In areas where air pollutants may be released as a result of disturbance of contaminated soil, these impacts must be managed in accordance with the requirements of the SEPP (AQM).

The Committee has recommended that the extent of cut and cover in Alexandra Parade be minimised to reduce the risk of exposure of the local community to contamination arising from the former Fitzroy Gasworks site, and the extent of cut and cover in Royal Park be minimised to avoid the disturbance of asbestos contaminated soil.

It is recommended that the LMA undertake detailed site investigations prior to the excavation of any potentially contaminated soil.

An environmental monitoring and community engagement plans should be developed and it must in accordance with Worksafe Regulations 2007 where asbestos has been identified. The management of air pollutants where these may be released as a results of disturbance of contaminated land the impacts must in accordance with the requirements of SEPP (AQM) is recommended.

Further, it is recommended that the extent of cut and cover construction should be minimised in Alexandra Parade and Royal Park.

### **14.3 Solid Waste Issues**

#### **14.3.1 Introduction**

The relevant scoping directions for solid waste issues include the identification of opportunities for productive re-use of waste materials (in particular, tunnel spoil) in accordance with regulations. The CIS was required to assess capacity issues that could affect either the management of waste on-site or disposal off-site.

#### **14.3.2 Key Issues**

In relation to solid waste the Committee has identified the following key issues:

- Amount of contaminated spoil;
- Location of potential laydown areas;
- Capacity of landfills and treatment facilities capable of accepting contaminated spoil; and
- Traffic movements in local streets.

#### **14.3.3 Submissions and Evidence**

The Committee heard evidence from Dr Nadebaum of GHD, on behalf of LMA. Submissions were heard from the EPA.

#### **14.3.4 Discussion**

The construction of two 4km tunnels will produce a significant amount of spoil that needs to be managed. The CIS has assumed that there will be approximately 2.5 to 3 million cubic metres of spoil material requiring management as a result of the construction of the Project. Not all this spoil will be contaminated. The CIS has assumed that the majority of the spoil will have to be disposed of to landfill due to the lack of reuse opportunities in the Project.

The spoil from the tunnel will have to be stored and tested for classification for disposal. It is proposed that the laydown areas identified in the Proposed Project Boundary will be used for this purpose. This includes Manningham Parklands/ Ross Straw Field, Fitzroy Gasworks site and well as the former Melbourne Market site. Other areas include part of the Moonee Valley Racecourse site and the area around the State Netball and Hockey Centre in Royal Park.

With the exception of the former Melbourne Market site and the Netball and Hockey Centre, all these locations are in or close to residential areas.

Dr Nadebaum calculated that of the total spoil during the from tunnel construction the amount of contaminated spoil that would require disposal to landfill would be of the order of 3,000 to 4,000 square metres. The Committee asked Dr Nadebaum his opinion on the capacity of landfills in Victoria to accept this amount of contaminated spoil, as well as any clean spoil unable to be reused in the Project. In his response (Document 149), Dr Nadebaum identified a number of potential landfills that are in various stages of approval by EPA. The Committee sought the opinion of the EPA on this issue. In response the EPA noted



that there were landfills that could accept the waste, but did not identify the number or location of the landfills.

The LMA propose to use Manningham Parklands/Ross Straw Field and surrounding areas for the storage of spoil removed from the tunnel, both clean and contaminated. Spoil would be stored there until transported for disposal or reused in the tunnel construction. The Manningham Parklands/Ross Straw Field was considered appropriate by the LMA as the tunnel boring is planned to commence at the western end of the tunnel adjacent to the Field. The Committee has a number of concerns with regard to the use of Manningham Parklands/Ross Straw Field as a laydown/storage area for spoil.

The Manningham Parklands/Ross Straw Field is located within the residential area of Parkville West, close to both Manningham and Oak Streets. Opposite, are a number of apartment buildings, houses, the Parkville Gardens development, two aged care facilities, child care centres and a kindergarten located in Oak Street.

In their submission, Mr Main and Ms Treleven (Submission 659), identified a number of sensitive locations within and surrounding the Parkville Gardens estate including:

- Mercy Aged Care facility with up to 100 elderly residents;
- Penguin Childcare Centre (housed in the Estate);
- Thinking Kids Childcare Centre (corner Oak Street and Poplar Street); and
- Elderly Chinese Home.

Dr Nadebaum was questioned by the Committee on his opinion on the suitability of Manningham Parklands/Ross Straw Field for the storage of spoil from the tunnel. His response that the relative isolation of this area makes it suitable for the storage of contaminated spoil. Given its proximity to a number of sites that have of sensitive uses, the Committee finds it difficult to understand how Dr Nadebaum reached this conclusion. When EPA was asked to comment on this, they did not provide a response.

During the Hearing, evidence was heard from a number of parties about the sensitivity of the environment surrounding the Manningham Parklands/Ross Straw Field including the Wetlands and the White's Skink habitat. Based on the evidence and submissions during the Hearing, the Committee believe that these areas should be protected. Given the proximity of sensitive uses to this area, contaminated spoil should not be stored at this site. If the spoil cannot be tested and classified for disposal in situ, then it should be transported to the Melbourne Market site for storage before ultimate disposal.

If clean spoil is to be stored in the vicinity of Manningham Parklands/Ross Straw Field for potential reuse in the Project, it must be located in a way that does not impact on the White's Skink habitat or the wetlands. It is recommended that no spoil or construction activities be undertaken within a 25m buffer of these areas. Strict dust management plans must be developed and implemented for the site.

The Fitzroy Gasworks site has been proposed as a potential storage area for contaminated spoil from the cut and cover works in Alexandra Parade. The Gasworks site is in a residential area with townhouses and houses directly opposite on Smith Street. Significantly, the site is located close to the Clifton Hill and St John's Primary Schools. Given that the contaminated spoil coming from these works contains VOCs and a range of carcinogenic substances, the

location of the Gasworks is not suitable for the storage of such material. Any contaminated spoil must be transported directly for disposal or storage at the Melbourne Market site.

Although the Scoping Directions required that the CIS to provide an assessment of capacity issues that could affect either the management of waste on-site or disposal off-site, this was not addressed to any extent in either the CIS or in the evidence of Dr Nadebaum. The EPA did not provide any information to give the Committee confidence that this issue has been adequately considered and addressed. Further assessment of the potential volumes of spoil, both contaminated and clean, that may require disposal and/or treatment, is required to inform the development of the environmental management framework for the Project.

A major issue related to the disposal of spoil is the associated truck movements. This is a significant issue for the Parkville West area if Manningham Parklands/Ross Straw Field is used as the central point for the storage and transportation of waste for disposal. A number of potential routes have been identified that range from construction of a direct link to CityLink to the use of local roads as a transport route. Given that the amount of spoil to be removed is high, the number of associated trucks movements is significant, with numbers of up to four trucks per minute being cited.

The use of local roads has potential significant impacts on the local communities. Diesel trucks under load are a significant source of air pollution and noise. Truck movements at night are likely to cause sleep disturbance due to noise. As previously discussed, the surrounding area has a number of child care and aged care facilities. A large number of truck movements within the local area present a significant safety risk for these vulnerable populations.

Several submitters raised concerns that the use of local streets would lead to the potential closure of local streets to enable truck movements, making it impossible for local residents to access their streets, and therefore limiting of mobility the area. Given that the construction period for the project is a minimum of five years, this would have a significant impact on the quality of life experienced by these residents and may lead to a feeling of isolation. The combined impact of increased air pollution from trucks and noise may lead to adverse impacts on the mental and physical health of this community over this period.

Mr Main and Ms Treleaven (Submission 659) commented that the only through road connecting Parkville West and Parkville Gardens to other parts of Melbourne is Oak and Manningham Streets. They raised concerns that the road will be closed off during the period of construction which would cause significant diversion of traffic to Royal Parade and Brunswick Road leading to massive traffic delays for residents.

Mr Morris stated in the LMA's closing submission that mechanisms will be put in place for 'soil management' rather than 'contaminated soil management'. He stated that it is expected that spoil will be stored temporarily at the site of the Manningham Parklands/Ross Straw Field. Other activities that may take place in the area of the western portal are described in Document 507.

Off-site disposal will be required for any risks that may result from the extraction, storage and disposal of contaminated soils, and this process will be managed by the successful contractor.

Mr Morris referred to the expert evidence of Dr Nadebaum, which stated that approximately 3000 – 4000 cubic metres of contaminated soil extracted during construction of the project likely will require off-site disposal, and several landfills in the Melbourne Metropolitan Region could accommodate this, in addition to a number of soil treatment facilities.

Mr Morris stated that due to the fact that parts of the Manningham Parklands/Ross Straw Field are located over 200 metres from Manningham Street, and the sensitive receptors are situated on the west side of the Street, this could potentially be an appropriate location for the stockpiling of contaminated materials. Mr Morris referred to the EPA submission which commented that the type of soil will determine the management options selected, and a number of potential management measures can be implemented. Mr Morris stated that the performance requirements require that a Contamination Management Plan, to be verified by an independent environmental auditor, will address these issues (CL1).

The Committee does not accept the position of Mr Morris in this regard. Given the proximity to sensitive receptors, contaminated soil should not be stored on Manningham Parklands/Ross Straw Field or at the former Fitzroy Gasworks site. Contaminated soil should be removed directly for treatment and disposal at landfill, or if storage is required, it must be undertaken at the former Melbourne Market site.

#### **14.3.5 Findings**

The construction of the tunnels will generate a significant amount of spoil, some of which will be contaminated. The CIS does not provide any detail on the amount of spoil that is likely to be generated, but stated that the potential reuse options are small.

A number of laydown areas have been identified as potential storage areas for spoil (both clean and contaminated) including Manningham Parklands/Ross Straw Field and surrounding areas, the Fitzroy Gasworks site and the old Melbourne Market site in Precinct 6. Based on evidence and submissions, the Committee is of the view that no contaminated spoil should be stored in populated areas where there is the risk of exposure to surrounding communities. Contaminated spoil should be immediately trucked off-site for treatment and disposal. If that is not possible, then the former Market site should be used for storage. Any asbestos contaminated soil must be stored in accordance with Worksafe and EPA Regulations including the development of an asbestos control plan.

If clean spoil is stored at Manningham Parklands/Ross Straw Field or the Fitzroy Gasworks site, strict dust management practices must be implemented, including real-time continuous monitoring of PM<sub>10</sub> using an hourly trigger level of 80µg/m<sup>3</sup> to increase dust management controls. Any soil stored at Manningham Parklands/Ross Straw Field should not be stored within 25 metres of the White's Skink habitat or wetlands given the sensitivity of these areas.

Truck movements associated with construction and waste removal are likely to be significant in the Parkville West area and will pose a risk to the health and safety of local residents. Truck movements on local streets must be kept to a minimum. No truck movements should occur close to aged care or child care facilities. A transport route with direct connection to CityLink should be constructed.

The Committee has recommended that the storage of contaminated spoil in the Manningham Parklands/Ross Straw Field or Fitzroy Gasworks sites be prohibited, and that clean spoil can be stored at the Manningham Parklands/Ross Straw Field or the Fitzroy Gasworks site, in accordance with the implementation of strict dust management practices, and not within 25 metres of the White's Skink habitat or Trin Warren Tam-boore wetlands.

Further, truck movements should be minimised in local streets and avoid routes that pass by childcare centres or aged care facilities. In this regard, a direct link to CityLink should be constructed to enable a transport route to be defined to avoid residential areas and minimise impacts on local communities.

## 15 Social and Business Impacts

### 15.1 Introduction

#### 15.1.1 Terms of Reference and Applicable Approvals

Unlike other Chapters of the CIS, the Social and Business Chapter (Chapter 16) does not have a corresponding reference in Part 7 of the Committee's Terms of Reference – 'Public Hearing Matters'. The Committee is required however to consider social and business impacts in the context of its evaluation of the applicable approvals before it.

The relevant applicable approval for social and business assessments is the planning scheme Amendment required under sections 8, 29 and 35 of the *Planning and Environment Act 1987*. The Amendment would remove permit triggers, apply overlay controls across sections of the Proposed Project Boundary and permit the project's development in accordance with a project-specific incorporated document that covers all relevant planning schemes.

The CIS states that a number of other Acts, guidelines and policies have social and business implications for the Project, including requirements associated with the compulsory acquisition of property.

#### 15.1.2 Conclusion of the CIS

The Social and Business Chapter of the CIS concluded that the placing of a large section of the project in a tunnel will minimise most of the projects potential broader social and business impacts and the performance requirements proposed for the project would "mitigate those social and business impacts relating to traffic, noise and vibration, heritage, visual impacts and air quality".

The major business and social impacts identified in the conclusion to Chapter 16 relate to property acquisition. The CIS states:

*There are major impacts on 105 residential properties (both owner-occupied and tenanted) and 34 commercial properties as a result of surface property acquisition for the project.*

*Private residential properties would need to be acquired in the following locations:*

- *Precinct 1: Bendigo Street (14 properties), Hotham Street (three properties) and Alexandra Parade North (18 properties);*
- *Precinct 3: Manningham Street (55 properties – four houses and 51 units);*
- *Precinct 4: Pattison Street (two properties);*
- *Precinct 5: Bent Street (13 properties).*

*Commercial premises would need to be acquired in:*

- *Precinct 1: Alexandra Parade North (18 properties);*
- *Precinct 3: Racecourse Road (one property, with no building);*
- *Precinct 4: Moonee Valley Racecourse (a small strip of land would be acquired);*

- *Precinct 5: Stubbs and Barrett Streets (12 properties), SP AusNet's West Melbourne Terminal Station site (partial acquisition of land) and VicTrack's Melbourne Freight Terminal site (acquisition of a small section of land).*

The CIS concluded that processes associated with the *Land Acquisition and Compensation Act 1986* would “*protect the above owners' interests and mitigate these impacts*”.

With respect to employment and other business impacts, the CIS concluded that the acquisition or occupation of commercial properties could lead to the displacement and possible loss of 203 jobs and some businesses could experience financial losses from a reduction in passing trade along Alexandra Parade and from the temporary occupation of car parks in Precinct 5.

Negative impacts on amenity were identified as follows:

*Proposed elevated structures would affect the amenity of Manningham Street and Oak Street residents, including the Elderly Chinese Home. The elevated structures would also substantially change the outlook at the Evo apartment complex at Manningham Street, currently under construction. The Victorian Government has announced early voluntary purchase options for the developer and purchasers of this complex.*

*Given the scale of the project, these impacts would be relatively small in terms of the number of households and businesses impacted. But, as the effects on individuals could be substantial, careful consideration would be given to the best ways to minimise the disruption to these property owners, tenants, businesses and employees. Additional assistance may need to be provided to vulnerable residents.*

The CIS concluded that further mitigation measures would be undertaken by the LMA including:

- *Providing a high level of assistance to affected landowners and tenants, with particular attention paid to the circumstance and needs of vulnerable residents (including liaising with government departments and agencies, local councils and community groups to provide support to these residents and potentially offering counselling services as appropriate).*
- *Maintaining negotiations with sporting clubs, facilities managers and councils about the possible relocation of sporting and recreational facilities.*

The CIS concluded that up to 23.27 hectares of Royal Park “*could be required temporarily for construction activities and the community would be unable to access parts of the park during the project's construction. This assumes a 'worst case' scenario and the project's performance requirements would seek to minimise construction footprints where feasible.*” It also notes that small section of Parks in Moonee Valley and Mooreland will be acquired permanently.

In relation to impacts arising from design and construction of the CIS concluded:

*Project structures in Royal Park would be designed in accordance with the Urban Design Framework, incorporating sensitive and innovative features to minimise their visual and other impacts on the surrounding parkland.*

*The permanent loss of Ross Straw Field in Royal Park means that a number of sporting clubs would need to relocate.*

*In some locations in Precincts 1, 3 and 5, new elevated structures would be visually dominant and change the views from residences and the character of local neighbourhoods. The application of the project's Urban Design Framework would mitigate the impacts of these structures.*

*Some residents and business would experience some level of disruption during the project's construction phase. Specific performance requirements would be implemented to mitigate these impacts.*

*The contractor would be required to implement a community involvement plan to keep residents informed about the project's progress and provide opportunities for residents and businesses, local councils and community groups to raise concerns during the construction and operational phases.*

### **15.1.3 Objectives and Performance Requirements**

There is no specific CIS evaluation objective for Social and Business Impact. Rather the “*Land use, dwellings and infrastructure*” Objective is repeated. As identified in Chapter 7 of this report, the Land use, dwellings and infrastructure Objective is:

*To minimise adverse impacts and to achieve appropriate integration with adjoining land uses, including minimal displacement of existing land use activities, dwellings and infrastructure.*

One Social and Business Performance Objective is listed. It is:

- *Minimise impacts on the community through engagement during construction and operation.*

One performance requirement, that requires the development and implementation of a community and business involvement plan, is specified in Chapter 16 of the CIS (Table 16-2). The CIS states that it “*would be up to the contractor(s) to determine the best approach to meeting the performance requirements, subject to legislative and other requirements*”. The CIS further states that “*Performance requirements addressing other impacts – such as noise, air quality, traffic, visual and land use – are included in the relevant CIS chapters and are not repeated here*”.

### **15.1.4 Social and Business Impact Issues**

The Committee heard social and business impact evidence from the following experts:

- Ms Heather Nesbitt of GHD for the LMA on social impacts;
- Ms Bonnie Rosen of Symplan for Moonee Valley City Council on social impacts;
- Ms Marianne Stoettrup of Matters More Consulting for the LMA on business impacts; and
- Mr John Henshall of Essential Economics for both the City of Melbourne and the Moonee Valley City Council on business impacts.

Ms Beverley Kliger of Beverley Kliger and Assoc provided an evidence statement for Yarra City Council on social impacts, but she was not called to give that evidence.

At the request of the Committee, the social impact experts met to discuss the relevant issues and determine points of agreement and dispute. At the conclusion of the conclave and further discussions an *'Agreed Statement'* (Document 7), was provided to the Committee. An overview of matters agreed and disagreed is provided in Chapter 7.1.4.

Based on its consideration of the evidence and written and verbal submissions relevant to its Terms of Reference relating to social and business impacts, the Committee has grouped its assessment under the following headings:

- Social Impacts; and
- Business Impacts.

## **15.2 Social Impacts**

### **15.2.1 Introduction**

The *"Social and Business Overview"* documented at Chapter 16.1 of the CIS notes that the Project traverses through a highly urbanised setting and this influences the nature and extent of the social and business impacts likely to be generated by it. The CIS concludes that *"placing a large section of the project in tunnel would minimise most of its potential social and business impacts (during construction and post-construction)"*. Having reached this finding, the CIS acknowledged that *"major impacts would be experienced by individual landowners, households and businesses affected by the project's property acquisition requirements"*.

The CIS further stated that *"the greatest social impacts would be caused by the interchange with Hoddle Street in Precinct 1 and the interchange with CityLink in Precinct 3"*. It is acknowledged that at both locations, private property would need to be acquired and the changed outlook for areas near the Project's elevated structures *"could reduce the attractiveness of some areas as places to live and visit"*.

Construction impacts and operational impacts are listed. The CIS states *"These impacts would be managed and mitigated through the implementation of environmental performance requirements."*

The Committee's assessment of social and business impacts, focuses on whether the impact of the Project has effectively responded to the CIS Land use, dwellings and infrastructure objective, being *"to minimise adverse impacts and achieve appropriate integration with adjoining land use, including minimal displacement of existing land use activities and dwellings"*. It is this goal that Chapter 16-2 lists as the relevant CIS Objective.

### **15.2.2 Key Issues**

The majority of issues relating to Social Impacts have already been addressed by the Committee in Chapter 7 of this report in its consideration of impacts on housing, recreation and community facilities infrastructure. As noted previously the CIS *Social Impact Objective* and *Land Use Objective* are the same. The Committee does not repeat this here, as the detail of the Social impact evidence and submissions is outlined in Chapter 7. Rather, it provides a high order overview of evidence and submissions as well as an overview of the key findings of emerging from the consideration of Social Impacts. Overarching comments on the adequacy of the Project's response to the CIS Social Impact Objective and its overall



proposed approach to the mitigation of social impacts is provided. This should be read in conjunction with Chapter 7 of this report.

### 15.2.3 Submissions and Evidence

As identified in the Social Impact expert witness conclave statement (Document 7), the social planning experts could only reach agreement on a very limited number of matters, the most significant being the need for the Social Impact Assessment to be updated to ensure all community facilities within or adjacent to the project alignment were identified. The areas of disagreement were numerous and related to the following topics:

- *Future recreational land provision;*
- *Mitigation measures for home owners and tenants whose properties would be acquired;*
- *Perceived community safety underneath elevated roadways;*
- *Loss of indigenous remnant vegetation in Royal Park;*
- *Rating of social impact of environmental health issues in Precinct 1;*
- *Urban renewal;*
- *Social equity for Flemington Housing Estate residents;*
- *Performance requirement C1;*
- *Cumulative and indirect impacts;*
- *Refinement of performance requirements and mitigation measures; and*
- *Community health and wellbeing.*

It was apparent through the leading and cross examination of the evidence of the Social Planning witnesses that the fundamental points of differences of opinion between Ms Nesbitt for the LMA and Ms Kliger for City of Yarra and Ms Rosen for Moonee Valley were:

- Whether the Reference Project and route alignment can be assessed as adequately avoiding or minimising social impacts; and
- Whether the Performance Requirements represent adequate social impact minimisation initiatives.

As an overarching observation, Ms Nesbitt concluded the Project and the CIS (with a few minor amendments) did adequately respond to these high level objectives of the CIS, while Ms Kliger for the City of Yarra and Ms Rosen for Moonee Valley were firm that they did not.

Ms Nesbitt's evidence acknowledged that the SIA provides one performance requirement, this being the preparation of a community involvement plan "*to engage potentially affected stakeholders and advise them of*" a number of matters largely concerning construction matters. In response, her evidence is that "*it is likely that additional performance requirements could be applied to ensure negative social impacts are addressed while cross references to other relevant performance requirements in other technical studies should be considered*". Two new Performance Requirements were recommended in response and a further six modifications proposed to existing requirements. As noted in Chapter 7.3 many of these proposed changes are specific to the Flemington Housing Estate and are not proposed to apply throughout the whole Project area. Others were not accepted by the LMA.

The presentation slides of Ms Nesbitt (Document 97) reiterated her comfort with the Performance Requirements. She identified that one of the main social issues identified in submissions was:

*Negative social impacts on properties and people affected by flyovers and new freeway routes including issues regarding compensation, acquisition, environmental health.*

Appendix C of her witness statement acknowledged that 876 submitters reflected this as a concern. Despite the magnitude of submitter concern to the issue, Ms Nesbitt did not identify any Recommendation for new or modified Performance Requirements in response to this concern. Her presentation slides noted that she was satisfied that the existing and proposed Performance Requirement, as well mitigation measures in other technical studies, addressed negative social impact concerns.

Ms Nesbitt's response to other expert material tabled by the LMA (Document 97) sought to respond to a number of criticisms of the SIA. Some of these have already been outlined in Chapter 7 of this report (eg: cumulative social impacts not addressed; social impact rating regarding environmental health impacts in Precinct 1 are too low; urban renewal opportunities in Precinct 1 may not be realised; and loss of Ross Straw Field will impact on the capacity of City of Melbourne to meet its future recreational needs etc).

In relation to the adequacy of Performance Requirements and mitigation measures, the evidence of Ms Kliger was particularly critical. Her evidence stated:

*The Performance Requirements proposes a community involvement plan which is essentially an information dissemination process. This does not provide an adequate framework to ensure that the mitigation strategies are carried out appropriately. What is required are plans, criteria or requirements for social impact plans to put into effect the benefits, mitigation measures, monitoring plan, and any governance arrangements required to implement consultation process and impact and benefit agreements. Currently there are no specific requirements for community and project developer agreements and consultation processes.*

*There should be explicit requirements set out in Performance Requirements and mitigation strategies regarding ongoing consultation especially with community leaders and representatives of the people born overseas who speak a language other than English, hard to reach and vulnerable groups, and local government for facilitating an agreement-making process between communities and project developers. This agreement-making process should set out the*

- *consultation process(es); and*
- *process for assessing and monitoring the processes to manage the impacts.*

Ms Kliger was highly concerned that the determination of how to implement the Performance Requirements is left to the contractor, as opposed to a more independent, transparent and accountable process.

Ms Rosen's expert opinion is that the depth of detail presented in the CIS does not facilitate comprehensive, rigorous or robust assessment of the probable impacts associated with the construction and operation of the project. She stated:

*In particular, the mitigation and management of measures are insufficiently described, and do not permit a full assessment of the nature and extent of residential impacts.*

...

*The discussion of the alternatives in the CIS is lacking in detail, dismissing the feasibility of certain design options that would significantly reduce the impact of the Project on the Community of Moonee Valley in particular, and the suburbs of Flemington, Tranvencore, Ascot Vale and Moonee Ponds in particular.*

Ms Rosen's concluding comments reiterated her overarching critique of the CIS and SIA. Her assessment stated the following:

**Principles:**

- *Not adequately addressed equity (disproportionate harm, compensation)*
- *Transparency (lack of detail, understanding of project, duration, omissions, inaccuracies)*
- *Stakeholder engagement*

**Process and methodology:**

- *Identified and discussed changes and impacts but not social impacts as per standard social impact assessment considerations*
- *No assessment of cumulative impacts*
- *Inadequate assessment of alternatives*

**Proposed Project Boundary:**

- *'kink' excludes Flemington Community Centre*
- *Benefits discussed beyond Proposed Project Boundary but assessment of impacts confined to Proposed Project Boundary*

**Mitigation measures and Performance Requirements**

- *Mitigation measures are not mandatory*
- *Standard SIA practice to attempt to avoid and address rather than minimise*
- *PR's which are mandatory are statements of ambition*

**Rigour:**

- *Excluded social impacts from risks*
- *Did not consider social impacts, just changes and effects*
- *Assumptions that the project will have limited social impact unfounded and not supported by evidence or a sound understanding of the context or SIA theory and practice:*
  - *Biophysical environment not a key determinant of health and wellbeing*
  - *Those already affected by CityLink will not be affected by additional road infrastructure and associated impacts*
  - *Renters will experience less harm as they are transitory*

The submission of Ms Hicks on behalf of Moonee Valley (Document 194) in relation to the competing social impact evidence was that Ms Rosen's should be preferred to that of Ms Nesbitt, for reasons that extend over two pages, and not repeated here.

The closing submission on behalf of the LMA (Document 525) stated that it must be fairly acknowledged that *"the Project will deliver a range of broader social benefits"*. The major benefits cited were principally related to improved connectivity of Melbourne's road network via better access to jobs and to schools, through facilitating better social interactions. The submission claimed:

*The social benefits of the Project will be real and will be substantial. They must properly be taken into account by the Committee in assessing whether the localised impacts of the Project discussed .... should be considered acceptable.*

*The LMA relies on the Social Impact Assessment contained within the CIS (which was undertaken according to widely-accepted assessment practices).*

The Committee refers readers to Chapters 7.2.3, 7.3.3 and 7.3.4 for more detail on evidence and submissions presented during the hearing relating to Social Impacts of the Project.

#### **15.2.4 Discussion**

Having considered the evidence and submissions put to it, the Committee acknowledges that where the future road alignment is in-tunnel, the Reference Project has substantially avoided many social impacts. The Committee accepts that some social benefits will accrue from improved cross city travel convenience and some potential travel time savings. The key concern of the Committee however, is that Part B of the alignment and a number of ancillary elements of the Project will likely result in significant social impacts that in the view of the Committee are of a scale that are unacceptable. Put simply, the Committee considers that an alternative alignment or design solution should have been found to avoid the physical and social impacts. Of as significant concern to the Committee are the inadequate measures to minimise the Social Impacts arising from the design.

The lack of effort in the CIS, and a perceived reluctance by the LMA to concede to additional remediation or mitigation works to 'minimise' or 'make-good' the negative impacts, compounds the negative issues arising from what the Committee considers are flawed design elements. In forming the above views, the Committee highlights that it found the Social Impact evidence of Ms Nesbitt overwhelming in its lack of response to submissions that highlighted the need for and benefits that would accrue, by providing more specificity and accountability within the CIS's proposed mitigation measures. The Committee was not persuaded to accept Ms Nesbitt claim that the SIA is responsive to the needs of those residents that have not had their properties acquired but will have a direct interface with the new road and will suffer significant negative impacts from construction for up to seven years, as well as ongoing (daily and nightly) severance, noise, air pollution, vibration, light spill and other amenity and safety impacts. The Committee is more inclined to accept the evidence and conclusions of Ms Rosen and Ms Kliger.

The specific design elements where the Committee has most concern regarding likely negative social and land use of the impacts of the Project are outlined in detail within Chapters 7.2 (Housing), 7.3 (Recreation Facilities) and 7.4 (Community Infrastructure). By

way of summary the key findings of the Committee that have been influenced by the degree of social impact that relate to housing and residential communities include:

- The demolition of 35 dwellings and corresponding dislocation of residents in Bendigo Street, Hotham Street and Alexandra Parade North associated with the Hoddle Street flyover and the construction of a temporary sidetrack in Precinct 1. The Committee finds that both these ancillary elements fail the CIS evaluation and performance objective for Land Use and Infrastructure as they pose unacceptable impacts arising from dwelling demolition, as well as unacceptable impact on resident amenity and safety for those that have an interface with the Project;
- The demolition of 55 residential properties, and dislocation of residents in Manningham Street required to facilitate the two main elevated structures identified as 'Footscray Rd to EWL (Stage One)' and 'EWL (Stage One) to Footscray Road' that head south out of the western tunnel portal and then form Part B of the Project Alignment. The quantum of houses to be demolished and the corresponding social dislocation in this one location is remarkable, significant and un-paralleled in Melbourne's mid-term (generational) history. Significant negative social impacts will also be recurring for the residents and community and social infrastructure of the Flemington Housing Estate; and
- The demolition of 13 houses in Bent Street and the intrusion of a proposed elevated freeway viaduct generally between 8 to 10m from the frontage of an apartment block containing 57 newly refurbished apartments at 18 Bent Street. Significant negative social impacts will also arise from the alignments negative impact on the Moonee Valley Creek open space corridor and from the intrusion of visual and noise impacts with the proposed Arden-Macaulay urban renewal area.

The key findings arising from the Committee's assessment of the Project Impacts on active sports fields and local parkland include:

- Within both the City of Moonee Valley and Moreland City Council Committee does not accept, that the Project has adequately assessed or minimised the impacts on sporting fields and the local space network; and
- The Committee considers a range of remediation works within the City of Moonee Valley are required for the Project to be acceptable in relation to its impacts on open space in the municipality. The Committee has determined that there is sound justification for a range of works to be funded by the LMA / the Project to make good an extensive range of impacts on Council's active sports ovals to ensure that they remain fit-for-purpose.

The key findings arising from the Committee's assessment of the Project Impacts on Community Facilities include:

- With three notable and significant exceptions, the Committee considers that the impacts on the majority of community facilities abutting the Proposed Project Boundary (such as schools and education institutions, health centres and hospitals, some community centres, community gardens, museums, and libraries) are likely to be able to be adequately addressed by the implementation of existing and modified Performance Requirement outcomes; and

- The impacts on the Flemington Community Centre (and the associated the Debney's Park Playground) and on the Flemington Community Garden have been assessed by the Committee as unacceptable. The Committee considers that the Project alignment/boundary is too close to these facilities and that the corresponding noise, visual intrusion, air pollution, displacement, compromised real and perceived safety, overshadowing, and light spill render the facilities not fit-for-purpose.

The Committee refers to Chapter 7.4.2, 7.4.3 and 7.4.4 for more detailed discussion regarding the concerns of the Committee in relation to land use and social impact issues associated with these aspects of the Project.

The Committee accepts the LMA submission that there will be a number of broad social benefits arising from the project and that where the project is in-tunnel social impacts have been largely avoided. However, as summarised in this part of the Report and explained in some depth in Chapter 7, there are numerous design features and elements of the Project that, in the opinion of the Committee, will pose unacceptable social impacts. They are not again repeated here. This finding should be read in conjunction with the Findings and Recommendations contained in Chapters 7.2.5, 7.3.5 and 7.3.6.

## **15.3 Business Impacts**

### **15.3.1 Introduction**

The CIS acknowledges that *“major impacts would be experienced by individual landowners, households and businesses affected by the project’s property acquisition requirements”*.

The major business impacts identified within Precinct 1: Hoddle Street (Eastern Portal) and Precinct 2: Alexandra Parade (Tunnel), are associated with the proposed demolition of a row of 18 commercial properties with frontage to or in the vicinity of Alexandra Parade (northern side) from Gold Street to Smith Street. The demolition is required to provide the temporary sidetrack during tunnel construction. The CIS acknowledged that that the impacts on these businesses will be considerable, however once the once Project approval is granted the *“acquisition and compensation process would be triggered immediately, allowing businesses to close or relocate”*.

The CIS contended that *“while the impacts will be significant they will be mitigated by the financial compensation process and by providing timely information about the project’s progress”*. The CIS noted the land required for the temporary sidetrack *“would be available for redevelopment once construction in this precinct is completed”*. Within Precinct 1, the CIS identified that businesses not directly affected by acquisition could be disrupted during the Project’s construction. Potential impacts listed included *“reduced access to services and customers, loss of parking and changed traffic conditions, as well as noise and dust impacts”*. The CIS noted that these impacts would be minimised through the adoption of traffic management measures by the contractor as part of the Construction Environmental Management Plan.

Within Precinct 2 the most significant business impact identified in the CIS related to the loss of passing trade that is expected to result from the reduction in through traffic. The Business Impact Assessment estimated that a \$3.2 million reduction in turnover will occur in the Project’s first year of operating, primarily borne by the two petrol stations operating in

the Precinct. Within Precinct 2 is the former Fitzroy Gasworks site (on the western corner of Smith Street and Alexandra Parade) which is occupied by a number of businesses. The CIS indicated that *“as this site would be used as a temporary laydown area during the project’s construction, these businesses would be required to relocate”*. The CIS estimated approximately *“six businesses would need to relocate, resulting in a loss of around 36 jobs”*.

The business impacts arising from property acquisition within Precinct 3: Royal Park (Western Portal) is projected to be minimal. The CIS stated that the only commercial property to be acquired in the Precinct is the commercial yoga studio currently operating from Ross Straw Field. While noting only commercial property is to be acquired, the CIS stated that Businesses could be disrupted during construction by impacts that may include *“reduced access to services and customers, as well as noise and dust impacts”*. The CIS stated that:

*In particular, it would be important to limit disruption for patients and visitors at the Royal Children’s Hospital and the Royal Women’s Hospital, for workers and visitors at the Melbourne Zoo, for services in the Parkville youth justice precinct and for businesses in the Parkville Knowledge Precinct.*

The CIS stated that these businesses employ approximately 21,700 workers (including the University of Melbourne).

Within Precinct 4: CityLink, the CIS stated that the only identified business impact related to the need to occupy temporarily a small section of land at the Moonee Valley Racecourse, including a private access road, for construction purposes. No mention in the CIS is made of the concerns expressed by Moonee Valley Council regarding business impacts associated with traffic congestion in nearby activity centres.

The commercial impacts identified in the CIS within Precinct 5: Port Connection, arise from the acquisition of 12 commercial properties. A number of businesses will potentially be significantly impacted by the occupation of a number of car parks for construction and laydown areas. The CIS stated that in total, *“the acquired businesses are estimated to employ 73 people”*. The CIS noted the sites for acquisition include:

*The Vision Australia’s guide dog training compound (currently under construction) – a facility of national importance that is closely linked to a number of Vision Australia operations in this area (including an office on the corner of Stubbs and Macaulay Streets and housing for vision impaired clients who come to the Barrett Street facility to receive training with their allocated guide dog).*

The CIS appeared to dismiss the impacts on the Vision Australia site and other businesses in the Precinct, observing:

*It should be noted that none of these businesses are likely to remain in place unchanged over the longer term as the Arden-Macaulay Structure Plan is likely to lead to a shift to more intensive mixed development. Already, one of the business sites that would be acquired has been marked for residential development, with its current use as professional offices and warehousing expected to continue only until redevelopment plans could be finalised.*

The Committee's assessment of business impacts focuses on whether the impact of the Project has effectively responded to the CIS Land use, dwellings and infrastructure objective, being "to minimise adverse impacts and achieve appropriate integration with adjoining land use, including minimal displacement of existing land use activities and dwellings". It is this goal that Chapter 16-2 lists as the relevant CIS Objective.

### **15.3.2 Key Issues**

The key business impact issues arising from consideration of the CIS, submissions and evidence (not in any specific order) include:

- Business impacts associated with demolition of businesses to provide a temporary sidetrack in Precinct 1: Hoddle Street (Eastern Portal);
- Impacts on the Urban Camp in Precinct 3: Royal Park (Western Portal);
- Potential impacts on activity centres in the City of Moonee Valley in Precinct 4: CityLink;
- Potential business and economic impacts on the Arden-Macaulay Urban Renewal Area in Precinct 5: Port Connection; and
- Potential impacts on Vision Australia Guide Dog Centre in Precinct 5: Port Connection.

Each of these issues is addressed in turn. The Committee's overall conclusions regarding the whether the Project has had sufficient regard to business impacts of the Project are discussed in its Findings and Recommendations at Chapter 15.3.4.

### **15.3.3 Submissions and Evidence**

#### **(i) Temporary sidetrack (Precinct 1: Hoddle Street -Eastern Portal)**

The submission by Mr Sumner, of Aspect Town Planning, on behalf of Schotts Home Emporium (Submission 912) and Document 292(a) and (b) opposed the lack of consideration that the Project design has had in regard to land use impacts on Hoddle Street, and the service lane to the north of the proposed interchange. The owners of the Emporium are concerned about the direct business impacts they are likely to suffer due to loss of trade due to restricted parking and access. The submission requested that should the Project proceed, due consideration of their site specific issues be taken into account, and that if there is any loss of business, that appropriate compensation be provided. The impacts identified included:

- *Permanent loss of parking along the western side of Hoddle Street opposite Schotts Home Emporium;*
- *Temporary loss of parking along the western side of Hoddle Street opposite Schotts Home Emporium during the construction phase;*
- *Loss of vehicle access to Noone Street as a result of the design and/or during construction;*
- *Road works blocking access along Hoddle Street; and*
- *There is no detail regarding the works to occur in front of Schotts Home Emporium and along the Hoddle Street service lane.*

Ms Stoettrup's response to the submission on behalf of Schotts (contained in Appendix C of her report) stated:



*Consideration of car parking is included in Traffic Performance Requirement (T1), which requires that the design of the Project is optimised in consultation with appropriate road management authorities as part of the detailed design process to minimise loss of car parking. Managing vehicle access for staff and customers to Hoddle Street may need to be reconsidered with increased traffic in Hoddle Street*

The Response to Submission table in the LMA's closing submission stated that "Performance requirements T1 and T2 relate to traffic impacts on parking during and post construction".

The submission by Mr Radisich of Associated Town Planning Consultants on behalf of Provans Timber and Hardware (Submission 82 and Document 293) noted that due to the location of their business in the designated sidetrack area of the Project, "the property is being acquired by the Linking Melbourne Authority". Provans have been advised that they are required to vacate the property by June 2015. The submission noted that the relocation of the business will require a considerable financial investment by Provans and that existing uncertainty regarding the configuration/alignment of Alexandra Parade and Hoddle Street is resolved. They argued that their decision to relocate to the proposed new site cannot be reasonably made until other issues, such as access, are resolved.

The LMA responded to this submission via the production of a briefing note (Document 438), which concluded:

*It is understood that Provans intend to use the roller door at 168-174 Alexandra Parade for truck egress. The existing roller door and road width combine to limit the size of vehicle that can currently exit the building from this location. The same or equivalent level of access will be maintained.*

*The final configuration of the Alexandra Parade/Hoddle Street intersection will depend on a number of factors, including the structures associated with the proposed elevated EWL entry ramp and EWL exit ramp. The provision of access to the properties in question will need to comply with Performance Requirements T1, T2, TS and LU2.*

Ms Stoettrup's response to the submission noted:

*It is possible that Provans business would suffer if the access arrangements are diminished; timber supplies arrive by truck and the ability to use larger trucks provide productivity benefits. Likewise, loss of public car parking arrangements may impact on the business. Consideration of car parking is included in Traffic Performance Requirement (T1), which requires that the design of the Project is optimised in consultation with appropriate road management authorities as part of the detailed design process to minimise loss of car parking. It is proposed that the detailed design discussions continue in order to maintain access and that replacement car parking is identified if the slip lane must be moved.*

As identified in the evidence statement of Ms Stoettrup, the owners of the property at 8 Hilton Street claimed that the property cannot be leased or sold in the current environment. The owners requested that their property at 8 Hilton Street be acquired. The owners of the

property at 135 Gold Street, adjacent to the Provans Hardware Store, also requested that their property be acquired.

In response to these submissions, Ms Stoettrup commented:

*The properties are outside of the Proposed Project Boundary, are not proposed to be acquired, and there is no obligation under the Land Acquisition and Compensation Act to acquire the properties. If the properties are contiguous with an area identified for urban renewal post construction, it may be beneficial to acquire them, use them during the construction phase and then include them in a larger consolidated parcel for renewal post construction. I am instructed that LMA will continue to engage with property owners to discuss opportunities to mitigate project impacts.*

Ms Stoettrup did not accept the submissions which questioned and opposed the claims in the CIS that the demolition of houses for the sidetrack will, post construction, provide urban renewal opportunities which represent a positive outcome for the Project. Her evidence was that:

*Urban renewal in areas close to Melbourne's CBD is important to the future development of Melbourne. The opportunities for further land use change and intensification in the area between Smith and Wellington Streets are specifically recognised in the City of Yarra's adopted North Fitzroy Gasworks Precinct Urban Design Framework (UDF) 2008. The UDF outlines clear land use and built form direction for the precinct between Smith and Wellington Streets, including the potential for "incremental redevelopment to realise higher intensities and more desirable mix of land uses."*

**(ii) Urban Camp (Precinct 3: Royal Park-Western Portal)**

The Committee heard from Mr O'Sullivan and Ms Whitby of the Urban Camp in Royal Park (Document 496), who advised of their concerns about the Project. They said:

*To date, Urban Camp has received milestone reports or key project updates from Linking Melbourne Authority (LMA) and all advice received in person and in writing, has reported that Urban Camp would not experience any significant impact to operations as a result of the East West Link Project.*

*In recent meetings, this advice has not changed from LMA, however has significantly shifted from other bodies. This is a result of shifting construction plans and Urban Camp's proximity.*

*Unfortunately there will now be significant impact to operations and a compromised product. As you can appreciate, this is of great concern to the Executive and Board of Urban Camp, staff and stakeholders.*

*Urban Camp is a product that must be preserved for the benefit of regional Victoria and the State and we look forward to your support in ensuring this occurs. This position is shared by Urban Camp's land manager, City of Melbourne.*

*We acknowledge that there could be impacts to the business, as noted in the Comprehensive Impact Statement (Chapter 16) including but not limited to access, noise, light and dust. In this regard it is clear that the impacts on a residential program are materially different to those affecting a 9 to 5 business and require deliberate action to ameliorate and resolve.*

...

*We understand that responsibility is to be delegated to the successful consortia through negotiated solutions to protect our assets and experience. We believe it is imperative that the solutions or options available to the tendering consortia be considered before their tender is developed, budgeted, finalised and submitted. We are happy to brief our requirements so that the consortia receive a comprehensive understanding of our 24x7 hospitality and accommodation requirements. This will inform consortia budget for the alternative operational plans that may be required to ensure our continuing comprehensive delivery.*

The presentation slides noted among other things, that their three options included either maintain location and operation, secondly they could relocate temporarily (or permanently) or thirdly they could close temporarily (12 months). The final slide stated that what they sought, this being:

- *Clarity;*
- *Clear construction timelines and impacts;*
- *Timely information - pre, during, post;*
- *Safe, secure and enjoyable environment to continue to delivery Urban Camp experiences - for our members, campers and staff; and*
- *Full recompense to ensure sustainability.*

### **(iii) Activity Centres in City of Moonee Valley (Precinct 4: CityLink)**

Mr Henshall identified one of potential impacts of the Project within Moonee Valley was on the City's local roadways and corresponding impact on the function of its activity centres (Document 152). Mr Henshall was perplexed, and disagreed with the claim in the CIS, that Moonee Valley:

*... would not experience any major impacts during the project's construction or operation, with impacts generally confined to the acquisition of small strips of public land along the City Link alignment to accommodate road widening and temporary construction areas. (CIS, Ch8, p16)*

In relation to likely impacts on Activity Centres within Moonee Valley, Mr Henshall stated the following:

- *Moonee Ponds: would likely be impacted by increased traffic volumes, where capacity already reached.*
- *Adds to vehicle congestion, air and noise pollution, safety and parking issues.*
- *Reduction in amenity can lead to loss of shopper/visitor patronage of local business.*
- *Mt Alexander Activity Centre Structure Plan (updated 2012) seeks "traffic calming", not an increase in traffic.*

- *Racecourse Road: Increased traffic coming of EWL via Elliot Avenue. But no traffic volumes for Racecourse Road provided in CIS.*
- *Negative effects on shopper/visitor patronage can be anticipated, and therefore on business levels.*
- *Business Impact Assessment does not identify any business impacts on Moonee Valley - but impacts are not confined to just properties located within the tightly defined 'Proposed Project Boundary'.*
- *Passing trade is unlikely to generate much benefit for businesses in these activity centres, as the EWL traffic is 'destinational'; it is not on a 'shopping trip'.*

Ms Stoettrup responded to a number of the above claims (Document 56). She argued that given that the Project is a major strategic and city shaping initiative, it is likely to have widespread effect across Melbourne and beyond. These effects include agglomeration benefits, and increases and decreases in business and property values outside of the Proposed Project Boundary as a result of a change in their relative accessibility. She considered changes across Melbourne in business activity levels are recognised as wider impacts (positive or negative) and acknowledged that they have not been measured as part of this assessment. Specifically in relation to the impacts on the activity centres in Moonee Valley, Ms Stoettrup concluded that they *“are unlikely to suffer such substantial relative loss of amenity as a result of traffic from East West Link Part A or Part B that trade in the businesses in the activity centres will be significantly impacted.”*

Ms Hicks stated that Mr Henshall’s evidence be preferred to that of Ms Stoettrup’s whose evidence should be given little weight. She said:

*There are several reasons for this including the involvement of GHD in the drafting and editing of her report.*

*From her initial analysis, she moved away from acquisition being the only substantive impact but undertook no assessment of Precinct 4.*

*Her assessment of the impact on Activity Centres was extremely cursory – more a throw away line.*

*Having accepted in the end that one needs to look beyond businesses in or adjacent to the property boundary, her assessment was haphazard and minimal. For example, she could provide no rational for a failure to look at businesses in the ALT development which include a supermarket.*

*Through Mr Morris we now have confirmation that she says she considered all of the traffic analysis in forming her views on the impacts on the activity centres. As she was unable to confirm which parts she relied on when she gave her evidence, I could not cross examine her on her understanding of that material.*

Ms Hicks stated that Mr Henshall’s evidence was largely unchallenged and that he has relied on his considerable experience of working with strip shopping centres in forming the view he has of the impact on more traffic in such centres.

The LMA’s final submission (Document 525) in respect of the issues raised by the Moonee Valley City Council, stated:

*... there is no sensible basis upon which the Committee can conclude that the impacts of the Project on the Moonee Ponds Activity Centre, the Mount Alexander Road Activity Centre, and the Racecourse Road Activity Centre, will be adverse to any significant degree.*

*Indeed, the position of the Council in this respect appears to be wholly informed by Mr Henshall's view that increases in vehicular traffic through activity centres will necessarily result in them being less desirable locations in which to shop. As Mr Henshall conceded in cross-examination, however, his opinion in this regard was based wholly on anecdotal observations and was not supported by any studies of any kind. In the LMA's submission, an equally plausible outcome of an increase in vehicular traffic through these centres, will be an increase in trade and vitality.*

**(iv) Arden-Macaulay Urban Renewal Area (Precinct 5: Port Connection)**

In relation to Arden-Macaulay, Mr Henshall concluded that there is a general lack of information to make a considered assessment of the net benefits of the Project (Document 152). He noted that depressed property values are a likely outcome from impacts of reserving land for Part B with no determinate timeline and commitment to construct it which will lead to less investment in urban renewal and development than anticipated in the Arden-Macaulay Structure Plan. His evidence was that the Part B alignment will result in less investment and less employment in the identified urban renewal area, less high residential development and therefore reduced ability to accommodate population growth. Mr Henshall stated that the CIS should recognise adverse impacts beyond the tightly defined Proposed Project Boundary.

Mr Pitt for the City of Melbourne argued that the construction of Part B will not be the driver of change in Kensington and North Melbourne, and stated:

*It is a question of semantics as to who would be the agent of change, Part B (in respect of which there is no commitment for it being built within any foreseeable time) or development within Arden-Macaulay where the urban renewal of that area is identified in Plan Melbourne (acknowledging that so is the East West Link) and where Amendment C190 would have been through the Panel process had it not been for the intervention of this project.*

Ms Stoettrup, dismissed submitter concern and opposition to the Part B viaducts. The key issues raised by submitters were that Part B will compromise opportunities for the Arden-Macaulay area, and that the viaduct should be placed in-tunnel or moved to the east side of the Viaduct. Her evidence statement responded to these submissions by noting:

*Tunnels would have the benefit of not impinging on land uses, but are expensive. A range of design options would have been examined as part of the early studies, prior to the CIS.*

**(v) Vision Australia Guide Dog Centre (Precinct 5: Port Connection)**

Vision Australia Ltd (Submission 332) is a not-for-profit organisation and leading provider of blindness and low vision services in Australia. It operates the Seeing Eye Dogs facility in

Barrett Street, Kensington. It is the second largest producer of dog guides in Australia. Dr Murfitt, the Chairperson of Vision Australia informed the Committee (Document 312) that a very significant purpose fit upgrade of the facility has just been completed. It incorporates a Breeding Centre and 60 dog accommodation kennel. The submission noted that the proposed Port Link component and Arden Street on-ramp will require acquisition of three quarters of the Vision Australia site. He indicated that the area within the Proposed Project Boundary includes approximately one third of the existing administration and training building and well as the entire new kennel building. This would leave Vision Australia with a part building and a new breeding centre with no kennelling facilities. Dr Murfitt submitted that *“the impacts of the East West Link roadway on Seeing Eye Dogs Australia is catastrophic”*. He stated that the facility would be rendered unfit for purpose. Dr Murfitt reiterated that Vision Australia oppose the Port Link and Arden Street Ramp elements of the Project.

The Business Impact evidence of Ms Stoettrup noted that the Vision Australia business and the jobs it provides are generally in accordance with the strategic direction of the Arden-Macaulay Structure Plan. Having made this admission, the evidence cautioned the following:

*However, there is potential for conflict in the future as future residents may take umbrage at the noise from some 90 to 110 dogs in the kennels. Relocation is also difficult as the process of finding a suitable site, obtaining permits and undertaking the development is lengthy (having taken five years for the current redevelopment). A sensitive approach which allows this use to continue in the precinct for as long as it is viable is recommended.*

*It is understood that LMA is working with Vision Australia to fully understand the impacts of Part B of the Project on Vision Australia in order to mitigate and reduce those impacts as much as possible.*

The LMA’s closing submission (Document 525) in response noted:

*... the LMA acknowledges that if the construction of the Project is undertaken along the alignment of the Reference Project it may give rise to impacts upon the operation of the facility.*

*As discussed earlier in these submissions, the extent of potential impacts on both SP AusNet and Vision Australia will depend on the ultimate alignment of Part B. Indeed, SP AusNet tabled a document indicating that the impacts would be largely alleviated were the alignment to run immediately adjacent to CityLink.*

The LMA’s reply to submissions summary stated:

*LMA will continue to work with Vision Australia to minimise disruption to the Seeing Eye Dog Facility at Barrett St.*

The presentation by Mr Smith (Document 325) for the Kororoit Institute (Submission 313) and the Moonee Ponds Creek Co-ordination Committee observed that the impacts on the new Guide Dog Training Centre (and on SP AusNet West Melbourne Terminal Station) were but two of *“no end of reasons to step back down the decision tree in quest of alternatives”*.

The Committee inspected the Vision Australia Barrett Street facility post hearing. The site inspection was informative. As a result of the inspection, the Committee accepts the submission of the Vision Australia that the facility will become non-functional and unviable for its current purpose, if the land acquisition proposed in the CIS was to eventuate.

#### **15.3.4 Discussion**

##### **(i) Temporary sidetrack (Precinct 1: Hoddle Street - Eastern Portal)**

The Committee has already commented at length (refer Chapters 6.3, 7.2 and 8.2) that it considers unacceptable, the significant negative impacts arising from the proposal to construct a temporary sidetrack on the north side of Alexandra Parade. The economic and business impacts, including the forced closure of 18 businesses adds to the Committee's weight of concern. While the Committee was informed that the LMA is actively engaging with a number of the businesses, and that businesses will receive compensation arising from the compulsory acquisition of their properties, it considers these actions fall short of "*mitigating the impacts*" arising from the demolition. In relation to the purported consequential benefits of urban renewal and redevelopment opportunities that will be created, the Committee acknowledges that economic benefits will flow from the redevelopment, including jobs and flow on economic stimulus from construction activity. While some businesses may re-settle in the new urban form that eventuates some time post construction, this does not justify or make good the destruction of businesses that have been operating in some instances for a century. The Committee considers that if the temporary sidetrack is advanced as a Project element contrary to the Committee's recommendation, further consideration should be given to property acquisition to residential and business property owners abutting the construction zone.

##### **(ii) Urban Camp in Precinct 3: Royal Park (Western Portal)**

The Committee agrees with the submission presented on behalf of the Urban Camp that the business impacts and issues arising from their residential retreat and temporary accommodation function, pose different issues compared to a conventional 9 – 5 commercial operation. Based on the Committee's site inspection, and description of the works that are likely to be undertaken within the immediate environs of the Urban Camp (as described by the LMA and reflected in its commentary on soldier piles and edge retaining walls in Document 220), the Committee accepts the concern of the submitter. The Committee agrees that it is unlikely that the business will be able to operate viably and safely during the construction period. The Committee considers that the LMA should be proactive in resolving these matters. Providing fair and reasonable compensation and reasonable costs associated with remediation strategies (relocation and or temporary closure) should be accommodated by the LMA/the Project.

##### **(iii) Activity Centres in the City of Moonee Valley in Precinct 4: CityLink**

Having considered the submissions and evidence before it, the Committee does not share the concerns expressed regarding the potential negative impacts on Moonee Valley's activity centres. It is not convinced that there is a reasonable likelihood that the impacts arising from increased traffic moments through the local activity centres from increased Ormond

Road traffic will be such that congestion will increase to a point that shoppers will change their shopping pattern. Conversely, the Committee considers additional traffic flow may result in extra sales from passing trade.

**(iv) Arden-Macaulay Urban Renewal Area in Precinct 5: Port Connection**

As previously discussed (Chapter 7.2), in addition to the 25 properties (12 of which host businesses) proposed to be acquired for “*project structures and construction laydown/depot areas*”, the Arden-Macaulay precinct will experience major immediate and enduring impacts associated with the additional traffic on the proposed Part B viaduct structures. Impacts will include significant noise, visual intrusion, overshadowing, air quality, and lightspill.

The Committee considers the intrusion into this proposed “*dense, mixed-use inner city suburb*” is unacceptable, due to its impacts on the planned residential and mixed use redevelopment ambitions outlined within the Arden-Macaulay Structure Plan Area. The Committee is concerned that the construction of the Arden Street ramps may further compromise the existing and future mixed use residential amenity of the area.

As the Committee Terms of Reference do not extend to the consideration of broader economic and cost-benefit considerations, it does not support the implied conclusion by Ms Stoettrup that a Tunnel option through the precinct would be cost prohibitive, where she said:

*Tunnels would have the benefit of not impinging on land uses, but are expensive. A range of design options would have been examined as part of the early studies, prior to the CIS.*

However, the Committee does accept her observation that a Tunnel would have the benefit of not impinging on land uses.

**(v) Vision Australia Guide Dog Centre in Precinct 5: Port Connection**

The Committee is perplexed with the LMA’s response to the submission on behalf of Vision Australia. It is clear to the Committee having inspected the facility, that construction of the viaduct within the Proposed Project Boundary through Vision Australia’s property will render the facility unsuitable and unusable for its purpose. If Part B of the Project is to be built on its current alignment, the breeding and training facility will need to close. Once this occurs, the other extensive and aligned business operations that Vision Australia has in the neighbourhood will also become untenable.

The Committee is satisfied with the submissions before it that like the apartments at 18 Bent Street, the presence and redevelopment of Vision Australia site seemed to emerge as a very late surprise for the Project design team. The submission and evidence advanced during the Hearing that questions the longevity of Vision Australia operations in the Precinct due to a perception that they may be inconsistent with the long term urban renewal ambitions articulated in the Arden-Macaulay Structure Plan are dismissed by the Committee. The facilities that Vision Australia own and operate in the Precinct have existing use rights. The dog breeding and training centre has been purpose built to protect the inhabitants (animal and human) from noise associated with CityLink. The sound attenuation has the benefit of reducing noise impacts associated with their dog breeding and training operations.



The Committee considers the Project's impact on this business will be significant and of such magnitude that, if Part B is constructed in the current alignment through the property, relocation of the facility will be required and compensation will need to be paid accordingly. The costs will be significant. These issues add additional support to the Committee's finding that the impacts associated with Part B of the Project have not been adequately assessed or mitigated, and that this element of the Project should be reconsidered and redesigned via a new process, in conjunction with further resolution of the Arden-Macaulay Structure Plan, and the recently announced proposals for WestLink, as well as the Tullamarine/CityLink upgrade amongst other projects in this vicinity.

### **15.3.5 Findings**

The Committee accepts the submission of the LMA that the Project has substantially avoided and minimised business impacts where the Project alignment is in-tunnel. It accepts, as a general proposition, that the Project will result in some business productivity improvements associated with reduced east-west travel times.

The Committee however finds that the Project's design has a range of unacceptable business impacts including:

- The demolition of 18 businesses (and 18 residential properties) to facilitate a temporary sidetrack on the north side of Alexandra Parade;
- The impacts on the Urban Camp within Royal Park during construction of the Project;
- The impacts on the mixed-use urban renewal ambitions articulated in the Arden-Macaulay Structure Plan; and
- The impacts on Vision Australia's substantial assets within Precinct 5, including but not limited to its recently renovated dog breeding and training facility.

The Committee finds it difficult to reconcile that Ms Støttrup's review of the 255 submissions she was provided with by the LMA did not lead her to conclude that not one additional new, or even a modified Performance Requirement or mitigation measure was justified in order to off-set or minimise business or economic impacts arising from the Project.

Overall the Committee considers that the Reference Project has not adequately minimised to the extent practicable the adverse business impacts of the Proposal. The Committee maintains its primary recommendation that Part B be excluded from the Project.

The Committee has recommended that further consideration be given to property acquisition to property owners (commercial and residential) that about the proposed temporary road alignment if it is determined that the ancillary sidetrack in Precinct 1 is a required element of the Project.

It further recommends that the LMA commence negotiations with Urban Camp to resolve a fair and satisfactory relocation and/or temporary closure strategy and associated fair compensation package, and that it negotiate a fair and comprehensive relocation and compensation package that reflects the need to relocate the Vision Australia dog breeding and training facility to an alternative fit for purpose site and facility, as well as funding to make good associated impacts on other related and nearby facilities, if it is determined that

the Part B viaduct is a required Project element in its current location, as it encroaches Vision Australia's dog breeding and training facility in Barrett Street.



## **Part C: Implementation**



## 16 Environmental Management Framework

Paragraph 3(c) of the Terms of Reference states:

*Make recommendations as to appropriate conditions to be attached to any applicable law approvals: such conditions are to include conditions to address the environmental and urban design performance of the project, having regard to opportunities to manage environmental and urban design outcomes through contractual arrangements that the State may enter into, as outlined in the CIS.*

Paragraph 7(i) of the Terms of Reference is to make recommendations on:

*Whether the Environmental Management Framework in the CIS will provide an effective integrated approach to manage the environmental performance of the project.*

These two tasks of the Terms of Reference have been considered together in this chapter.

### 16.1 Overall Environmental Management Framework

The Environmental Management Framework (EMF) is set out in the CIS Volume 2, Chapter 17. The CIS outlines that a contractor will be appointed under the PPP to finance, design, construct and operate the project. LMA will administer the Project Agreement on behalf of the State Government. The Project Agreement will outline the contractor's obligations for project delivery, and will include the requirement for the contractor to comply with this EMF. The CIS states:

*The bidding process would require the development of outline EMPs for construction and operation that would demonstrate the contractor's approach to achieving compliance with all aspects of this EMF. The outline EMPs would be reviewed and evaluated by LMA and assessed against this EMF.*

The CIS further states:

*The successful contractor would be required to prepare documentation including an EMS and full EMPs to meet the requirements of this EMF. The EMS and EMPs would describe in detail how the contractor would meet the performance requirements and approval conditions and identify, manage and mitigate environmental risks arising during construction and operation (including maintenance).*

The contractor will be required to appoint an Independent Auditor to complete regular audits of compliance with the approved EMPs and approval conditions and provide audit reports to the LMA, the Independent Reviewer, the Minister for Planning and the other regulators and agencies in accordance with the Incorporated Document.

The CIS outlines the relevant roles and responsibilities for environmental management for the LMA, the contractor, the Minister for Planning, regulators and the Independent Auditor at Table 17-1.

Table 17-2 of the CIS outlines the performance requirements, of which specific issues include:

- Transport connectivity;
- Land use, dwellings and infrastructure;
- Visual amenity;
- Noise, vibration, air emissions and light spill;
- Cultural heritage;
- Surface water and groundwater;
- Native vegetation and biodiversity; and
- Solid wastes.

The CIS indicates that each EMP will be prepared in the context of the environmental management systems (EMSs) of the organisation responsible for the activities consistent with AS/NZS ISO 14001 *Environmental management systems – requirements with guidance for use* and relevant legislation, policy and approvals.

The proposed EMF is viewed as providing the structure for:

- Managing the Project in a way that achieves compliance with environmental legislation and encourages continual improvement in environmental performance;
- Establishing and assessing performance against the Project's environmental commitments;
- Developing and implementing appropriate plans and procedures for all phases of the Project; and
- Monitoring, auditing, reviewing and reporting performance.

## **16.2 Key Issues**

The key issues are:

- The adequacy of the EMF to ensure environmental impacts associated with the Project are addressed;
- The consultation process described in the EMF; and
- Accountabilities and responsibilities for compliance and reporting.

## **16.3 Evidence and Submissions**

The EMF presented in the CIS sets out the broad approach and accountabilities for the management of the environmental aspects of the project including the design, construction and operation phases of the Project. The EMF outlines the environmental management governance for implementing the performance requirements for the Project, as well as requirements for the EMS and the EMPs to be adopted by the contractor.

Due to the procurement process being adopted for its construction and operation, a robust and transparent EMF will be critical in providing the level of quality assurance expected by many major stakeholders.

In addition to the information presented in the CIS, the LMA tabled a number of documents at the Hearing which:

- Outlined additional information on the proposed EMF;
- Addressed the role of Performance Requirements in the overall EMF;
- Provided more detail on the approach and requirements associated with the delivery of the project as a Public Private Partnership (PPP).

The EPA submission (Submission 349) supports the implementation of an EMF that outlines governance arrangements for implementing the Performance Requirements throughout the delivery of the Project, as well as requirements for an EMS and EMPs to be adopted. The EPA stated that an EMF consistent with AS/NZS ISO 14001 provides an appropriate standard for the EMF.

The EPA supports the approval requirements for the EMS and the construction and operation EMPs, as well as requirements that include responsibilities for the Minister for Planning, the LMA, an Independent Reviewer and an Independent Auditor. In addition to, or supporting the Independent Reviewer, EPA recommended specialist review is undertaken for particular issues or works. The EPA suggested in its written submission that an Independent Auditor or similar could also be appointed to audit the detailed design of the Project proposals.

In regard to potential construction risks associated with the Project, the EPA proposed the following conditions be included as part of the construction EMP:

- A dust management plan is prepared and implemented to manage dust generation during construction;
- A noise management plan is prepared and implemented to manage potential noise impacts associated with construction;
- Further site-specific data is collected on groundwater quality, levels and flow to better inform the risk assessment and development of mitigation measures;
- A surface water management plan is prepared and implemented to manage potential surface water run-off impacts associated with construction; and
- A groundwater management plan is prepared and implemented to manage potential groundwater impacts, including the risk of “mobilisation” and/or “migration” of contaminated groundwater.

The City of Yarra expressed doubt that the EMF would ensure that any negative impacts are mitigated, and stated in paragraphs 24 (a) and (b) of its opening submission (Document 12):

- *Much of the EMF is couched in terms which render it effectively unenforceable. These include obligations to ‘minimise’ impacts or to take steps ‘where feasible’. As a practical matter, it is likely to be impossible to prove that a proponent had not minimised an impact or that if the proponent claimed something was not feasible, that it in fact was.*
- *Further, while the EMF frequently requires the proponent to consult with ‘stakeholders’, it does nothing to ensure that the views are given serious consideration or otherwise acted upon. This is particularly the case in relation to the social impacts, where the creation of a community liaison group is treated as a panacea – as if simply warning about an impact mitigates that impact.*

Moonee Valley City Council considered the EMF to be too brief and that it took a very narrow and restricted view of potential impacts arising from the Project. The Council expressed concern that the EMF is a “compliance-only approach” which “limits the opportunity for the Project to actually result in improved liveability outcomes arising from the Project”. The reliance on the contractor to consult with the community and stakeholders in



relation to construction and operational activities is a concern, and Council advised that was not confident that issues raised by the Council or the community will be heard and acted upon, particularly during construction.

Individual submitters requested that audit reports, monthly reports and compliance reports be made public. Specifically, some submitters raised concerns that the EMF does not provide any requirement for publication of:

- The EMPs developed by the contractor and approved by the Minister;
- Detailed risk assessments developed by the contractor;
- Compliance reports by the contractor, in particular notifications of non-compliance;
- Reports by regulators and agencies in respect of any non-compliance by the contractor;
- Audit results;
- Reviews or reports by the Independent Reviewer in relation to contractor's compliance with the EMF; or
- LMA advice, particularly in relation to any amendments deemed necessary for the construction EMP.

The Residents Against the Tunnel (RATs – Document 432) emphasised the need for adequate consultation and transparency in the process. Apart from requesting independent audits and review, the RATs suggested in their submission that the EMF *“should also include the requirement for such consultation to take place on a regular basis ... be widely publicised so that the community is aware of and can attend these consultations. Matters raised and proposed response to them should also be required to [be] published within a specified and short time after each consultation”*.

A number of submitters raised issues with regard to the transparency and consultation process for the EMF as part of the Project's implementation. In particular, some submitters (156, 336, 407 and 1424) suggested:

*The Requirement for consultation should be set out that the community must be properly consulted about, in addition to construction and operation activities, the Design Framework, any changes and amendments to the Design Framework, any non-compliance with the EMF, and any variations to the scope of works.*

Ms Mantell (Submission 201) raised issues with compliance and how the community would be notified about any breaches of compliance. Particularly, Ms Mantell stated *“The EMF fails to identify the full range of sanctions, remedies and compensation mechanisms that will apply in the event of any breaches, how they will be applied, and by whom. How will residents affected by any breaches be able to make these known to relevant authorities, and what recourse do they have? The implication is ‘none’. This is unacceptable”*.

## **16.4 Discussion and Conclusions**

The approach of the EMF is not new and has been used previously for large projects that have been subject to an environmental assessment process (whether under the MTPF Act or the *Environment Effects Act 1978*). Examples include the Desalination Plant and the Peninsula Link projects.

Having reviewed the EMF and the changes put forward by the LMA, the Committee concludes that the EMF is a sound framework for managing potential environmental risks associated with the Project as long as there are robust and transparent monitoring and review mechanisms in place to ensure compliance with the applicable approvals, EMF, construction and operation EMPs and performance requirements.

The Committee agrees with the EPA that the appointment of an Independent Auditor to audit the detailed design of the Project is an appropriate mechanism to ensure the design of the Project is in accordance with the EMF and performance requirements. The Committee sees merit in the EPA's suggestion of an Independent Reviewer for particular issues or works associated with the Project, for example air quality monitoring reports.

The Project will cause impacts (although some will be temporary in nature) during the course of construction and potentially during operation (such as excessive noise, reduced air quality). It is important that the Councils, the community and other stakeholders are kept abreast of what is happening during this timeframe. For that reason, the Committee believes that the monthly reports should be made available to the public for information, not just to the LMA as proposed in the CIS (17.5.1).

The Committee agrees with the submissions regarding the need for accountability and public reporting of compliance of the Project against the EMF and EMP. In this respect, the Committee is of the opinion that the audit reports of compliance with the EMP and approval conditions, and the Independent Reviewer's quarterly reports that summarise the contractor's compliance with the EMF over the quarter be made publicly available. This should occur, as a minimum, through provision of such reports on the LMA's website.

The Committee sees benefit in the establishment of a Community Liaison Committee (CLC) with an Independent Chair. The role of the CLC would include providing an avenue for community participation and information regarding the monitoring and implementation of the Project. The EPA has appointed CLCs for other projects where community engagement has been viewed as important in the monitoring and implementation of a project and the Committee believe such an approach would be beneficial to this Project. The CLC could include, for instance, members of relevant parties (LMA, Councils, DTPLI, Contractor(s), EPA and at least three community representatives taken from different precincts in the Project area). The EPA Publication 740 provides relevant guidance on establishing and running CLCs.

As highlighted by some submitters, the Committee notes that the EMF as presented in the CIS does not include a procedure for dealing with complaints associated with the construction and operation of the Project. The CIS does say under s17.5.1 Monthly Reporting that the monthly reports to the LMA will include details of complaints or incidents and corrective and preventative action taken. However the Committee believes that there needs to be a more explicit process of complaints management to ensure that if a community member, Council officer or a regulator has an issue to raise, it is clear who the complaint is to go to and what the process is to resolve any matters. The process is then to be recorded in the monthly monitoring reports.

## 16.5 Findings

For the reasons outlined above, the Committee concludes that the EMF for the Project should be modified to incorporate a number of additional community reporting and complaints management processes. The Committee considers that the most effective means of realising the suggested actions, is via their inclusion in the East West Link Incorporated Document. The Incorporated Document should be amended to include the following:

- Establishment of a Community Liaison Committee with an Independent Chair;
- The EMF to provide a mechanism for public reporting of compliance against the EMF and EMPs (this may be the Independent Auditor's report which becomes available on the LMA's website for instance); and
- The EMF to provide a mechanism for complaints management that is transparent to the public and where follow up action is reported.

The Committee further concludes that dust, noise, surface water, and groundwater management plans as well as collection of further site-specific data on groundwater quality, levels and flow should be undertaken to better inform the risk assessment and development of mitigation measures as part of the EMP. These should also be specified in the Incorporated Document.

The above findings are reflected in the Committee's revised version of the East West Link Incorporated Document in Appendix D.

## 17 Performance Requirements

### 17.1 Introduction

Performance Requirements for the Project were exhibited in the CIS in Table 17-2 in Section 17.3. As put in the CIS, the Performance Requirements are:

*... expressed in terms of outputs and specify the limits and processes that must be followed to achieve an acceptable environmental outcome.*

The Project contractor would need to comply with the Performance Requirements and the specific issues addressed by them are listed in Chapter 16 of this report. The Performance Requirements are intended to operate alongside any statutory controls that exist such as through the *Planning and Environment Act 1987* and the *Environment Protection Act 1970*.

The Committee is required to consider the Performance Requirements and make recommendations on the overall environmental and urban design performance of the Project under Task 3 of its Terms of Reference.

At the Committee's direction, the LMA discussed the exhibited Performance Requirements with the Councils and the EPA prior to the main Hearing to determine if agreement could be reached on additional or revised items.

### 17.2 Key Issues

The Performance Requirements are a critical element of successful project delivery. They attracted considerable attention through the Hearing process, particularly from Local Government. The Committee considers the major issues with the Performance Requirements are as follows:

- The scope of the Performance Requirements and whether they address the full range of issues likely to be encountered in project implementation;
- The specific wording of the Performance Requirements and whether they can be improved to provide clarity and certainty in implementation; and
- How the Performance Requirements should be implemented during project delivery.

These issues are discussed below.

### 17.3 Submissions and Evidence

No specific evidence on the Performance Requirements was called in chief, but a number of experts for various parties made particular recommendations on technical issues. For example the Groundwater conclave resulted in a number of changes agreed amongst the experts (and accepted by the LMA). These changes have been considered in the Assessment chapters of this report and findings made accordingly. The suggested changes were consolidated in the LMA's closing submission (part of Document 525).

Mr Morris for the LMA put in his opening submission that the rationale for a using a performance based approach rather than a prescriptive approach was founded on two major premises. First was the need to respond to the project delivery model (a PPP) and foster innovation, and secondly to provide flexibility to allow the contractor to respond to opportunities and challenges

He submitted that the Performance Requirements will “*constitute binding contractual obligations on the part of the successful contractor under the Project Agreement*”. Mr Morris noted that the LMA expects that in making the s73 approval decisions under the MTPF Act, that the Minister will exercise his powers to apply conditions under s80(1)(a)(iii) to ensure that the EMF and Performance Requirements are made binding contractual obligation on the successful tenderer.

Mr Morris cautioned that because of the contractual nature of project delivery and Performance Requirement application, care should be taken in their drafting not to include elements that would rely on legislative requirements that are not part of the project assessment. This was said to include making Performance Requirements subject to approval of a responsible authority, a term more synonymous with parts of the *Planning and Environment Act 1987* not relevant to this project assessment.

Submitters recognised the importance of the Performance Requirements in the Project assessment, given that the Reference Project is only conceptual, and the Performance Requirements will be determinative in shaping the eventual actual project to be constructed.

A number of submitters were critical of the Performance Requirements for being too imprecise. For example, in opening submissions for the City of Melbourne, Mr Pitt noted:

*It is submitted that further uncertainty arises where Performance Requirements are not empiric and are expressed in aspirational terms such as "optimise" or "minimise" or minimise "to the extent practical" or like expressions, presumably to be assessed by the independent reviewer during the construction phase, after contracts have been let, and without any other right of review.*

Mr Pitt argued that the LMA’s reluctance to introduce more accountability and precision will compromise implementation and the potentially the attainment of critical design elements. He expressed concern that Performance Requirements which related to, for example, the protection of Royal Park, may be traded off against costs and ease of construction across multiple competing objectives and precincts.

In later submissions he reflected on the use of mandatory, empiric provisions that had been supported in the Melbourne Planning Scheme by Panels. He submitted that such are necessary for this Project. Given that the LMA does not have a defined project, it is appropriate to ensure acceptable outcomes by the mandatory definition of Performance Requirements.

Ms Hicks for the City of Moonee Valley submitted that mandatory Performance Requirements may be necessary in some cases where a discretionary approach would not achieve acceptable outcomes.

Mr Pitt strongly submitted that the consideration of Performance Requirements should commence with a consideration of planning policy under the *Planning and Environment Act 1987* and the relevant planning scheme, given that a planning scheme amendment is one of the applicable approvals.

He provided an extensive analysis of policy and referenced a number of significant court cases in support of his argument, and concluded that:

*The Council submits that each of the revised performance requirements [Document II] and matters raised its submission that would require conditions in an approval decision are matters that are validly and appropriately to be imposed defining the physical and operational manifestations of the Project or addressing direct and indirect impacts of the Project.*

Mr Pitt further submitted that for such Performance Requirements to be enforceable, they must be a condition in the relevant applicable approval, that is, in the Incorporated Document that is part of the planning scheme amendment. He reaffirmed this point in the City of Melbourne's closing submission by providing detail on how the wording might be effected.

Mr Finanzio for the City of Yarra rejected the propositions put by the LMA that the Committee should be constrained in its consideration of Performance Requirements by the contractual negotiations that may occur later. He submitted that the Committee has available to it all the "... tools which are ordinarily available to it to guide outcomes, set direction and to mitigate unreasonable impacts are also available to it here ..." including that of making Performance Requirements subject to the satisfaction of a responsible authority.

An individual submitter, Ms Petra Stock, who was chiefly concerned with impacts on the Zoo, submitted that in her experience as an engineer, Performance Requirements would usually be developed using SMART criteria. That is, they should be Specific, Measurable, Achievable, Relevant and Time-bound.

Mr Morris for the LMA, in response tabled Document 494 which suggested that the SMART criteria may be useful in a management or public policy context but is less relevant in a project context such as this. He conceded that:

*While the SMART criteria may be of assistance for some of the more technical performance requirements where clearly defined and specific goals or targets can be set, there will be many other performance requirements where this approach will be inappropriate and is likely to lead to narrowly defined and inflexible outcomes or results.*

A number of parties provided 'tracked changes' versions of the Performance Requirements including various expert witnesses, the Cities of Melbourne, Yarra and Moonee Valley, the EPA, Mr Ursida and Mr Herington.

The LMA responded to these changes in closing submissions (Document 525) and, with a few exceptions, did not agree with the approach suggested by submitters.

## **17.4 Discussion**

Given the approach of assessing a concept rather than an actual project, the Performance Requirements become critical in determining how the eventual project can be delivered within an acceptable framework.

The Committee has commented earlier in this report as to the merits in principle of such an approach in a dense, inner urban environment with significant amenity, community, heritage, environmental and economic values.

#### **17.4.1 Scope of Performance Requirements**

In general terms the Committee considers that the Performance Requirements identify and address an appropriate range of issues that might be expected for a major project such as this. However, given the lack of an actual project to consider, and the consequent lack of a detailed design, the Committee's conclusion is thus qualified by the information available through the Reference Project.

Given the lack of detailed design regarding the technical delivery of the Project, particularly the tunnel and elevated structure construction, the Committee's ability to provide decisive comment on performance is limited.

#### **17.4.2 Wording of Performance Requirements**

The Committee understands the LMA's desire that the Performance Requirements be worded to maintain a high level of flexibility for the successful contractor, so that the range of responses to achieve a particular outcome is broad.

However, the Committee does not think that this a reasonable approach in a highly urbanised context where the community (and many decision makers) have not seen a detailed project design. There is very little certainty as to what the Project will look like and how it will be delivered. This, in the Committee's opinion, supports the proposition that the Performance Requirements should be worded to ensure some reasonable level of third party input (particularly from the affected Councils) where relevant to improve project outcomes.

The risk in not taking this approach is, as put by the City of Melbourne, being where value judgements and decisions need to be made between project design and construction and other values, such decisions may be made out of the public eye and with no evident justification or explanation for any given outcome.

The Committee has avoided the temptation to make Performance Requirements subject to secondary consent where that is not otherwise required by legislation, but has attempted to provide more opportunities for meaningful consultation and input. The Committee has attempted where possible to qualify the use of open-ended terms such as 'minimise' to reference the Performance Requirements to objective criteria or at least more defined subjective criteria.

While some level of flexibility is desirable so that innovative and high quality responses are not prevented, achieving this balance between flexibility and certainty has been at the forefront of the Committee's deliberations in formulating its recommendations.

In relation to the use of SMART criteria, the Committee has not adopted a formal approach of reviewing and forming Performance Requirements against such a system. However it has viewed the Performance Requirements informally against such criteria in order to provide a more consistent approach to wording and structure. In the absence of an alternative design to the Reference Project being provided by the LMA, the Committee considers this is reasonable.

#### **17.4.3 Referencing of Performance Requirements**

The Performance Requirements are proposed to be applied contractually between the successful contractor and LMA.

Given that many of the Performance Requirements are a direct result of responding to planning issues and go to the essence of project impacts and delivery, the Committee does not consider applying the Performance Requirements solely through this contractual pathway is appropriate.

The Committee is making recommendations on the Incorporated Document in the relevant Planning Schemes which effectively authorise the Project to proceed, along with the other Applicable Approvals.

Thus the Committee considers that there should be a stronger and direct link between the planning instruments and the Performance Requirements. The Committee considers that the best way to do this would be to include or link the final Performance Requirements to the Incorporated Document.

The Committee considers this would:

- Provide a more transparent approach to ensure the Project is delivered within the agreed Performance Requirements;
- Assist more effective enforcement action where Project implementation is not meeting Performance Requirements; and
- The Committee further discusses its rationale for including the Performance Requirements in the Incorporated Document in Chapter 18.4 of this report.

## **17.5 Findings**

The Committee finds that the Performance Requirements as amended in Appendix E should be applied to the Project and will assist in reducing the impacts of the final design. To improve certainty and provide for more effective project and environmental management, the Performance Requirements should be included in the Incorporated Document. The Committee has recommended accordingly.



## 18 Planning Control

### 18.1 Planning Scheme Amendment GC2

As discussed in Chapter 3.1, Amendment GC2 seeks to amend the Melbourne, Moonee Valley, Moreland and Yarra Planning Schemes to allow use and development of the land within the Proposed Project Boundary for the purposes of the Project without the need to obtain planning permission or to otherwise comply with the provisions of the relevant Planning Schemes. The Amendment applies to all land proposed to be developed or used for the purposes of the Project, that is for Part A and Part B.

#### 18.1.1 Changes to the Planning Schemes

Specifically, the Amendment proposes the following changes to the four Planning Schemes:

##### **Melbourne Planning Scheme:**

- Amend Planning Scheme Maps 4DDOPT1 and 5DDOPT1 to include a Design and Development Overlay over part of the tunnel and associated structures.
- Amend the Schedule to Clause 43.02 'Design and Development Overlay' to include Schedule 62 applying to land above the tunnel to require a permit for buildings and works that are 15 metres or more below ground level and the referral of applications to the Roads Corporation.
- Amend the Schedule to Clause 52.03 'Specific Sites and Exclusions' to facilitate planning approval for the East West Link Project in accordance with the specific control in the 'East West Link Project Incorporated Document, September 2013'.
- Amend the Schedule to Clause 61.01 to make the Minister for Planning the Responsible Authority for the provisions which apply to the use or development of land for the East West Link Project.
- Amend the Schedule to Clause 66.06 to make the Roads Corporation a referral authority for permit applications required by proposed Schedule 62 to Clause 43.02.
- Amend the Schedule to Clause 81.01 to insert an incorporated document titled 'East West Link Project Incorporated Document, September 2013'.

##### **Moonee Valley Planning Scheme:**

- Amend the Schedule to Clause 52.03 to facilitate planning approval for the East West Link Project in accordance with the specific control in the East West Link Project Incorporated Document, September 2013.
- Amend the Schedule to Clause 61.01 to make the Minister for Planning the Responsible Authority for the provisions which apply to the use or development of land for the East West Link Project.
- Amend the Schedule to Clause 81.01 to insert an incorporated document titled East West Link Project Incorporated Document, September 2013.

##### **Moreland Planning Scheme:**

- Amend the Schedule to Clause 52.03 to facilitate planning approval for the East West Link Project in accordance with the specific control in the East West Link Project Incorporated Document, September 2013.

- Amend the Schedule to Clause 61.01 to make the Minister for Planning the Responsible Authority for the provisions which apply to the use or development of land for the East West Link Project.
- Amend the Schedule to Clause 81.01 to insert an incorporated document titled 'East West Link Project Incorporated Document, September 2013'.

#### **Yarra Planning Scheme:**

- Amend Planning Scheme Maps 1DDOP and 2DDOP to include a Design and Development Overlay over part of the tunnel and associated structures.
- Amend the Schedule to Clause 43.02 'Design and Development Overlay' to include Schedule 15 applying to land above the tunnel to require a permit for buildings and works that are 15 metres or more below ground level and the referral of applications to the Roads Corporation.
- Amend the Schedule to Clause 52.03 'Specific Sites and Exclusions' to facilitate planning approval for the East West Link Project in accordance with the specific control in the 'East West Link Project Incorporated Document, September 2013'.
- Amend the Schedule to Clause 61.01 to make the Minister for Planning the Responsible Authority for the provisions which apply to the use or development of land for the East West Link Project.
- Amend the Schedule to Clause 66.06 to make the Roads Corporation a referral authority for permit applications required by proposed Schedule 15 to Clause 43.02.
- Amend the Schedule to Clause 81.01 to insert an incorporated document titled 'East West Link Project Incorporated Document, September 2013'.

Amongst other matters, the Explanatory Report to the exhibited Amendment notes that it:

- Furthers the objectives of planning in Victoria;
- Addresses environmental and relevant social and economic effects;
- Complies with relevant Ministerial Direction;
- Is consistent with the State Planning Policy Framework;
- Supports the Local Planning Policy Framework and the Municipal Strategic Statement of the Melbourne, Moonee Valley, Moreland and Yarra Planning Schemes; and
- Addresses relevant requirements of the TI Act.

The two key components of Amendment GC2 are the Incorporated Document and the Design and Development Overlay.

#### **18.1.2 Incorporated Document**

What the Planning Scheme Amendment is seeking to achieve is expressed through the Incorporated Document which is proposed to be referenced in Clause 52.03 '*Specific Sites and Exclusions*' and inserted in Clause 81.01 of the four Planning Schemes. The Incorporated Document is provided pursuant to s6(2)(j) of the *Planning and Environment Act 1987* and, as drafted, will prevail over any contrary or inconsistent provision in the relevant Planning Schemes. The control in the Incorporated Document applies to land shown as the 'Project Area' in Sheets 1 to 5 of Figure 1 (of the Incorporated Document).

The proposed section 4.0 '*Control*' provision states that "*no planning permit is required for, and nothing in the Planning Schemes operate to prohibit or restrict the use or development*

of land in the Project Area for construction and operation of the Project". These include but are not limited to:

- A freeway standard road connecting the Eastern Freeway to CityLink and improvements to CityLink and connection to the Port of Melbourne;
- Interchanges and grade separations;
- A new road tunnel and associated infrastructure;
- Earthworks and other structures; and
- Various ancillary activities.

The above are subject to the conditions of Clause 5.0, where it is noted that the use and development and the ancillary activities ***must be*** (Committee emphasis):

- *For the East West Link Project as authorised by the State Government of Victoria under an agreement between the State and the entity appointed to undertake the East West Link Project.*
- *Generally in accordance with the Urban Design Principles in Table 1 of the document.*
- *Undertaken generally in accordance with an Environmental Management Plan prepared to the satisfaction of the Minister for Planning after consultation with the Linking Melbourne Authority. The Environmental Management Plan must be prepared in accordance with the Environmental Management Framework in the Comprehensive Impact Statement for the Project.*

The conditions within Clause 5.0 allow the Environment Management Plan to be prepared and approved in stages of the Project, and to be amended from time to time. It states:

*Amendments to the Environmental Management Plan which provide for a significant change to work methods or scope that results in increased or new environmental risks or impacts must be prepared to the satisfaction of the Minister for Planning.*

The Urban Design Principles have been discussed in Chapter 8, and the Environmental Management Framework, including the content and structure of Environmental Management Plans, in Chapter 16.

### **18.1.3 Design and Development Overlay**

Two new schedules to the Design and Development Overlay (Schedule 62 to the Melbourne Planning Scheme and Schedule 15 to the Yarra Planning Scheme) are proposed to be introduced via Amendment GC2. The Schedules are identical and apply to land within the East West Link Project Area which is either in-tunnel or identified as being potentially affected by tunnel construction or operation. The Design Objectives at Clause 1.0 of each schedule include:

- *To ensure that the development of land above the East West Link tunnel is not adversely affected by the construction or operation of the tunnel.*
- *To ensure that the development of land above the East West Link tunnel does not adversely affect the construction or operation of the tunnel.*

- *To ensure that the Roads Corporation is informed of development above the East West Link tunnel and to facilitate comment by that authority on any specific requirements relating to the development to the extent that it impacts on, or is adversely affected by, the construction or operation of the tunnel.*

At Clause 2.0 ‘buildings and works’, it is stated that a permit is not required to construct a building or construct or carry out works if the buildings or works are less than 15 metres below ground level. Notice and exemption provisions apply. Clause 3.0 notes that a permit is not required to subdivide land. The Decision Guidelines at Clause 4.0 note that apart from the State and local planning policy framework, the Responsible Authority must consider the impact of the construction or operation of the tunnel on and from the development of land above the tunnel.

An additional Design and Development Overlay issue was raised by the Committee in its s57(4) request of the LMA (refer question 46). The question sought a response from the LMA as to whether appropriate planning controls have been drafted in the Amendment to protect the dispersion performance of the ventilation stacks (e.g. overlay height controls for surrounding buildings).

## **18.2 Key Issues**

The key issues to be addressed relate to:

- The form of the Amendment;
- The Incorporated Document, its role in implementing the Project, and the inclusion of Performance Requirements;
- The veracity of the Urban Design Principles;
- The provisions of the exhibited Design and Development Overlay and whether they are sufficient to protect the tunnel, and whether an additional Design and Development Overlay is appropriate to protect the dispersion performance of the ventilation stacks (eg overlay height controls for surrounding buildings).

## **18.3 Submissions and Evidence**

The key submissions about the proposed Planning Controls were provided by the LMA, the City of Melbourne, Yarra City Council and the Department of Transport, Planning and Local Infrastructure (DTPLI) through opening and closing submissions.

### **18.3.1 Form of the Amendment**

In his opening submission for the LMA, Mr Morris observed that in many respects, the Planning Scheme Amendment (Amendment GC2) is “... *the most substantial of the applicable approvals that relate to the Project*”. He went on to say:

*It seeks to introduce, amongst other things, an incorporated document into the relevant planning schemes that will allow the use and development of the land for the purposes of the Project without the need to obtain planning permission and without the need to otherwise comply with the terms of the relevant planning schemes.*

*Whereas the other applicable approvals relate to discrete components of the Project, the proposed Amendment relates to the Project in its entirety.*

Mr Morris noted that there were four key matters relating to the Amendment that the Committee needed to be cognisant of. In summary these included:

- The Amendment is designed to establish a framework within which acceptable outcomes will be delivered, rather than mandating a specific design outcome;
- Whether the Project will facilitate acceptable planning outcomes, rather than best or preferable outcomes;
- The Amendment should be considered to be acceptable, despite it giving rise to potential negative consequences, so long as it implements the objectives of planning in Victoria; and
- In assessing the impact of the Amendment, the Committee needs to be cognisant of the existing planning controls that apply to the land impacted by the Amendment.

In the closing submission, Mr Morris concluded that the Committee should recommend that the Minister for Planning grant the applicable approvals on the terms set out in Appendix A to the CIS. This includes the preparation, approval and adoption of a planning scheme amendment (Amendment GC2) under sections 8, 29 and 35 of the *Planning and Environment Act 1987*.

### **18.3.2 Incorporated Document**

The closing submission on behalf of DTPLI (Document 512) by Mr Townshend in respect of the Incorporated Document, stated:

*The Department does not assume that the Assessment Committee must finally resolve the specific wording of the Incorporated Document and conditions. Nonetheless, the following matters are drawn to the attention of the Assessment Committee concerning the drafting and content of the Incorporated Document.*

In respect of the form of the Incorporated Document, the Mr Townshend stated that the conditions “*should be expressed as stand-alone and numbered conditions which proceed in a logical sequence*”. In respect of the conditions within the Document, Mr Townsend stated that they should acknowledge the following approval steps:

- a. Identification of the authorised project.*
- b. Identification of the Environmental Management Framework.*
- c. Approval of the Construction Environmental Management Plan (CEMP) to the satisfaction of the Responsible Authority.*
- d. Permission to approve the CEMP in stages.*
- e. Condition permitting amendments to the CEMP.*
- f. A requirement that the development be generally in accordance with the approved CEMP.*
- g. A requirement that the development be generally in accordance with the Urban Design Principles.*

In respect of 'Reporting' DTPLI considered that the EMF should clarify the protocol and timing for the provision of audit reports to the Minister for Planning. In regard to 'Land' the submission stated that *"the description of the land in Clause 3.0 of the Incorporated Document and the mapping for the Incorporated Document will need to be finalised upon the approval of the project"*.

The City of Melbourne's closing submission (Document 513) argued that the Performance Requirements should be included within the Incorporated Document (as a new Table 2) for transparency, and to allow the right of enforcement under the P&E Act. Other recommended changes advanced by Mr Pitt included:

- Insert a condition that the Performance Requirements in the EMF must be consistent with the Performance Requirements in Table 2 of the Incorporated Document; and
- Amend the existing reference to amendments to the EMP (second sentence in third paragraph of Section 5.0) and replace it with a requirement that amendments to the EMP must be consistent with the Performance Requirements in Table 2 to the Incorporated Document.

Mr Pitt concluded that:

*The extent to which the LMA is not prepared to accept such conditions and the performance requirements advocated by Melbourne highlights the potential under the CIS for major unacceptable impacts that are almost certain to otherwise arise from the design of the ultimate project.*

Mr Pitt emphasised that the current reference to facilitating a connection from CityLink to the Port of Melbourne *"via a new viaduct"* in Clause 2.0 of the Incorporated Document should be deleted thereby enabling this link to be provided via CityLink.

In presenting the closing submission on behalf of the City of Yarra (Document 514), Mr Finanzio opened by confirming that Yarra *"supports the submissions made on behalf of the City of Melbourne with regard to including the Performance Requirements as Table 2 in the Incorporated Document"*. In addition, Mr Finanzio highlighted a number of additional detailed changes to Incorporated Document sought by Yarra. The changes are outlined in Document 490. Mr Finanzio explained that they are aimed at achieving two things:

- *Prohibit any future project from comprising features whose negative impacts have not been justified as part of this process; and*
- *Removes the mechanism which might (potentially unlawfully) delegate to the Minister the power to approve any project whatsoever without any form of supervision in relation to approval or enforcement.*

With specific reference to the wording in 'Clause 5.0 – Conditions' that stated that *"Amendments to the Environmental Management Plan which provide for a significant change to work methods or scope that results in increased or new environmental risks or impacts must be prepared to the satisfaction of the Minister for Planning"*, Mr Finanzio noted the concern that the Incorporated Document could therefore be used to approve amendments without consultation with Councils or any other authority or agency that could have environmental impacts that:

- *Have not been identified in the CIS or considered as part of this process; or that*

- *Have been identified and considered, but on the false assumption that the impacts will be those identified in the CIS.*

Further, Mr Finanzio submitted that the existence of this power has the potential to undermine the integrity of the CIS process, the objectives of the MTPF Act, and should not be entertained, particularly *“in circumstances where the “project” to be approved is a “reference project”, and where “the CIS which has been prepared to justify the reference project is so poor”.*

Mr Finanzio concluded that the power should be deleted from the Incorporated Document. If it is to be retained, he said at the very least:

- *The word ‘significant’ should be deleted;*
- *The power should be amended to require, consultation with the relevant council; and*
- *Where possible, measurable standards should be identified such that any amendment to the EMP which might produce an outcome below such standards should not be permitted as an amendment.*

### **18.3.3 Urban Design Principles**

The submissions and evidence regarding the adequacy of the proposed Urban Design Principles have been discussed in Chapter 8. The Committee’s recommended final version of the Principles is provided in Appendix F of Volume 2 (Appendices) of this Report. No submissions have been identified by the Committee that substantiate a reason for removing the Urban Design Principles from the Incorporated Document.

### **18.3.4 Design and Development Overlays**

In his advice to the Committee, Dr Bennet raised concerns about the impact of construction and operation of the tunnel on the development of land above the tunnel, or vice versa (Document 47). He said in this regard:

*Whilst the vertical and horizontal alignment of the tunnel on the development is not finalised, the key issue is the dimension of twin tunnels ... in relation to probable depth of cover, the varied geotechnical conditions and the proximity of development. The Roads Corporation needs the ability to be able to rigorously check any development in proximity to the East West Link tunnels on the basis of all material factors and not only as a design objective. A prescriptive dimensional criterion as proposed (15) does not capture the complexity of tunnels, the geotechnical conditions and the scale of any intended development.*

Dr Bennet discussed what had occurred with the Melbourne Underground Rail Loop and ongoing administration. He then observed that *“development of properties along or in the immediate proximity of the Loop has never been stymied by these provisions, and should be considered by the LMA to protect the interest of all parties”.*

The Committee authorised Dr Bennet to meet with representatives of the LMA to discuss this matter further.

In his closing submission, Mr Morris reiterated that the Design and Development Overlay in essence seeks to protect the tunnel from any adverse effects of development undertaken

above it, and conversely to protect development undertaken above the tunnel from any adverse effects of the tunnel. He submitted that the Design and Development Overlay does this by:

- Creating a permit trigger for any buildings or works that are undertaken more than 15 metres below ground; and
- Requiring that notice of any such permit application be provided to the Roads Corporation.

Mr Morris noted that by operation of section 102A of the MTPF Act, the LMA will be a referral authority to any permit application in respect of land within the Proposed Project Boundary. In response to Dr Bennet's concerns with the drafting of the Design and Development Overlay, Mr Morris submitted:

*Dr Bennet has queried whether a vertical dimensional criterion of 15 metres is appropriate having regard to the complexity of tunnel design in relation to the depth of cover, the varied geotechnical conditions along the alignment, and the proximity of the tunnel to development.*

*The LMA recognises the logic in distinguishing between the controls that apply along the "general tunnel alignment" – being that portion of the tunnel to be situated generally between Smith Street and Royal Parade (at which points the depth of the tunnel will have generally stabilised) – and the controls that apply at the "tunnel transition areas" – being the portions of the tunnel outside the general tunnel alignment areas (at which points the depth of the tunnel will vary).*

*In respect of the general tunnel alignment area the LMA contends that the relevant permit trigger should apply to buildings and works undertaken more than 2.5 metres below the natural surface level or more than 7.5 metres in height.*

Mr Morris submitted that a control based on the above terms would better ensure that any future development, such as deep-piled foundations and basement excavations (which may cause substantial loading and lateral/vertical movements), does not impact on the construction and operation of the tunnel. He further submitted that a more cautious approach to that described above is warranted in "tunnel transition areas" given the varying depths and that a permit should be required in respect of any buildings or works undertaken in these areas.

Having noted the above, Mr Morris concluded that exhibited Design and Development Overlays should not be applied at this time so they can be appropriately modified once the final location and vertical alignment is determined. He submitted:

*Ultimately, because it is not possible to delineate between the "general tunnel alignment" and "transitional tunnel areas" until the final location and vertical alignment of the tunnel is determined, it is submitted that the Committee should not recommend that a control on these terms be introduced as part of this approval process. The Committee should instead recommend that, as part of a separate planning scheme amendment process, a DDO control formulated on the*



*terms set out above be introduced into the Scheme at a convenient time after the final design of the Project has been determined.*

In relation to whether the Amendment contained appropriate planning controls to protect the dispersion performance of the required ventilation stacks, Mr Morris referred to the LMA response to the Committee's information request. The response concluded that it would be appropriate to introduce a control similar to that which applies to the CityLink ventilation structures, such as Schedule 5 to the Design and Development Overlay of the Yarra Planning Scheme. Mr Morris submitted, that like its recommendation to defer the introduction of exhibited Design and Development Overlay until the tunnel alignment is determined:

*A similar approach should be adopted in respect of the formulation and introduction of a DDO control to ensure that development undertaken in the vicinity of the ventilation stacks is appropriate having regard to its potential to influence the dispersal of air quality indicators.*

*Again, because the precise terms of that control will depend on the ultimate design of the Project (and the precise location of the ventilation structures), it would be appropriate that a control of this type be introduced at a later point in time as part of a separate planning scheme amendment process.*

## **18.4 Discussion**

### **18.4.1 Form of the Amendment**

While the majority of submissions lodged in response to the exhibition of the CIS opposed the Project, either entirely or a particular element of it, no party to the hearing materially challenged the overarching form of the Planning Scheme Amendment, if it was determined that approval be granted. Subject to the Amendment GC2 documentation being modified to reflect the Primary and Project Specific Recommendations outlined in the Executive Summary of this report, the Committee accepts that the form of the Amendment is generally sound. In forming this view, the Committee notes that the Planning Scheme Amendment documentation is similar in scope and scale to other major road projects that have been implemented in Victoria in recent years. The Committee accepts that Amendment GC2 is generally consistent with the Ministerial Direction on the Form and Content of Planning Schemes.

### **18.4.2 Incorporated Document**

The key issues identified and changes proposed by the Committee in relation to the content and structure of the Incorporated Document are categorised as follows:

- Definition of the Project in Clause 1.0 – Introduction;
- Removal of Reference to Part B from Clause 2.0 – Purpose and Part 4. – Control;
- Structure and content of Clause 5.0 – Conditions;
- Modification to Figure 1, Sheets 1 – 5;
- Wording of Urban Design Principles in Table 1; and
- Whether to include Performance Requirements in Table 2.

Each of these matters is addressed in turn.

**(i) Definition of the Project in Clause 1 – Introduction**

The Committee considers it appropriate to describe the Project and its two separate components, Part A and Part B, in the introduction to the Incorporated Document, rather than under the heading Purpose (in Clause 2) which is where it sits in the exhibited version.

The Committee supports the submission by Mr Pitt that the words “*via a new viaduct*” should be removed from the Project definition. As previously discussed, the Committee considers that Part B of the Project should be set aside and a new alignment determined. Within this context the Committee agrees that it is inappropriate for the Incorporated Document to specify that the connection from CityLink to the Port of Melbourne is to be provided “*by a viaduct*”.

**(ii) Removal of Reference to Part B from Clause 2.0 – Purpose and Clause 4.0 - Control**

Reference to Part B of the Project has been removed from the description of the purpose of the document in Clause 2.0 and from element of the Project in Part 4.0 Control to reflect the Committee’s Recommendation that the link from CityLink to the Port should be set aside. No further changes to these two clauses are proposed.

**(iii) Structure and content of Clause 5.0 – Conditions**

Consistent with the submission made on behalf of DTPLI, the conditions in Clause 5.0 have been re-ordered into a logical sequence and given discrete numbers.

The Committee does not support the submissions on behalf of the City of Yarra that it is necessary to specify as a ‘Control’, that copies of designs and management plans must be provided to Councils. The Committee accepts the submission of the LMA that the Minister for Planning is the relevant responsible authority and Councils receive plans via the consultation process built into the EMF.

The Committee agrees that use and development and the ancillary activities must be “*In accordance*” with the Urban Design Principles, as opposed to “*Generally in accordance*” with them. The Committee notes that the LMA agreed with this change. The condition has been modified accordingly.

The Committee does not support the City of Yarra’s proposed inclusions to the controls that seek to mandate specific design outcomes (eg “*Designed and constructed without access to Elliott Avenue*”). The Committee considers that such specificity is not warranted in this section of the Incorporated Document. The appropriate place for such detail is in the Performance Requirements which will either be specified in the EMF or as the Committee is proposing in a new Table 2 to the Incorporated Document.

With regard to the EMF, as discussed in Chapter 16, the Committee considers it important to specify additional accountabilities in the Incorporated Document including a mechanism for public reporting of compliance, inclusion of a complaints management process and the establishment of a Community Liaison Committee with an independent chairperson. In addition, the Committee believes that to ensure accountability, the audit reports of compliance with the EMF and EMP should be made publically available.

The Committee considers it important to specify within the Incorporated Document that approval of the Construction Environmental Management Plan is prepared to the satisfaction of the Minister for Planning, noting that the Operational Environmental Management Plan is between the LMA and the contractor. The Committee considers it appropriate that this approval process should specify “*after consultation with the Environmental Protection Agency and the relevant municipal council(s)*”. In this regard it accepts the submission of the City of Yarra. By adding the EPA in the consultation process here, their conditions will be clearly addressed.

The Committee accepts that the Construction Environmental Management Plan must be prepared in accordance with the EMF in the CIS and that it is appropriate to specify that it must include the preparation of dust, noise, surface water and groundwater management plans (as required by the EPA).

The Committee does not agree it is necessary or desirable to remove potential for amendments to EMPs as proposed by Yarra City Council. The Committee does however support the Yarra’s submission that the undertaking of such amendments should be endorsed by the Independent Auditor, and include consultation with the Linking Melbourne Authority and the relevant municipal council.

The above findings are reflected in the Committee’s redrafting of Clause 5.0.

**(iv) Modifications to Figure 1, Sheets 1 – 5**

Modified sheets 1 – 5 to the CIS that exclude Part B of the Project and that are further modified to reflect the Committee’s Primary and Issue Specific Recommendations will need to replace the exhibited versions.

**(v) Wording of Urban Design Principles in Table 1**

The Committee’s revised Urban Design Principles are contained in Appendix F.

**(vi) Whether to include Performance Requirements in Table 2**

The closing submission of the LMA (Document 525) stated that it would be inappropriate in the context of this Project to incorporate the Performance Requirements within the Incorporated Document for a number of reasons. Mr Morris noted that the EMF will provide a comprehensive regime that will ensure that the project contractor is properly held to account, so inclusion of the Performance Requirements in the Incorporated Document is unnecessary. The submission further noted that the regime does require inter alia:

- *both the construction EMP and operation EMP be reviewed by an independent third party appointed jointly by the contractor and the LMA prior to their approval;*
- *the Construction EMP must be approved by the Minister for Planning prior to the commencement of works;*
- *the Operation EMP must be approved by the LMA prior to the commencement of operation;*
- *the project contractor must appoint an independent auditor to conduct regular audits of the contractor’s work to ensure that compliance is achieved*

*with the EMPs during construction, operation and maintenance of the Project; and*

- *the audit reports must be reviewed by the LMA and by the independent third party reviewer, and that the independent third party reviewer must prepare quarterly reports summarising the project contractor's compliance with the EMF (which will necessarily involve compliance with all specified performance requirements).*

On this issue Mr Morris concluded that under the scope of section 114 of the P & E Act (which allows “any person” to apply to the VCAT in respect of a contravention or prospective contravention of inter alia a planning scheme), there is clearly considerable potential for the provisions of the P & E Act to be applied vexatiously by third parties in an attempt to stymie or frustrate the timely delivery of the Project. Given the scale and significance of the Project, this would be unacceptable.

The Committee notes Mr Morris's submissions on this issue, which Committee has commented on in Chapter 17.4.3. To elaborate further, the Committee is concerned that the examination of the Reference Project design through the hearing process has found it to be wanting in a number of areas. Despite hearing extensive evidence and submissions regarding the deficiencies of the Reference Project, the LMA did not concede that there was a need to modify, in a substantive form, the Performance Requirements for which the final project must respond, reflect and adhere. In this context the Committee can understand submitter concern that a final assessment of a contractor's proposal by the LMA against the Performance Requirement may result in a project similar to the Reference Project. Accordingly the Committee accepts at face value, there is benefit in elevating the status of the Performance Requirements through their inclusion in the Incorporated Document in a similar way to the elevation of the Urban Design Principles with which the LMA was in agreement.

In light of its finding and recommendations, the Committee considers the eventual design of the Project will be significantly different to the Reference Project and the Reference Project should not be used as its template.

It follows that the Committee shares the expressed concern of the City of Melbourne (and numerous other submitters) that the eventual design of this Project is one that achieves the aspirations set in Section 1.1 of the Urban Design Principles. The Committee believes the Performance Requirements need to be elevated to a position of prominence and that a proper design process is undertaken. Accordingly, the Committee believes that the Performance Requirements like the Urban Design Principles, should be included in the Incorporated Document.

If, as Mr Morris argues in paragraph 727 of his closing submission (Document 525) that compliance with the Environment Management Plan is amenable to review, this would include compliance with the Performance Requirements. The Committee sees no difference in providing the Performance Requirements in the Incorporated Document or the Environment Management Plan other than providing the emphasis referred to above.

On the assumption that the independent reviewer and/or the independent auditor has confirmed the contractor's compliance with the Urban Design Principles and the

Performance Requirements, the Committee considers it unlikely that a third party could successfully challenge compliance. The onus would be on the contractor to demonstrate compliance to the Minister, the LMA and the Independent Auditor. If the review were vexatious, there is scope for VCAT to award costs against the applicant for review.

What Mr Morris is highlighting on behalf of the LMA is its wish to avoid delay. That outcome can be achieved by ensuring compliance with the Urban Design Principles and Performance Requirements.

#### **18.4.3 Urban Design Principles**

As noted previously, the Committee considers that the Urban Design Principles (as modified in response to submissions) are an appropriate basis against which to assess a final design for the Project. The Committee accepts and supports Table 1 of the Incorporated Document as the appropriate location for the Urban Design Principles to be listed, referenced through Clause 5.0.

#### **18.4.4 Design and Development Overlay**

The Committee accepts the LMA submission that the exhibited Design and Development Overlay proposed for inclusion in both the Melbourne and Yarra Planning Schemes should be deleted from the Amendment package and be advanced via a separate planning scheme amendment once the exact tunnel location and its vertical alignment is determined. The Committee accepts that there is merit in applying a Design and Development Overlay similar to the existing control in the Yarra Planning Scheme (Design and Development Overlay 5) and the Melbourne Planning Scheme (Design and Development Overlay 27) in order to protect the dispersion performance of the ventilation stacks, once their exact location are determined.

### **18.5 Applicable Approvals**

The Committee accepts that Amendment GC2 is generally consistent with the Ministerial Direction on the Form and Content of Planning Schemes.

The Committee supports Part A of the Project being approved by the Minister for Planning through adoption of Planning Scheme Amendment GC2 under the provisions of sections 8, 29 and 35 of the *Planning and Environment Act 1987* subject to:

- Replacement of the exhibited Incorporated Document with the version contained in Appendix D of Volume 2 of this report;
- Removal of Schedule 62 to the Design and Development Overlay from the Melbourne Planning Scheme (Maps and Ordinance); and
- Removal Schedule 15 to the Design and Development Overlay from the Yarra Planning Scheme (Maps and Ordinance).

Once the detailed project alignment, extent of tunnel and its vertical alignment, and location of ventilation stacks are all determined, additional Design and Development Overlay controls will need to be drafted consistent with the Committee's findings.

## **Part D: Conclusions and Recommendations**



## 19 Conclusions and Recommendations

### 19.1 Response to Terms of Reference

The Committee was provided with Terms of Reference to guide its assessment of the CIS. It summarises the key outcomes and conclusions from these.

#### 19.1.1 Task

Part 1 of the Terms of Reference set out its Task and notes that the Minister directs it to *“Prepare a summary of all public submissions made to the Assessment Committee regarding the CIS”*. In response, the Committee summarises the key issues raised in submissions and responds to issue specific matters as appropriate in Part B of its report.

The Committee is to *“Prepare an Assessment Committee Recommendation in accordance with section 73 of the Act, supported by a report that evaluates all applicable law criteria for applicable law approvals sought for the project”*. In response, the Committee has undertaken a detailed assessment of all public hearing matters in Part B of its report in reaching its recommendations in relation to applicable law approvals.

In preparing the Committee’s recommendation and report, the Committee is directed to:

- *Assess the CIS in accordance with the Act ...*
- *Consider the alignment, design and Performance Requirements for the project that may be implemented within the Proposed Project Boundary ...*
- *Make recommendations as to appropriate conditions ...*

The Committee has undertaken a detailed assessment of the CIS, the evidence provided in support and against it and the submissions, in relation to the alignment, the design and Performance Requirements and the scope of the area in which the Project is considered, that is the Proposed Project Boundary and areas adjacent to it in terms of impacts.

#### 19.1.2 Procedure

##### (i) Prior to the Hearing

The Committee commenced its investigations upon its appointment on 21 October 2013 and it considered the exhibited CIS, all properly made submissions, and other relevant information. Apart from the LMA, the Minister for Planning and the EPA, the Committee did not receive any advice from an applicable law decision maker under section 65 of the MTPF Act (for example VicRoads, Heritage Victoria or DEPI), or any information requested from a person or applicable law decision maker under section 245(2) of the same Act – either prior to or during the public Hearing.

On 27 November 2013, the Committee conducted an information session, which is discussed in Chapter 5.1 of this report.

On 13 January 2014 the Committee directed the LMA to provide further information in accordance with section 57(4) of the MTPF Act.



The Committee conducted a Preliminary Hearing on 14 January 2014 at which it tabled the request for further information, made directions about the conduct of the Hearing and the timetable and responded to inquiries from various submitters.

The Public Hearing commenced 15 business days from the Preliminary Hearing, and was held for 30 business days from 3 March to 15 April 2014.

## (ii) Public Hearing Matters

In providing its conclusions and recommendations, the Committee summarises its response to the Hearing Matters as set out in Table 12.

Table 12: Response to the Public Hearing Matters in the Terms of Reference

Public Hearing Matter	Committee response	Report Chapter
Whether the impacts of the project on the traffic performance of roads connecting to the project, and the surrounding road network, as well as on connectivity for public transport, cycling and pedestrians, have been appropriately addressed.	The Project through the tunnel connection from the Eastern Freeway to CityLink will improve traffic performance across the city, and provide good opportunities for enhanced public transport, cycling and pedestrian upgrades. The impacts have been appropriately addressed in terms of Part A, with the exception of the Reference Project that shows the Hoddle Street flyover and the location of the eastern and western portals, and the Elliott Avenue interchange. These aspects need further refinement. The impacts for Part B have not been appropriately addressed and these need to be considered in the broader context of the proposed WestLink and other works on CityLink.	6
Whether the impacts of the project on land use and infrastructure in its immediate environs, including on housing, recreation and community facilities, have been appropriately addressed.	<p>The residential land use impacts of the Project have been well addressed where the Project is in-tunnel. However, a number of elements of the Reference Project have unacceptable impacts on residential properties and residential amenity. These include the Hoddle Street flyover, the temporary sidetrack along Alexandra Parade, the elevated ramp structures across Manningham Parklands linking the Tunnel to CityLink south which impact on Manningham Street properties and residents of the Flemington Housing Estate and Bent Street apartments. These proposed elements are considered unsatisfactory and unresolved.</p> <p>The CIS has an inconsistent response to impacts on recreation facilities. While the impacts have been satisfactorily resolved within the Melbourne, further mitigation is required to achieve a satisfactory outcome within Moonee Valley and Moreland.</p> <p>The impacts on the majority of community facilities abutting the Proposed Project Boundary are likely to be adequately addressed through implementation of Performance Requirements. However impacts on the Flemington Community Centre, the Debney's Park Playground and the Flemington Community Garden are unacceptable.</p> <p>In relation impact on utilities, the Committee considers Part B of the Project poses unacceptable impacts on the SP AusNet West Melbourne Terminal Station.</p>	7 and 15
Whether the proposed Urban Design Framework in the CIS will	The Committee concludes that in relation to Part A, the exhibited Urban Design Framework was not adequate to appropriately manage visual impacts of the Project on the surrounding area, due to the	8

Public Hearing Matter	Committee response	Report Chapter
<p>appropriately manage visual impacts of the project on the surrounding area, including public open spaces.</p>	<p>generality of its nature and the lack of measurability of the Urban Design Principles described in Technical Appendix H, particularly as the design of the Project is the responsibility of the construction contractor.</p> <p>The Committee has revised the Urban Design Principles and supports their inclusion in the Incorporated Document and adoption for Part A (and Part B if it proceeds).</p>	
<p>Whether the noise, vibration, air emissions and light spill impacts of the project will be appropriately managed by proposed measures.</p>	<p>Noise and vibration associated with Project construction and operation can be managed through good design and mitigation. Modified Performance Requirements have been developed to ensure a consistent approach to operational noise limits across the eastern and western end of the project and to recognise the 24 hour nature of major freeway noise by including a night time noise limit. Given the intensively developed inner-urban environment and uncertainty about the final Project design, a conservative approach has been recommended for construction and operation.</p> <p>A number of assumptions were made in the air quality assessment for the CIS that may underestimate the impact of the air emissions from the Project. The locations of the ventilation stacks in the Reference Project are arbitrary and have not been located to minimise the impact of the emissions. In-tunnel air quality has been assessed based on a number of assumptions to meet the PIARC in-tunnel air quality design objectives.</p> <p>The ventilation stacks at the east end of the tunnel should be relocated to the east of Hoddle Street and the Hurstbridge/South Morang rail line with the tunnel extending to this location. This will minimise the impacts on the surrounding land uses and potential impacts on public health arising from the air emissions from the Project. In-tunnel air quality needs to be managed consistent with the conditions on the CityLink and EastLink tunnels for carbon monoxide. A detailed air quality assessment needs to be undertaken to guide the final design of the project to ensure that the air emissions and associated health impacts are minimised. The modelling needs to be done for the ventilation stack emissions, in-tunnel air quality and emissions from surface roads (including any viaducts), using PM2.5 and PM10 as the key indicators of traffic pollution.</p> <p>There was no detailed assessment conducted for the air quality impacts of Part B and it has not been demonstrated that the impacts will be appropriately managed. Such an assessment needs to take into account recent Government announcement regarding WestLink and the widening of CityLink, to ensure that the optimal design is achieved.</p>	<p>9 and 10</p>
<p>Whether the impacts of the project on cultural heritage places have been appropriately addressed.</p>	<p>The Committee concludes that in relation to Part A, the impacts on cultural heritage places has not been appropriately addressed due to the proposed demolition of contributory buildings and buildings within Heritage Overlays, the proximity of works to heritage places and the uncertainty of impacts on Royal Park.</p> <p>The Committee concludes that in relation to Part B, that, should the Committee's recommendation to defer Part B not be agreed to, the</p>	<p>11</p>

Public Hearing Matter	Committee response	Report Chapter
	same inadequacy exists.	
Whether the impacts of the project on surface and ground waters have been appropriately addressed.	The impacts of the Project on surface water and groundwater will depend largely on the eventual design selected for project construction. Whilst without a final design it is difficult to assess the exact impacts, the Committee considers that they should be able to be managed and has recommended modified Performance Requirements accordingly.	12
Whether the impacts of the project on native vegetation and biodiversity have been appropriately addressed.	<p>The Committee concluded that the Reference Project would have an unacceptable level of impact to native vegetation, and associated fauna habitat within Royal Park, due to the areas proposed for permanent and temporary works.</p> <p>The Committee specifically addressed this matter in its recommendations, and proposed Performance Requirements. Subject to the adoption of such recommendations and Performance Requirements, as well as those that address other less critical biodiversity issues, the impacts of the project on native vegetation and biodiversity will be appropriately addressed.</p>	13
Whether the risk from disturbance and disposal of solid wastes has been appropriately addressed.	There will be significant volumes of spoil generated during tunnel excavation; a proportion of which may be contaminated depending on the specific works area. There is a regulatory framework for managing such material which will need to be implemented for the final design. In addition the Committee has recommended Performance Requirements to manage specific issues for the Project, such as preventing the storage of contaminated materials on Ross Straw Field.	14
Whether the Environmental Management Framework in the CIS will provide an effective integrated approach to manage the environmental performance of the project.	Subject to the Committee's specific recommendations, the Environmental Management Framework will provide an effective and integrated approach to manage the environmental performance of the Project.	16

### 19.1.3 Conduct of Hearings

The hearing was conducted in accordance with the Terms of Reference. The hearing was managed by the Chair (Ms Mitchell), with assistance from the nominated presiding member (Mr Wimbush) as required. The Chair regulated all proceedings to allow the Committee to be fully informed on relevant matters as required and it gave written and verbal directions about the conduct of the hearing and other matters relating to further information as required.

The Committee provided all submitters with a reasonable opportunity to be heard, and it set timeframes for all submitters, including the LMA, the Councils and the EPA.

The Committee gave directions about the form of presentations and observes that all presentations greatly assisted it to understand the Project and the issues raised in evidence and submission that were in support or opposition to it.

The Committee gave clear direction about the form of cross examination and it was conducted primarily by the Committee through its legal Counsel, as well as the LMA and the Cities of Yarra, Melbourne and Moonee Valley.

The LMA was provided with an opportunity to respond to submissions made during the public hearing, as were the Councils, the EPA and the Combined Community Group.

#### **19.1.4 Technical and Administrative Support**

As mentioned in Chapter 1, the Committee was well served and assisted by the staff of Planning Panels Victoria in all aspects of its work. Additionally, it engaged the services of Mr Chris Wren SC, to provide legal advice and to assist in cross examination, and Dr Sandy Bennet, Mr Doug Munro and Ms Mandy Elliott to assist with technical expertise.

## **19.2 Applicable Law Criteria**

The MTPF Act and the Committee's Terms of Reference provides that the Committee "*make recommendations to the Minister for Planning whether or not to grant any applicable approval required for the project to be developed and if so to recommend appropriate conditions for applicable approvals*".

In doing so, s73(3) of the MTPF Act notes that the Committee must specify:

- (a) The conditions;*
- (b) The relevant applicable law under which the conditions are being imposed;*  
*and*
- (c) The person or body authorised under the relevant applicable law to administer compliance with the conditions.*

Mr Morris observed at paragraph 35 of his opening submission (Document 23) that:

*The Committee must be cognisant that each of the applicable law approvals is governed by a different legislative regime and that the range of considerations relevant to each approval differs accordingly.*

The relevant applicable law approvals are set out in Appendix A of the CIS and are discussed more fully in Chapter 3.3 of this report. Having regard to the findings the Committee has reached particularly in relation to the Performance Requirements and Part B, which are dealt with in various other parts of this report, it is appropriate to summarise the Committee's findings and recommendations in response to the Applicable Law Criteria as follows:

### **19.2.1 Works approval under s19B of the *Environment Protection Act 1970***

The Committee recommends that the Works Approval for the tunnel ventilation system be issued under the provisions of s19B of the EP Act, conditional on:

- Conducting further detailed air modelling assessment on the final design which includes moving the ventilation stacks east of Hoddle Street and the Hurstbridge/South Morang Railway Line.

- Including a mid-tunnel air intake in the final design.
- Adopting the CO in-tunnel air quality standards used in CityLink and EastLink for the Project.
- Making provision to retrofit pollution control equipment in the ventilation stacks for PM<sub>10</sub> and PM<sub>2.5</sub>.
- Requiring pollution control equipment if PM<sub>10</sub> or PM<sub>2.5</sub> levels are greater than 30% of the applicable air quality standard.
- Undertaking an air monitoring program in Clifton Hill and in the vicinity of the western stack for a period of 12 months prior to the tunnel opening and 12 months post opening. Repeat the monitoring 5 years post opening of the tunnel.

The Committee considers that the EPA should administer compliance with such conditions.

#### **19.2.2 Planning Scheme Amendment approval under s8, s29, and s35 of the *Planning and Environment Act 1987***

The Committee recommends that in relation to Part A, Planning Scheme Amendment GC2 be adopted, subject to the Primary and Issue Specific Recommendations made in this report.

The Committee considers the Minister for Planning should administer compliance with the conditions it has recommended be attached to the Amendment.

The Committee has recommended that Part B of the Project be set aside, however if that recommendation is not accepted, the same permissions as Part A should be granted.

#### **19.2.3 Permit under s74 of the *Heritage Act 1995* to carry out works or activities in relation to a registered place or registered object**

The Committee recommends that in relation to Part A, and the five heritage places listed in Table 3.3 of Chapter 3 of the CIS, permits should be granted as the proposed works relate only to tunnelling works at a minimum approximate depth of 20 metres.

On the assumption that the Performance Requirements are complied with, the Committee does not consider any separate conditions are required.

The Committee is not required to make any recommendations about consent for Part B.

#### **19.2.4 Consent under s129 of the *Heritage Act 1995* for impact on archaeological relics**

The Committee recommends that in relation to Part A, and the two heritage places listed in Table 3.4 of Chapter 3 of the CIS, namely Yarra Bend Park and Royal Park, consent should be granted.

The Committee recommends that in relation to Part B, should this part of the Project proceed, consent for the two places listed in Table 3.4 of Chapter 3 of the CIS should be granted.

On the assumption that the Performance Requirements are complied with, the Committee does not consider any separate conditions are required.

### **19.2.5 Consent under Clause 1 of Schedule 2 of the *Road Management Act 2004* allowing connection to a freeway**

The Committee concludes that in relation to Part A, consent should be provided for the following new connections of the East West Link with the Eastern Freeway and CityLink:

- Direct connection of the eastbound carriageway of the East West Link with the eastbound carriageway of the Eastern Freeway.
- Direct connection of the westbound carriageway of the Eastern Freeway with the westbound carriageway of East West Link.
- Exit ramp from the southbound carriageway of CityLink/Tullamarine Freeway connecting to the eastbound carriageway of East West Link.
- Entry ramp to the northbound carriageway of CityLink/Tullamarine Freeway providing connection from the westbound carriageway of East West Link.

On the assumption that the Performance Requirements are complied with, the Committee does not consider any separate conditions are required.

The Committee has recommended that Part B of the Project be set aside, however if that recommendation is not accepted, the relevant Applicable Approvals as confirmed by VicRoads be granted.

### **19.2.6 Licence under s67 of the *Water Act 1989* required to construct, alter, operate or decommission works on a waterway, including works to deviate a waterway**

The Committee recommends that consent under Section 67 of the *Water Act 1989* for works on waterways in Merri Creek and Moonee Ponds Creek to construct, alter, operate or decommission works on a waterway, including works to deviate a waterway, be issued for Part A of the Project.

On the assumption that the Performance Requirements are complied with, the Committee does not consider any separate conditions are required.

The Committee has recommended that Part B of the Project be set aside, however if that recommendation is not accepted, the same permissions as Part A be granted.

### **19.2.7 Comments from the Secretary pursuant to s66 of the *Conservation, Forests and Lands Act 1987* on plan of works across waterways.**

The Committee has recommended that Part B of the Project be set aside, so comment from the Secretary is not required. If the recommendation is not accepted, comment should be sought for works associated with the Moonee Ponds Creek.

On the assumption that the Performance Requirements are complied with, the Committee does not consider any separate conditions are required.

## **19.3 Recommendations**

The Committee endorses its recommendations as provided in the Executive Summary.

## **Appendices A to G are provided in Volume 2**

- Appendix A: Terms of Reference**
- Appendix B: List of Submitters**
- Appendix C: Hearing Document List**
- Appendix D: Revised Incorporated Document**
- Appendix E: Revised Performance Requirements**
- Appendix F: Revised Urban Design Principles**
- Appendix G: Report of Dr Sandy Bennet**



*Major Transport Projects Facilitation Act 2009*

# **East West Link (Eastern Section) Project**

**Assessment Committee Report**

**Volume 2 – Appendices**

**30 May 2014**