

MELBOURNE METRO RAIL PROJECT

ASSESSMENT

under

ENVIRONMENT EFFECTS ACT 1978

Minister for Planning

December 2016

GLOSSARY

| | |
|----------|---|
| AH Act | <i>Aboriginal Heritage Act 2006</i> |
| CBD | Central business district |
| CHMP | Cultural heritage management plan |
| CNVMP | Construction noise and vibration management plan |
| DELWP | Department of Environment, Land, Water and Planning |
| EE Act | <i>Environment Effects Act 1978</i> |
| EES | Environment effects statement |
| EMF | Environmental management framework |
| EPA | Environment Protection Authority |
| EP Act | <i>Environment Protection Act 1970</i> |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999 (Cwth)</i> |
| EPR | Environmental performance requirement |
| IAC | Joint Inquiry and Advisory Committee |
| ICNG | Interim construction noise guidelines |
| MMRA | Melbourne Metro Rail Authority |
| P&E Act | <i>Planning and Environment Act 1987</i> |
| PPRG | Parkville precinct reference group |
| PRINP | Passenger rail infrastructure noise policy |
| SEPP | State environment protection policy |
| TBM | Tunnel boring machine |
| TMP | Transport management plan |
| TRG | Technical reference group |
| TTWG | Traffic and transport working group |
| VHR | Victorian heritage register |
| VHI | Victorian heritage inventory |
| VDRP | Victorian design review panel |
| UDAAP | Urban Design and Architectural Advice Panel |

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EXECUTIVE SUMMARY

The transport challenges facing Melbourne are profound. As the city grows “Melbourne’s transport network will be under increasing pressure and will impact on productivity and the city’s liveability. Building new transport infrastructure will be a key part of responding to increased demand, particularly in the fast-growing parts of the city”¹.

The environment effects statement (EES) process has highlighted the significant benefits of the Melbourne Metro Rail Project for Victoria’s transport network: increased capacity of the metropolitan passenger rail network, improved transport integration and the potential to facilitate a wide range of further network enhancements in the future. Together these improvements will modernise and transform the public transport network contributing to Melbourne’s sustainability and liveability for many decades to come.

For current and future Victorians to experience these benefits, there will be inevitable disruption and impacts to individuals, families, businesses, institutions and much loved public spaces over the course of constructing the Melbourne Metro Rail Project (the Project). These effects, whilst temporary, are likely to be substantial. It will be incumbent on the Melbourne Metro Rail Authority (MMRA) to take a responsive and responsible attitude to managing these effects and protecting the legitimate interests of its neighbours and stakeholders.

On 21 November 2016, the Joint Inquiry and Advisory Committee (IAC) I appointed provided its report to me on the Project and its environmental effects. The IAC noted that “almost without exception” the submissions supported the project and in the main “focussed on the potential impacts of the Project’s construction stage on particular properties or areas.” Overall, the IAC supported the Project and the proposed environmental framework to mitigate and manage the environmental effects of the Project (subject to amendments discussed in this Assessment).

Whilst the Project will have unavoidable environmental impacts, these impacts can be substantially minimised through application of environmental performance requirements (EPRs) that will set the standards to which the Project is ultimately delivered by the MMRA and its contractors.

This Minister’s Assessment under the *Environment Effects Act 1978* completes the EES process and concludes that the environmental effects of the Project are acceptable, provided appropriate mitigation and management is implemented. Therefore, the Project should be approved, subject to the key findings outlined below.

Project governance

It is recommended that a number of new stakeholder groups be established to strengthen further the consultation and engagement framework for the Project, including:

- an Intergovernmental Committee co-chaired by MMRA and the Department of Environment, Land, Water and Planning (DELWP) with membership to include relevant government departments and the affected councils in the Project area;
- a Development Plan Review Committee, which will have terms of reference to provide advice to me in my consideration of whether or not to approve Project Development Plans; and
- four precinct reference groups (each with an independent chair), to consult with stakeholders and manage issues within the Domain/South Yarra, Central Melbourne, Parkville and Arden/South Kensington precincts.

¹ Plan Melbourne Refresh discussion paper (October 2015)

An Independent Environmental Auditor will oversee the delivery of the Project and provide an “umpire” to monitor the ongoing implementation of the environmental performance requirements (EPRs) and the detailed recommendations in this Assessment.

The Development Plan Review Committee, along with precinct reference groups, the Traffic and Transport Working Group and an Urban Design and Architectural Advice Panel would also be available to advise the Intergovernmental Committee.

Environmental Management Framework

As a whole, the EPRs proposed by MMRA with the changes recommended by the IAC are generally acceptable subject to further refinement discussed throughout this Assessment and tabulated in the Appendix. The broad structure of the environmental management framework (EMF) as proposed by the MMRA is supported, though some modifications are required. The final version of the EMF submitted to me for approval will incorporate EPRs that have been finalised in consultation with DELWP. The EMF will now also incorporate the Residential Impact Mitigation Guidelines for Construction and Business Support Guidelines for Construction as part of the EMF which I will consider for approval.

Noise and vibration impacts

The construction period will generate both noise and vibration which will be experienced in different ways and to different extents at different work sites. Most of the adverse noise and vibration environmental effects expected to arise from the Project can be mitigated and managed within acceptable levels, in the context of relevant legislation, policy and appropriate standards. For the more severe, temporary effects that might arise from time to time during the construction phase, there are management measures which can be implemented to address the impacts. The Residential Impact Mitigation Guidelines are intended to be used to establish principles for managing residual impacts of construction activity, where the Project noise impacts may trigger actions such as the offer of respite for those impacted.

Traffic and transport impacts

The Project will enable a significant increase in the capacity of the metropolitan rail network and provide multimodal connections. The effects of the works on the broader transport network are capable of being adequately managed, both during and after the construction of the Project. During the construction phase of the Project, a Traffic and Transport Working Group (TTWG) and the Traffic Management Plans will be very important in mitigating and managing transport impacts. Moreover, the TTWG will provide guidance on required modelling, to identify performance levels and benchmarks to be achieved within each precinct and to select the most appropriate solutions to mitigate effects.

Social and community impacts

The construction of a project of this scale will generate a great deal of disturbance to the people who operate, live and work in the vicinity of the Project. Many of those most affected by the construction of the Project can be expected to enjoy the benefit of access to new public transport infrastructure in close proximity in the future – but the interim impact of construction activity cannot be ignored.

Meaningful communication is key to ensuring residents and other stakeholders impacted by the Project are informed of Project works that may impact upon them, and that they are given the opportunity to provide input into key project milestones as required. The EPRs presented in this Assessment establish a strong stakeholder engagement framework and lines of communication between the proponent and those affected to mitigate project impacts on the community.

Arboriculture impacts

As proposed, the Project is likely to have a significant impact upon existing substantial trees, some of which enjoy heritage protection, and many of which contribute to the distinctive character of the precincts where they are located and to the character of Melbourne as a whole. It is appropriate to

manage the impact of the Project on trees by the use of EPRs, but the EPRs considered by the IAC should be strengthened to place a greater emphasis on avoiding tree removal where possible, and to more carefully explore the option of temporary relocation of significant trees, to be replanted following completion of the main works – particularly in the Parkville and Domain Precincts. This is a matter which will also be considered under the Heritage Act for some of these trees affected by the Project as they are subject to heritage protection.

Land use and planning impacts

The impacts on land use and planning are unique to each station precinct and along the rail alignment, and are generally related to construction. The land use EPRs are aimed at limiting the permanent change of use within existing public open space. This includes minimising the footprints of construction sites and permanent infrastructure on public land, impacts to existing public open spaces and the users of the recreational facilities. The amended EPRs are sufficient to mitigate land use and planning impacts of the project.

Business impacts

Business issues common across the entire route alignment include business acquisition and relocation and disruption during construction. The mitigation and management of the effects of the Project, particularly during construction, will depend upon the effectiveness of the EPRs. In this Project, the EPRs comprehensively address the source of disruption from construction activities (e.g. noise and vibration). In addition, the EPRs can be made more effective for businesses by including tools to address operational and other aspects which are specific to businesses affected by the Project. The IAC recommended expanding the scope of the Business Support Guidelines for Construction to those businesses outside the project area. This recommendation is supported. This Assessment also concludes that the Business Support Guidelines for Construction should be approved by me as part of the EMF, and not left until later. Together, Business Disruption Plans and the Business Support Guidelines for Construction will adequately minimise the potential disruption on business operations.

Aboriginal cultural heritage impacts

The overall residual risk to Aboriginal cultural heritage from the Project is likely to be very low following implementation of the relevant EPR. The effects on any Aboriginal cultural heritage can be appropriately managed through the consideration and approval of the Cultural Heritage Management Plan under the Aboriginal Heritage Act.

Historic cultural heritage impacts

There are a large number of historic heritage places across the Project area, including buildings, trees, landscapes and archaeological sites. In some places the Project will have an impact on these places (e.g. the removal of trees, or the demolition of buildings in a heritage overlay). In other instances, the Project may have an impact on heritage places if appropriate steps are not taken to protect the heritage place from, for example, the impact of ground vibration in the construction phase upon old buildings. The likely and possible effects of the Project on these Heritage Places can be adequately addressed by the EPRs, and by the statutory framework which exists under the Heritage Act.

In relation to the heritage impacts at Domain the proposed historic heritage EPRs are extensive and have been developed in consultation with local councils and Heritage Victoria. The detailed design phase of the Project will occur in accordance with the relevant EPRs and as guided by Heritage Victoria.

Urban design impacts

As expected with a project of this scale there may be significant urban design, landscape and visual impact issues that arise. The Urban Design Strategy considers the public realm impacts of the Project (rather than the tunnel or paid zone design) and sets urban design objectives at three levels:

- principles applicable to large projects generally;
- project-wide themes relevant to the whole alignment; and
- precinct specific guidelines focused on individual sites.

While the Urban Design Strategy is generally well crafted, the matters still in contention in the IAC Report reflect a lack of clarity or strength in some aspects of the Urban Design Strategy. In addition to the improvements that the IAC has recommended, I believe that further strengthening will ensure the Urban Design Strategy' utility as a control document. Consequently, I recommend that the Urban Design Strategy should be updated in consultation with DELWP prior to my approval.

In addition, reference should be included to an Urban Design and Architectural Advice Panel (UDAAP) chaired by the Office of the Victorian Government Architect as the independent design review body.

Next Steps

My Assessment will inform subsequent decisions by Government and other decision makers in relation to the specific approvals that will be required, and the final form of the Project that is to be implemented following the close of the Private Public Partnership (PPP) bid process. My Assessment is that in overall terms the approach to the Project is environmentally acceptable, subject to appropriate mitigation and management of the environmental effects of the Project. My assessment also acknowledges that some variations and alternative approaches could be considered in the PPP process, and in subsequent approvals, which may further improve the Project and its environmental outcomes.

Under the *Environmental Effects Act 1978* this Assessment is provided in the first instance for consideration by the Minister for Public Transport as "the relevant Minister."

The key statutory decisions that will be required and relevant decision-makers are:

- planning scheme amendments – Minister for Planning;
- cultural heritage management plan – Aboriginal Victoria; and
- heritage permits – Heritage Victoria.

1 INTRODUCTION

1.1 Purpose of this document

This document constitutes my assessment of environmental effects (Assessment) in accordance with s 4(1) and 6 of the *Environment Effects Act 1978* (EE Act) for the Melbourne Metro Rail Project (the Project). The Assessment represents the final step in the environment effects statement (EES) process under the EE Act. My Assessment is for the consideration of the Minister for Public Transport as “the relevant Minister” under the EE Act, and will also serve to inform the decisions required under Victorian law for the proposal to proceed, in particular under the *Planning and Environment Act 1987* (P&E Act) and the Heritage Act.

1.2 Structure of this Assessment

Readers of this Assessment will find numerous references to environmental performance requirements (EPRs). The Melbourne Metro Rail Authority (MMRA) responded to some of the issues that arose during the IAC Hearing by iteratively amending the EPRs to reflect its position on the performance requirements. The last version of the EPRs provided to the IAC was Version 4. In making its recommendations, the IAC produced a table at Appendix F of its report, where it set out the changes it suggested. Both versions of the EPRs are presented in Appendix A, along with further recommendations that I have made as a result of my Assessment. All versions are presented to provide readers an insight into the evolution of the EPRs over the course of the EES process.

The structure of this Assessment is as follows:

- Section 2 provides a brief description of the Project and the project alternatives considered both by the Joint Inquiry and Advisory Committee (IAC) and in this Assessment. Additional project description information can be found in the EES and IAC Report.
- Section 3 outlines both the EES process and statutory approvals required for the Project.
- Section 4 considers the management framework for managing environmental effects, along with planning controls and project governance.
- Section 5 assesses the environmental effects of the Project based on the applicable legislative and policy framework and provides a summary of the key findings of this Assessment and the final evaluation objectives.
- Section 6 provides my conclusions, including responses to the recommendations of the IAC.

2 PROJECT DESCRIPTION

2.1 Background

In early 2015 the Victorian Government announced that it was committed to the delivery of the Project. The MMRA was established as an administrative office of the Department of Economic Development, Jobs, Transport and Resources and tasked with the delivery of the Project. The MMRA is responsible to the Minister for Public Transport.

2.2 Melbourne Metro Rail Project

The Project comprises twin nine kilometre rail tunnels between South Kensington in the inner west and South Yarra in the inner southeast of Melbourne that will connect the Sunbury and Pakenham/Cranbourne lines. The Project will provide five new inner city underground railway stations at Arden (western end of Queensberry Street in North Melbourne), Parkville (Grattan Street and Royal Parade), CBD North (Swanston Street between Victoria Street and Latrobe Street), CBD South (Swanston Street between Collins Street and Flinders Street) and Domain (St Kilda Road between Domain Road and Toorak Road). The Project is intended to significantly increase inner city station capacity and open the Parkville and Domain precincts to the rail network. The alignment is shown in Figure 1.

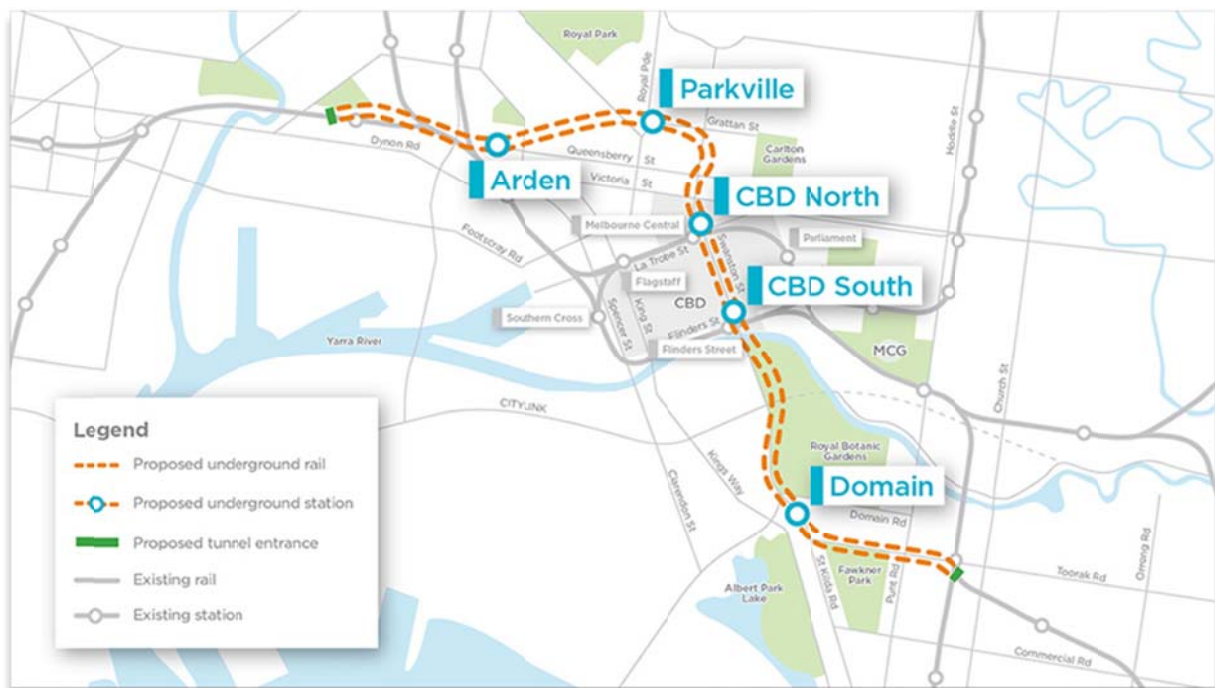


Figure 1. Melbourne Metro Rail Project location.

The area directly affected by the Project comprises land that is currently used for railway or road purposes, developed urban land (including land in Melbourne’s central business district), and parkland. The Project’s alignment commences at the Western Portal east of the Maribyrnong River, passes under Moonee Ponds Creek near City Link and the Yarra River adjacent to Princes Bridge and returns to the surface at the Eastern Portal in the rail reserve at South Yarra, between Toorak Road and Chapel Street. For assessment purposes, the Project has been divided into nine precincts based on the location and nature of project components and construction works, the potential impacts on local areas and the characteristics of surrounding communities:

1. Tunnels;
2. Western portal (Kensington);
3. Arden station;
4. Parkville station;
5. CBD North station;

6. CBD South station;
7. Domain station;
8. Eastern portal (South Yarra); and
9. Western turnback (West Footscray).

A detailed description of the Project is provided in Volume 1, Chapter 6 of the EES. The Project and its potential effects on the environment are presented in the EES in the context of a concept design and specific alternative design options. The final detailed design will be prepared by the preferred tenderer, expected to be appointed to design and construct the Project during 2017. Therefore, the concept design has been used to identify potential issues and demonstrate feasible ways in which those issues might be addressed.

2.2.1 Works program

Work on the Project is proposed to proceed in phases. These are described below and are variously referred to in the text of this Assessment and the various proposed approval documents such as the incorporated document and the EPRs listed in Appendix A. Section 6(2) of the EE Act has the effect that works on the Project may not commence until after this Assessment is completed and considered by the Minister for Public Transport.

The framework for the approval of the Project which was included in the EES proposes that some works be allowed to occur at early stages. In the EES these works are divided into two separate categories – Preparatory Works and Early Works.

Enabling works

Works identified in Victorian Government Gazette No. S361 (24 November 2015) are excluded from assessment under the EES, and may commence prior to the completion of this Assessment.

Preparatory works

Preparatory works are referred to in the EES, and are intended to commence prior to the approval of the EMF and EPRs plans and other requirements relevant to the construction of the Early Works and Main Works. They include preparatory steps, such as:

- works, including vegetation removal, that would not require a permit under the provisions of the planning schemes that, but for this document, would apply to the relevant land;
- investigations, surveys, testing and preparatory works to determine the suitability of land;
- creation of construction access points;
- establishment of environmental and traffic controls; and
- fencing and temporary barriers to enable preparatory works.

Early works

Early works are referred to in the EES, and are intended to commence prior to the approval of Development Plans but after the approval of the EMF and EPRs. They include works, such as:

- utility service relocation and protection of utility assets;
- site preparation works, including demolition works, removal or relocation of trees and monuments, minor road/transport network changes; and
- works for construction of shafts at CBD North and CBD South station precincts.

Main works

Main works will be completed by the contractor engaged by the MMRA to deliver the project. Main works encompass the main body of the Project works and are subject to Development Plans within each of the project precincts.

2.2.2 Project variations

This Assessment addresses the Project as described in the EES with the following main variations announced by the MMRA since the publication of the EES:

- abandonment of Fawkner Park as a tunnel boring machine (TBM) launch site or construction works site;
- removal of the permanent emergency access shafts proposed to have been located in Fawkner Park and the Domain Parklands;
- abandonment of the option for the vertical alignment of the rail tunnel to pass above the CityLink tunnels, in favour of the below CityLink option;
- lowering of the CBD South station box by approximately four metres; and
- adoption of Option B for the Western Portal, reducing the number of residential and commercial properties required for acquisition.

Further information regarding Project alternatives is outlined in Section 5.1.

3 STATUTORY PROCESSES

3.1 Environment Effects Act 1978

In August 2015 MMRA submitted to me a project outline for consideration which described in broad terms the nature of the Project.

On 3 September 2015, I declared that the works proposed to be undertaken for the purposes of the Project were “public works” pursuant to section 3 of the EE Act, because I was satisfied that the works proposed in relation to the Project could reasonably be considered to have, or be capable of having, a significant effect on the environment. The effect of my declaration was that, pursuant to section 4 of the EE Act, the MMRA was required to prepare an EES to be submitted to me for my assessment.²

The Order of 3 September 2015 specified various procedures and requirements to apply to the EES, including: the preparation of scoping requirements, the formation of an inter-agency Technical Reference Group (TRG), and an EES Consultation Plan. On 13 October 2015, draft Scoping Requirements were published for public comment. The period for comment closed on 4 November 2015. On 11 December 2015, I approved final Scoping Requirements. A TRG was convened by the DELWP in accordance with normal EES practice³.

The MMRA produced a draft EES, including technical appendices, which was finalised in the light of advice from the TRG. The EES was placed on public exhibition between 25 May and 6 July 2016. The EES also included a draft amendment GC45 (the Amendment) to the Maribyrnong, Melbourne, Port Phillip and Stonnington planning schemes.

Three hundred and seventy nine submissions were received in relation to the EES and the Amendment.

On 10 April 2016 I appointed an Inquiry under s 9(1) of the EE Act and then published on 23 May 2016 Terms of Reference (TOR) by which the Inquiry would undertake its task. I also appointed the inquiry members as an Advisory Committee under section 151 of the P&E Act to consider the Amendment and related matters raised in submissions.

The IAC held a directions hearing on 26 July 2016, followed by its public hearing over 33 sitting days from 22 August to 7 October 2016. The IAC provided its report to me on 21 November 2016. The report has informed the preparation of this Assessment of the environmental effects of the Project under the EE Act.

The next step is the provision of this Assessment to the Minister for Public Transport and statutory decision-makers. Under section 6(2) of the EE Act, the Minister for Public Transport must consider this Assessment before commencing project works (other than the ‘enabling works’ excluded from the public works for which the EES was required).

²On 24 November 2015 I made a further Order which had the effect of excluding certain ‘enabling works’ from the requirement to prepare an EES.

³The TRG comprises representatives of departments and authorities with statutory interests or specialised expertise relevant to the Project, including DELWP (Planning and Environment portfolios), EPA, VicRoads, Melbourne Water, Office of Aboriginal Affairs Victoria (now known as Aboriginal Victoria), Heritage Victoria and Melbourne, Port Phillip and Stonnington Councils. MMRA and relevant members of its consultant team also attended meetings.

3.2 Victorian statutory approvals

The Project requires a number of Victorian statutory approvals, including:

- An amendment to the Maribyrnong, Melbourne, Port Phillip and Stonnington planning schemes to provide comprehensive statutory planning controls for the Project. In the absence of such an amendment, the Project would be subject to multiple and uncoordinated permit requirements under numerous different provisions of the relevant planning schemes. The form of the Amendment published in draft form in the exhibited EES, would also enable the use of the project delivery powers of the *Major Transport Projects Facilitation Act 2009* (MTPF Act), in accordance with the declaration made by the Premier on 4 September 2015.
- Permits for works or activities affecting places on the Victorian Heritage Register under section 74 of the *Heritage Act 1995*.
- Consents for works which might affect places on the Victorian Heritage Inventory under section 129 of the Heritage Act.
- Consent for works in, on or under any road under the *Road Management Act 2004*.
- Licences under the *Water Act 1989* for actions such as taking and using water (including groundwater), for constructing groundwater bores and for works on a waterway.
- An approved Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* (AH Act).

3.2.1 Planning and Environment Act 1987

The form of the Amendment included in the EES is intended to be identical in all four relevant planning schemes (Maribyrnong, Melbourne, Port Phillip and Stonnington) and would:

- introduce an incorporated document, the effect of which would be to exempt the Project from all otherwise existing permit requirements, and apply instead a set of project-specific controls, including a series of requirements for the approval of plans and documents under secondary consent;
- map the 'project land', to provide a basis for the subsequent declaration of the 'project area' under the MTPF Act to enable application of the delivery powers under that Act; and
- create a design and development overlay (DDO) applying to land where subsequent development may need to be controlled to prevent adverse impacts on Project infrastructure⁴.

This Assessment addresses the statutory planning approvals issues in Section 3.2.

3.2.2 Heritage Act 1995

The Heritage Act establishes approvals and requirements for works or activities that might affect sites listed on the Victorian Heritage Register and for works which might affect archaeological sites listed on the Victorian Heritage Inventory.

The effect of the Amendment is to remove the requirement for a planning permit under the applicable heritage overlays for all project works. The heritage overlay will otherwise remain in place. Notwithstanding the content of the incorporated document, some sites are also registered under the Heritage Act and works or activities will require separate approval under that Act. The incorporated document will not switch off the requirements of heritage overlays for any works not covered by the incorporated document (e.g. over-site development).

3.2.3 Road Management Act 2004

The Project will require works on a number of roads which in some cases will entail temporary partial or entire closures to vehicular traffic requiring consents under the Road Management Act.

⁴ NB the DDO is not proposed to be applied in the Maribyrnong Planning Scheme.

3.2.4 Water Act 1989

A licence from Melbourne Water is required under the Water Act for works (including tunnelling) under Moonee Ponds Creek and the Yarra River.

Any bore to extract or recharge groundwater would require approval under the Water Act from Southern Rural Water. A groundwater extraction licence would also be required from Southern Rural Water for dewatering of excavations.

3.2.5 Aboriginal Heritage Act 2006

The AH Act establishes the obligation to prepare a CHMP in specified circumstances, including for any project for which an EES is required under the EE Act. A CHMP is therefore required for the Project.

A CHMP must be approved by the relevant Registered Aboriginal Party (RAP) under the AH Act, unless there is no RAP for the subject land. There is no RAP for the land covered by the Project alignment, so the CHMP will be submitted to, and assessed by Aboriginal Victoria, and approved under the provisions of the AH Act which apply in situations where there is no RAP.

3.2.6 Major Transport Projects Facilitation Act 2009

The Premier declared the Project under section 10 of the MTPF Act on 4 September 2015. The declaration will enable the project delivery and utilities interface powers of the Act to be exercised once the required statutory approvals have been granted. A key element of those powers is initiation of compulsory acquisition procedures under the *Land Acquisition and Compensation Act 1986* (LAC Act) for land within a designated 'project area'. The project boundary proposed in Schedule 1 of the Amendment will provide the basis for a subsequent project area designation.

3.2.7 Other Victorian statutory approvals

Section 3.4 of the EES identifies a number of other Victorian Acts which may be relevant to the Project, including the *Crown Land (Reserves) Act 1978*, the *Environment Protection Act 1970* (EP Act), the *Land Act 1958*, the *Flora and Fauna Guarantee Act 1988*, the *Wildlife Act 1975* and the *Catchment and Land Protection Act 1994*.

3.3 Commonwealth statutory approval

On 22 September 2015, the delegate of the Commonwealth Minister for the Environment decided that the proposal is not a 'controlled action' provided it is undertaken in a particular manner (EPBC 2015/7549). The particular manner relates to monitoring of vibration in the vicinity of the Victoria Barracks in St Kilda Road. The Project therefore does not require assessment or approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act, Cth).

4 ASSESSMENT OF ENVIRONMENTAL EFFECTS

The Project is presented in the EES as a response to Melbourne's growing population and to current and projected future demand on the public transport system, as well as supporting accessibility to employment in the Parkville and Domain vicinities and catalysing urban renewal, especially in the Arden area. While the adverse impacts are almost all associated with the construction phase of the Project, the benefits, once construction is complete, will positively influence the way a growing Melbourne will function for many decades.

It is incumbent upon MMRA and its contractors to acknowledge the issues of disruption and inconvenience arising from the Project's construction phase. While the Project's benefits will be shared by millions of people, it is the case here that, as it is for other major projects of this type, the adverse impacts of construction will be most acutely felt by a much smaller number of stakeholders.

The Assessment of the impacts of the Project involves an assessment of the following questions.

- How will existing conditions be affected by the Project – both in the construction phase and following completion?
- Can those identified impacts be acceptably mitigated or managed in any way, and if so, how?

4.1 Consideration of environmental effects

I have been assisted in this Assessment by the preparation of the EES, the public submissions which have been made in relation to the EES, and the IAC's consideration of those and other related matters.

It is apparent that the aspects of the Project likely to generate the greatest effect on the environment are:

- noise and vibration, especially that generated during the construction phase;
- traffic and transport management, especially during the construction phase;
- ground movement and stability;
- protection of historic heritage assets and values;
- impacts on existing businesses during the construction phase;
- removal of trees, especially in the context of landscape, heritage and amenity values;
- management of spoil excavated from station boxes, tunnels and portals, some of which may be contaminated due to historical land use practices or prone to acid formation; and
- management of groundwater, especially during the construction phase before station boxes and portals are lined to restrict ingress of groundwater.

The construction of a project of this scale will generate a great deal of disturbance to the day to day lives of businesses, residents and others who live, work, play or travel in the areas most affected by the works. In the end, many of those most affected by the construction of the Project can be expected to enjoy the benefit of access to new public transport infrastructure in close proximity – but the interim impact of construction activity cannot be ignored.

At this time, the precise nature of all works required to deliver the Project is not known, but the key elements of the Project are sufficiently well understood and the MMRA has advanced a detailed concept design against which to measure the environmental effects of the Project. The Project and its potential effects on the environment are presented in the EES in the context of the concept design.

The approach adopted by the MMRA is common to projects of this type and appropriate in this case. Such an approach necessarily requires careful consideration of the way in which any environmental effects might be mitigated or managed through the adoption of a regulatory framework that strikes the right balance between both:

- providing adequate clarity to protect the environment from negative impacts; and

- ensuring sufficient flexibility to facilitate the adoption of innovative solutions to environmental issues as they arise in detailed design and construction.

The EES proposed an extensive list of EPRs which articulate the way in which the environmental effects of the Project might be addressed. The drafting of these EPRs seeks to adopt a “performance based” approach to environmental management. The “performance based” approach is, in general terms, a commonly used tool to address environmental management, particularly for projects of this size.

It is evident from the IAC Report, and from the submissions received, that this is a Project that enjoys a great deal of support across a range of stakeholder groups and among members of the broader community. The Project is regarded as one which is important for Melbourne and in my opinion should proceed, notwithstanding the assessed impacts of the Project on the environment. It is very important that the effects of the Project on the environment are mitigated and managed to the extent possible and feasible.

On balance, **it is my assessment** that there are environmental effects that will be caused by the Project and that they are capable of mitigation or appropriate management, having regard to the nature and extent of those impacts and their expected duration. However, the purpose of the Project is to make changes to the physical structure of the city. With careful management, changes to the physical environment caused by the Project will be outweighed by the benefits of the Project to the broader community.

In ensuring that the environmental effects are mitigated and otherwise appropriately managed, it is important to ensure that there is in place an appropriate statutory control regime including an environmental management framework (EMF), an urban design strategy and detailed design responses to give effect to the intended mitigation and management strategies.

4.2 Management of environmental effects

It is important to be clear that, simply by virtue of the scale of an undertaking of this type, there will be inevitable and occasionally significant disruption to the lives of ordinary people. This Assessment, and the process which has led to it, recognises that it will not always be possible to avoid all of the effects of the Project (particularly during the construction phase). There will be times, even with the application of best practice mitigation measures, that the Project will have a range of environmental impacts. This must be expected when a major infrastructure construction project is undertaken over a period of years through established inner suburbs and the CBD. Not all of the impacts can be fully mitigated. In some cases, full mitigation may simply be unviable, or have other consequences (such as delay in construction and thereby prolonging the period of disruption itself).

A balance needs to be struck to ensure that the mitigation and management of adverse impacts of the Project achieves an outcome which also recognises that it is in the broader community interest (and the interests of those most affected by construction activity) that the period of construction is as efficient and cost effective as possible.

The MMRA, as proponent on behalf of the government, should continue to acknowledge and respond sensitively and generously to individuals, families, businesses and institutions who will bear the greatest burden of the adverse impacts of the Project in the construction phase. My review of the process of environmental investigation, to date, leads me to conclude that the MMRA demonstrates a preparedness to engage with affected stakeholders and to try to find solutions which strike an appropriate balance.

Given that much depends upon the mitigation and management of at times significant environmental impacts, it is also important that any approvals regime provides an adequate framework for the day to day delivery of the Project within identified parameters of environmental performance arising from this Assessment and the process of investigation which has led up to this

point. It is also important that the framework facilitate the further improvement of environmental outcomes as the Project design is refined. The EMF must set clear obligations, but it must also be sufficiently flexible to allow for innovation and exigencies which arise during detailed design and construction.

The EES included a draft Amendment which the MMRA suggests would establish the principal architecture for approval of the Project. The proposed Amendment requires the preparation of Early Works Plans and Development Plans for the project works. It also provides for an urban design strategy (Urban Design Strategy) and for an EMF that relies on comprehensive EPRs.

The Early Works Plans, Development Plans, Urban Design Strategy and EMF are proposed to be prepared to the satisfaction of the Minister for Planning. This is an appropriate arrangement. The EES included drafts of the EMF and EPRs and the Urban Design Strategy. The IAC has generally supported the proposed planning approval structure subject to detailed recommendations about particular elements of the overall planning control package, which are addressed in detail in subsequent sections of this Assessment.

In particular, the proposed planning controls contemplate the inclusion of an incorporated document into the planning scheme, which in turn triggers the requirement for the approval of an EMF, which in turn includes EPRs. The broad structure of the proposed planning controls is common for projects of this type and scale. There are detailed drafting elements that will need to be resolved in any planning scheme amendment, but the substance and the structure of the controls is appropriate to the task.

A very important part of that structure which is contemplated is the content and drafting of the EPRs. The EES was published with a draft set of EPRs, but I note that over time the content of the EPRs has been refined by MMRA (including in response to submissions). I also note that a good deal of the work of the IAC involved examining the form and content of the EPRs to ensure that they create an appropriate framework for mitigating and managing the environmental effects of the project. Much of this Assessment is concerned with assessing the environmental effects of the Project in light of the EMF and in particular the EPRs, which have been proposed by the MMRA and which have been commented upon by the IAC and other stakeholders.

As well as setting environmental standards for the Project to achieve, some EPRs create obligations for a range of detailed plans to deal with specific issues. Other EPRs also provide for further modelling and for monitoring programs. The purpose of the EPRs should be to set clear standards for environmentally acceptable performance, either by reference to statutory obligations which would apply anyway (such as State Environment Protection Policies), or by establishing project-specific benchmarks which have regard to best practice and community expectations. The EPRs should prescribe environmental performance standards, whether by reference to existing Victorian standards or to other appropriate standards, while providing suitable flexibility for the preferred contractor to exercise initiative and innovation in selecting and implementing mitigation measures to meet the EPRs.

I have also noted the proposed use of Residential Impact Mitigation Guidelines Residential Impact Mitigation Guidelines and Business Support Guidelines for Construction (Business Support Guidelines for Construction) to provide a consistent basis for management of particular residual impacts during the construction period. It is appropriate that MMRA acknowledge the need for and refinement of these guidelines. Elsewhere in this Assessment, I have concluded that both documents should be finalised in consultation with DELWP and should be included in the final EMF to be submitted for my approval.

Provision also needs to be made for community engagement on the Early Works Plan(s) and Development Plans. At the same time, I recognise that the engagement process must be efficient and should not itself contribute to increased uncertainty about Project timing or cause undue delay in delivering the Project.

In particular, care needs to be taken to ensure that adequate support to particularly vulnerable stakeholders is provided, whether or not those stakeholders are subject to compulsory acquisition.

It is my Assessment that:

- provided that the recommendations of this Assessment are implemented, the environmental effects of the Project can be adequately managed or mitigated; and
- the MMRA should refine the EMF and EPRs in consultation with DELWP prior to submitting the EMF and EPRs for my approval (noting that MMRA should also engage with relevant statutory authorities in arriving at the final form of the EPRs).

4.3 PLANNING CONTROLS

On 17 December 2015, the MMRA requested that I act as the planning authority for an amendment under the P&E Act, to facilitate the project subject to a favourable assessment of the EES and any other considerations that may arise from the report of the IAC. For this reason, the Minister for Planning appears as the planning authority on the draft Amendment to the Melbourne, Port Phillip, Stonnington and Maribyrnong Planning Schemes that was developed by MMRA and included in the exhibited EES.

I will decide whether to proceed with the Amendment after this assessment and the report of the IAC has been provided to the Minister for Public Transport.

In broad terms, the Amendment proposes to:

- introduce a new incorporated document for the Melbourne Metro Rail Project into each of the affected planning schemes;
- make the Minister for Planning the responsible authority for the planning provisions applying to the Project;
- map the land affected by the Project; and
- introduce a DDO over the project land and adjacent land within which development may need to be controlled to prevent adverse impacts on the Project infrastructure (the DDO requires planning permits for certain types of buildings and works which will be referred to the Secretary to the Department of Economic Development, Jobs, Transport and Resources).

The effect of the incorporated document would be to exempt the Project from the other provisions of the planning schemes. It will also establish requirements for the preparation of an Urban Design Strategy, an EMF, Early Works Plan(s) and Development Plans for the Project, all prepared to the satisfaction of the Minister for Planning before relevant Project works commence (except for Preparatory Works). The EMF must include EPRs which set out the environmental performance standards that the project must achieve.

The draft incorporated document was updated by MMRA throughout the IAC hearing process in response to feedback from submitters. The final tabled version of the proposed incorporated document was *Melbourne Metro Rail Project, Incorporated Document, 7 October 2016*. The IAC's comments were made in relation to this version of the document.

The maps of the project land would provide the basis for the subsequent declaration of a project area under the MTPF Act. Declaration of the project area enables exercise of the delivery powers under the MTPF Act.

4.3.1 Incorporated document

The IAC noted that the detail of various clauses of the incorporated document attracted submissions and commentary, but generally endorsed it as the appropriate planning tool to deliver the Project.

The Amendment will require detailed assessment to ensure that it regulates the delivery of the Project to meet both the purposes of the Project and the overarching objectives of the P&E Act as

well as the matters raised through the EES process and this Assessment. I will consider these matters in deciding whether and in what form to proceed with the Amendment.

The IAC has recommended that a period of 15 business days be provided for stakeholder comment on the Early Works Plans and the Development Plans. In reaching that conclusion it noted the MMRA's proposed provision of a two-week comment period on the Development Plans, submissions from key stakeholders seeking substantially longer comment periods and the level of new detail which would be expected to be contained in those plans.

The IAC considered the issue of how the EMF and the associated EPRs should be connected to the incorporated document. The EPRs which are a component of the EMF were carefully scrutinised. Relative to alternative models put forward by some submitters, the IAC concluded that it supported the model proposed by the MMRA for the EMF, including that the EPRs be approved by the Minister for Planning as a consent under the incorporated document, rather than, for example, being included in a schedule of the incorporated document. There is a tension between the desire for certainty and the need for flexibility. The desire for certainty, if left untempered, might lead to the result that a version of EPRs becomes part of the incorporated document. This raises the question: *Which version of the EPRs should be elevated to such a status?* And the further question: *Is it appropriate that no variation from such a version could occur without amendment to the planning scheme?*

It must be acknowledged that flexibility during detailed design and construction is essential when dealing with a project of this size because it creates opportunities to consider a range of other options which could improve environmental performance in an agile and timely way.

The approvals framework established by the draft incorporated document contemplates that I will be responsible for approval of the key documents and plans. My approval decisions will be informed by the detailed assessment of both the IAC and this Assessment. I will have the flexibility to approve EPRs which differ from what has been proposed so far, but I will require justification for any departure in the context of the very detailed EPRs which formed the basis of the IACs consideration and this Assessment. In substance, this is not much different to a situation where the EPRs are incorporated and an amendment is required, which could be granted by me in my capacity as Minister for Planning under s 20(4).

In this Assessment, I have endorsed the broad approach of the IAC in this respect.

4.3.2 Design and development overlay

The Project involves the construction of an important piece of transport infrastructure. It is critical that the State's investment in that infrastructure is not compromised by planning decisions concerning land which sits above or in the vicinity of the tunnel which has the capacity to affect the structural integrity of the tunnel itself, by either excessive loads or by the removal of existing structures which might create localised heave. It is necessary that there be controls in place to ensure proper consideration is given to future development above the tunnel alignment and in the vicinity of the tunnel infrastructure. It is also appropriate that landowners whose property might be affected by the presence of the tunnel infrastructure are made aware of the existence of the tunnel. The Amendment which appeared in the EES contemplated a Design and Development Overlay (DDO). I agree that a control with the features of that included in the EES would be appropriate to manage the land use and development implications of development above the tunnel infrastructure. It will be important for the management of this issue to have publicly available maps included in the planning scheme, and controls like those contained in the DDO which trigger consideration of the detailed engineering issues which might flow from development above the tunnels.

4.3.3 Secondary consents

The incorporated document requires the following documents to be prepared to the satisfaction of the Minister for Planning before relevant project works (other than preparatory works) may commence:

- Environmental management framework;
- Urban design strategy;
- Early works plan; and
- Development plans.

The EMF will provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with construction and operation phases of the project, in order to achieve acceptable environmental outcomes. The proposed approach whereby the incorporated document requires that the Project be constructed and operated within environmental parameters established by an EMF is common for projects of this nature and scale.

The incorporated document requires the Early Works Plan and the Development Plans to be in accordance with the approved Urban Design Strategy. The draft incorporated document provides for early works as a specified element of Project works. Early works may not commence until the Early Works Plan has been approved by the Minister for Planning. It must be in accordance with the approved EMF and Urban Design Strategy.

The incorporated document also provides for precinct-based Development Plans to address detailed design. Relevant works may not commence until the Minister for Planning has approved a development plan, which must be in accordance with the approved EMF and Urban Design Strategy.

The IAC has recommended that a public comment period of 15 business days be provided for the Early Works Plan and the Development Plans.

4.3.4 Environmental management framework

The broad structure of the statutory framework has been endorsed by most submitters and the IAC. Some of the aspects of the proposed EMF are peculiar to this project and are considered below. An essential part of the framework is the EPRs, which are proposed to set the detailed environmental standards under which the MMRA and its contractors must mitigate or manage the environmental effects of the Project. The published EPRs were the subject of considerable attention in the public submissions process and during the IAC hearing.

The MMRA, in accepting and responding to issues arising throughout the hearing, iteratively amended the EPRs to reflect its position. The last version of the EPRs provided to the IAC was Version 4. In making its recommendations, the IAC has produced a table at Appendix F of its report, where it sets out the changes it suggests.

Much of Section 5 of this Assessment is necessarily concerned with the content of the EPRs as they apply to discrete aspects of the Project, as they establish performance standards for all of the environmental effects of the Project. My comments in this Section of the Assessment should be read in the context of observations and assessments I have made elsewhere in the body of this Assessment in the context of particular environmental impacts. In this Section I address the appropriateness of the framework, and in particular some of the matters raised for my consideration by submitters and the IAC.

The EPRs have been developed to specify the required environmental outcomes for the Project, whilst providing for flexibility and innovation by the selected contractor in choosing and implementing mitigation measures to achieve those outcomes. The EMF sets out the accountabilities and monitoring requirements associated with the EPRs in order to ensure that the environmental impacts and risks of the project are managed appropriately. The IAC notes in its report that the EMF is a sound and robust framework for managing the environmental effects of the Project during its construction and operational stages. Clause 5.2 of the proposed incorporated document (IAC Document 357, dated 7 October 2016) proposes to require that the EMF and EPRs are to be submitted to me for approval before the Project works (other than preparatory works) commence.

I understand that the EMF and EPRs which I approve will then also form part of the contractual arrangements for delivery of the Project, to be enforced by MMRA on behalf of the State.

The broad architecture for the proposed controls is appropriate. My support for this framework is based upon the comfort that I derive from the fact that I have power under the incorporated document to give effect to this Assessment and require the MMRA to update the EMF and EPRs, following this Assessment and in consultation with DELWP and taking into account the recommendations of the IAC and this Assessment.

Understandably, the IAC was invited in submissions to consider numerous refinements of the EMF, and in particular, the EPRs – across a wide range of issues. Many of those submissions came from persons who are affected by the Project and who have a particular individual interest to protect. It is perfectly understandable that parties in that position would want to see the EPRs drafted in very precise language, and incorporated into the planning scheme in a way that would make departure from the precise language difficult.

For each EPR there is a question as to what level of prescription in the planning framework is necessary to drive an appropriate level of mitigation and management of the environmental effects of the Project. It must be recognised that this Project will be one sponsored by the State of Victoria, which has an interest in ensuring that the environmental impacts of the Project are properly mitigated and managed. I have come to the conclusion that the EPRs should remain for the most part focussed upon outcomes – rather than descending into a detailed prescription of how each outcome should be achieved. I agree that in some instances a greater level of detail will be appropriate. Striking the balance between detail and outcome-orientated performance is, I think, the best way to ensure that the Project will be capable of responding to the environmental issues which arise.

The EPRs which are contained in MMRA's Version 4, augmented by the changes suggested by the IAC and further refined as I have recommended in this Assessment, are:

- sufficient to address the full range of issues likely to be encountered in construction;
- prescriptive enough having regard to the function which they are intended to serve; and
- not required to be referenced by name or by a specific version, but are appropriately the subject of my approval and amendment from time to time, as and if the need arises.

The EMF establishes requirements for a series of subordinate plans that will contain these detailed mitigation measures to be selected and implemented by the successful contractor. Importantly, construction of the Project (other than preparatory works) cannot commence until a program for the process and timing for development of plans required by the EPRs has been developed. The Independent Environmental Auditor will be required to verify that the contractor has complied with the relevant EPRs prior to the plans' implementation.

I note that some EPRs (such as NV20, B2 and SC2) make reference to the Residential Impact Mitigation Guidelines and the Business Support Guidelines for Construction. However, there is no explicit requirement in the approvals framework considered by the IAC for the Residential Impact Mitigation Guidelines or Business Support Guidelines for Construction to be finalised, adopted or implemented. As I have concluded in Sections 5.4, 5.5 and 5.7, I think that these documents should form part of the EMF which will be subject to my approval.

As well as changes to the EMF to incorporate the Residential Impact Mitigation Guidelines and Business Support Guidelines for Construction, amendments to a number of EPRs are needed to strengthen the Project's environmental and social obligations. These recommended changes reflect the principle that the EPRs should remain focused on the standards and environmental outcomes to be met by the Project without prescribing mitigation or management measures.

Open communication and stakeholder consultation is a core component of the EMF and essential to the effective management of Project impacts. The IAC recommended revisions to EPR SC3 and the

insertion of EM4 (which provides for complaints management) to give effect to that objective. Active engagement with key stakeholders (including relevant agencies and councils as well as specific reference groups for transport and for Parkville precinct institutions) were also the subject of specific recommendations in relation to the proposed incorporated document to:

- provide further opportunities for stakeholder comments on the Early Works Plan (similar to the proposed arrangements for comments on Development Plans prior to approval under the draft incorporated document), which should include a 15 business-day period for the receipt of written comments; and
- appoint independent chairs to convene both the TTWG and the Parkville Precinct Reference Group.

In principle, these suggestions are appropriate and, in this Assessment, I have endorsed the broad approach of the IAC in this respect.

A number of submitters raised the role of the Independent Environmental Auditor and Independent Reviewer, and how each of these would function. The roles of the Independent Environmental Auditor and the Independent Reviewer were described in Technical Note 69.

The Independent Environmental Auditor is required to be appointed under EPR EM3, and will be required to audit compliance with proposed plans (such as the Construction Environmental Management Plan). The Community and Stakeholder Engagement Plan will include a complaint management process for the MMRA and the main contractor that complies with best practice. The Independent Environmental Auditor will have a role to oversee unresolved complaints arising during the Project.

The role of the Independent Reviewer is to review design and construction activities, review and approve (with the MMRA) contractor documentation and to monitor compliance with project scope and technical requirements as defined in the project contract. This role and function is a common element of public private partnership contracts, and is therefore applicable to the main project works but not to early works. I am satisfied that this approach is appropriate to a project of this kind.

4.4 POST-APPROVAL GOVERNANCE

It is clear from the EES and IAC Hearing processes that there are many points of the Project that will attract much public interest and therefore should be the subject of ongoing consultation through the Project's construction. Hence, **it is my Assessment** that the MMRA establish (in consultation with DELWP) an Intergovernmental Committee (IGC) prior to any works; co-chaired by the MMRA and DELWP with membership to include relevant government departments and the four affected councils. The Secretariat is to be provided by the MMRA for the group. Moreover, **it is my Assessment** that the DELWP establishes a Development Plan Review Committee. The committee will have terms of reference to provide advice in relation to my consideration of the Project Development Plans. **It is my Assessment** that MMRA establish four precinct reference groups (each with an independent chair) within the Domain/South Yarra, Central Melbourne, Parkville and Arden/South Kensington precincts. The Development Plan Review Committee, along with precinct reference groups, the Traffic and Transport Working Group and an Urban Design and Architectural Advice Panel (see Section 5.9) would also be available to advise the IGC.

5 EVALUATION FRAMEWORK FOR ASSESSMENT

To provide an integrated structure for this Assessment, key aspects of legislation and statutory policy relevant to the potential effects of the Project have been synthesised into a set of evaluation objectives. These evaluation objectives assist in assessing the likely environmental effects and outcomes of the Project. The objectives are derived from the draft evaluation objectives that were included in the Scoping Requirements for the EES, and were used by MMRA in its assessment of alternatives and effects within the EES.

The IAC considered the draft evaluation objectives, but structured its report to provide a close focus on specific environmental issues.

The IAC in its report drafted a new objective with regard to electromagnetic interference, which had not been addressed in the Scoping Requirements. In addition, the Scoping Requirements did not include evaluation objectives for arboriculture and for greenhouse gas, which are addressed as specific topics by the EES, the IAC and this Assessment. Table 1 lists the final set of evaluation objectives used in this Assessment, presented in order of the Assessment sections that address them.

This Assessment also considers the consistency of the Project with the principles and objectives of ecologically sustainable development (ESD, see *Ministerial guidelines under the Environment Effects Act 1978*, pp. 19, 27). Key legislation, including the P&E Act, EP Act and EE Act incorporate objectives and/or principles of ESD. The various evaluation objectives address different matters relevant to the objectives of ecologically sustainable development.

Table 1. Assessment evaluation objectives.

| Section | Final evaluation objective |
|---------|---|
| 5.2 | Transport connectivity – <i>To enable a significant increase in the capacity of the metropolitan rail network and provide multimodal connections, while adequately managing effects of the works on the broader transport network, both during and after the construction of the Project.</i> |
| 5.3 | Land use and planning – <i>To manage effects on land use and land use change in the area of the Project.</i> |
| 5.4 | Social and community – <i>To manage effects on the social fabric of the community in the area of the Project, in particular with regard to community cohesion and access to services and facilities, especially during the construction phase.</i> |
| 5.5 | Business – <i>To manage effects on business in the area of the Project, including with regard to business functionality and access to services, facilities, supplies and markets, especially during the construction phase.</i> |
| 5.6 | Air quality – <i>To minimise adverse air quality effects on the amenity of nearby residents and local communities, as far as practicable, especially during the construction phase.</i> |
| 5.7 | Noise and vibration – <i>To minimise adverse noise or vibration effects on the amenity or other relevant interests of nearby residents and other stakeholders, as far as practicable, especially during the construction phase.</i> |
| 5.8 | Aboriginal and historic cultural heritage – <i>To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values.</i> |
| 5.9 | Urban design, landscape and visual – <i>To protect and enhance the character, form and function of the public realm and buildings within and adjacent to the Project alignment, and particularly in the vicinity of Project surface structures, having regard to the existing and evolving urban context, and to avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.</i> |
| 5.10 | Surface water – <i>To protect waterways and waterway function and surface water quality in accordance with statutory objectives and with relevant best practice principles.</i> |
| 5.11 | Groundwater – <i>To protect groundwater quality and water table levels from changes leading to adverse environmental effects as far as practicable.</i> |
| 5.12 | Ground movement and land stability – <i>To avoid or minimise adverse effects on land stability that might arise directly or indirectly from Project works.</i> |

/cont.

Table 1 (cont.). Assessment evaluation objectives.

| Section | Final evaluation objective |
|---------|---|
| 5.13 | Contaminated land and spoil management – <i>To identify and prevent potential adverse environmental effects resulting from the disturbance of contaminated or acid-forming material and to manage excavation spoil in accordance with relevant best practice principles.</i> |
| 5.14 | Biodiversity – <i>To avoid or minimise adverse effects on native terrestrial and aquatic flora and fauna, in the context of the Project’s components and urban setting.</i> |
| 5.15 | Arboriculture – <i>To avoid or minimise adverse effects on trees as far as practicable, having regard to heritage, landscape, amenity, biodiversity and other values of trees in the vicinity of Project works.</i> |
| 5.16 | Greenhouse gas – <i>To manage direct and indirect emissions of greenhouse gases arising from or in association with the Project in accordance with best practice principles as far as practicable.</i> |
| 5.17 | Electro-magnetic interference – <i>To ensure potential electro-magnetic interference impacts of the Project are understood and managed.</i> |

5.1 Project alternatives

In accordance with the *Ministerial guidelines under the Environment Effects Act 1978* and the Scoping Requirements issued under the EE Act for the Project, the EES was required to describe and assess relevant alternatives for particular project components, identify the environmental effects of each alternative and, where relevant, explain why the preferred alternative was selected. As with the study of environmental effects, the assessment of alternatives was risk-based⁵ in nature.

The EES records the consideration of alternatives for several aspects of the Project (described in Chapters 5 and 6 of the EES). Of those, the following alternatives were considered by the IAC:

- portal location Options A and B and associated aspects at South Kensington;
- TBM launch sites at Domain and Fawkner Park;
- tunnel alignment under or over CityLink tunnels near St Kilda Road;
- location of emergency access shafts; and
- location of electrical substation at Arden Station Precinct.

Following receipt of submissions and the commencement of the hearing process, MMRA made further design and construction assessments which resulted in a number of changes to the Concept Design prior to and during the hearing process before the IAC – such as the abandonment of Fawkner Park for a TBM launch and works site, removal of permanent tunnel emergency access shafts and the selection of the “under CityLink tunnels” option (Refer to Chapter 2.4 of IAC report). Where changes to the Concept Design were made, the IAC did not consider the environment effects of the removed options or areas. This Assessment takes the same approach.

MMRA post hearing changes

On 24 November 2016 MMRA wrote to me to request adjustments to the Project Land in the incorporated document included in Amendment. In summary, there are four changes to the Project Land:

1. reduction in the extent of private property to be acquired (residential and commercial) at the Western Portal, due to MMRA’s selection of Option B;
2. the selection of a route for existing high voltage power lines at the Western Portal;
3. a minor increase to the land required at the Shrine of Remembrance Reserve (MMRA has entered into a licence in respect of this land with the Shrine of Remembrance Trustees, and no additional trees will be removed as a result); and

⁵The Ministerial Guidelines define ‘environmental risk’ as the potential of negative change, injury or loss with respect to environmental assets. The level of environmental risk will reflect the combination of likelihood and magnitude, as well as extent and duration, of potential environmental effects. EES documentation should be prepared in the context of the principle of proportionality to risk. ‘A risk-based approach should be adopted in the assessment of environmental effects so that suitable, intensive, best practice methods can be applied to accurately assess those matters that involve relatively high levels of risk of significant adverse effects and to guide the design of strategies to manage these risks.’

4. a proposal to include private land at 15 Williams Street South Yarra, with the written consent of the owner.

These changes will not result in additional environmental impacts. The discussion regarding the above changes to the Project land is outlined in Section 5.

The refinement of the project design has reduced the number of trees to be removed by 117 (refer to Section 5.15 for more information), and eliminated the use of Fawkner Park – a significant open space valued by the community. Elsewhere in the Domain Station Precinct, the location of a temporary access shaft in the vicinity of the western carriageway of Linlithgow Avenue remains to be determined. The location of the Linlithgow Avenue temporary access shaft, should be further investigated so that siting minimises effects on transport, landscape and heritage perspectives (see Sections 5.3, 5.8, 5.9).

Two options for the location of the Western Portal were presented in the EES and considered by the IAC. The MMRA has further assessed the two options since the IAC Hearing and notes the preference to reduce the extent of acquisition of private properties (residential and commercial). The MMRA has said that Option B would result in a reduction of property acquisitions. The IAC supported Option B noting that the reduction in properties to be acquired will likely minimise social impacts on the Kensington community. An assessment of the issues is provided in Sections 5.2, 5.3 and 5.4.

IAC suggestions for further consideration

South Kensington

The IAC suggested that there was an opportunity to upgrade the existing South Kensington station potentially arising from or in association with the Project. I encourage the MMRA and wider Government to explore whether this opportunity could be pursued.

South Yarra Station

The IAC addressed submissions made by Stonnington City Council as to whether the Project should be changed to include a station at South Yarra, I accept the comments made by the IAC at pages 269 and 270 of the report that:

....Ultimately the Committee has not been persuaded that the benefits of a new South Yarra station are such as to justify its inclusion as part of this Project, having regard to its likely cost.

However, the Committee accepts that the relative cost/benefit ratio of a new, additional station at South Yarra may change over time, and accordingly, the Committee considers that the design and construction of the Project should not preclude the ability to include such a station as part of the metropolitan network at some time in the future.

In view of the above, the Committee does not recommend that a new station at South Yarra be considered or included as part of the Project. However, the design stage of the Project should seek to ensure that if possible, the option of providing for such a station at some time in the future should not be precluded.

I adopt the conclusion reached by the IAC (extracted above) and I encourage the MMRA and wider Government to consider this opportunity when preparing the final design for the Project.

Domain Station

The IAC also noted submissions from residents proposing an alternative location for Domain Station outside the St Kilda Road carriageways and within the western edge of the Shrine of Remembrance Reserve. In this Assessment, I have concluded that the environmental effects of the Project as proposed for the Domain can be adequately mitigated and managed, however I have also said that the opportunity for refinement of the Project to achieve an even better environmental outcome should be facilitated. Moving the proposed Domain Station in the way considered by the IAC may result in potential traffic management, amenity, heritage benefits (particularly in relation to tree

retention), and urban design and landscape opportunities during and after the construction phase, and is something I think should be further investigated.

5.2 Transport

Evaluation objective – *To enable a significant increase in the capacity of the metropolitan rail network and provide multimodal connections, while adequately managing effects of the works on the broader transport network, both during and after the construction of the project.*

Transport impacts are addressed in Chapter 8 and Technical Appendix D of the EES and in Chapter 5 of the IAC Report. EPRs T1 to T10 deal with matters relating to transport and these EPRs have been the subject of recommendations by the IAC.

Assessment context

Melbourne Metro will confer substantial long-term transport benefits: increased capacity of the metropolitan passenger rail network, improved multi-modal connections and the potential to facilitate a wide range of further network enhancements in the future.

It is anticipated that there will be significant transport effects during the Project's construction phase, with the extent and duration of impacts varying between precincts and between modes of transport. Construction-related impacts will arise from:

- changed conditions of roads during construction, including road closures and restrictions, which will impact local traffic patterns and the wider network, bus and tram operations, and cycling and pedestrian access;
- truck movements to remove excavated material from, and deliver equipment to, project works locations;
- loss of public and private car parking; and
- the presence of a large construction workforce which would generate additional local traffic activity.

During construction, road closures and restrictions will give rise to increased traffic congestion and delays in and around precincts. The closure of Grattan Street and Domain Road and restrictions on St Kilda Road and on Flinders Street will impact traffic flows locally and within the broader region. There will be disruption to public transport services including the re-routing of bus services due to the closure of Grattan Street, re-routing the Number 8 tram in the Domain Precinct, and construction activities in the CBD North and CBD South station precincts. Pedestrian and cycling routes around construction sites will need to be maintained and carefully managed. In some precincts, construction activities will result in the temporary loss of private and public car parking.

During operation, there will be some permanent changes to the road network. Notably, Grattan Street will be reduced to one lane in each direction between Flemington Road and Leicester Street to provide for a bus lane in each direction. St Kilda Road will be configured as three lanes each way with a parking lane that would be available as a clearway during peak periods, between Domain Road and Toorak Road.

Pedestrian volumes are projected to increase significantly around the new stations. All stations will need to be designed to accommodate these higher levels of pedestrian activity, along with new bicycle infrastructure including new bicycle lanes and bicycle parking at new stations.

Discussion

The key transport challenges facing Melbourne are expressed in the Plan Melbourne Refresh discussion paper (released in October 2015) *as the city grows, Melbourne's transport network will be under increasing pressure which will impact on productivity and the city's liveability. Building new transport infrastructure will be a key part of responding to increased demand, particularly in the fast-growing parts of the city.* As Melbourne continues to grow, the existing transport network will be unable to meet demand, particularly during peak periods. At the same time, Melbourne's central

core is expanding into areas that have insufficient public transport coverage (such as Arden-Macaulay and Parkville). Without a significant boost in public transport services to these and other locations in an expanded central Melbourne, their ability to contribute to an effective expanded CBD would be compromised.

Melbourne Metro is intended to respond to these challenges by supporting the creation of rail network capacity to serve the ongoing expansion of Central Melbourne, as well as providing direct access to the Arden-Macaulay, Parkville, CBD, Southbank and St Kilda Road precincts. Indirectly, Melbourne Metro would support increased central city rail capacity on other lines. Finally, Melbourne Metro would improve links between the expanding central Melbourne and major employment nodes and growth corridors in Melbourne's west, north and southeast. The IAC quoted the Project's business case stating that *Melbourne Metro also provides the backbone for further improvements to the network in the future, by incorporating features such as longer platforms and high capacity signalling, which allows a logical staged approach to expanding the rail network.*

The Project is also intended to provide multimodal connections and improve the broader public transport network. This is to be achieved through relieving pressure on heavily patronised tram and bus routes (including the St Kilda Road and Swanston Street corridor and bus route 401), new tram interchanges at Domain and Parkville precincts and direct connections between the proposed CBD North and Melbourne Central station and the proposed CBD South and Flinders Street station.

To deliver this significant investment in public transport infrastructure, some tolerance to changed transport conditions during the Project's construction phase, as well as in the legacy condition, will be required.

Transport impacts are expected across all the precincts during construction when compared with the existing conditions. These impacts will include:

- temporary loss of access for residents, businesses and other users;
- loss of car parking;
- reduced connectivity;
- increased congestion on local roads and the wider network;
- rerouting and delays for public transport users; and
- changed pedestrian and cycling conditions.

After completion of the Project, there will be differences for some people, whether on the road in cars or on public transport, but on balance those changed conditions will be overwhelmingly positive for the community as a whole, having regard to the nature of the Project and its objectives.

To manage both construction and legacy transport impacts, Transport EPRs establish a management framework and specify transport outcomes for individual precincts.

Management framework

The management framework to address transport impacts includes:

- the establishment of a Traffic and Transport Working Group (TTWG, EPR T1);
- preparation of transport management plans (TMPs), for each precinct and across the Project, (EPR T2); and
- a Travel Demand Strategy (EPR T5).

Further transport analysis is required to quantify predicted traffic volumes in some parts of the network and to determine specific mitigation measures that should apply (as noted by the IAC). I acknowledge, however, that there is a limit to the value of further predictive modelling at this stage. The optimal form of mitigation or management will likely become more apparent as the detailed design is undertaken, and to some extent, once the Project is underway and the exact impact on the travel patterns of road users begins to emerge. An adaptive approach and ongoing consultation will be required to refine and improve outcomes and this is an important aspect of the proposed

mitigation and management regime. Close monitoring of the effectiveness of mitigation measures and implementing contingency plans where inadequate performance is identified will need to be built into the TMPs to support this adaptive management regime.

The TTWG's role is to review and provide feedback on the preparation and implementation of the TMPs. I recognise that the TTWG (which has already been in operation for some time) will play an important role in coordinating relevant agencies. Moreover, the TTWG will provide guidance on required modelling, to identify performance levels and benchmarks to be achieved within each precinct and to select the most appropriate solutions to mitigate effects. The TTWG will also have a role in advising stakeholders of potential impacts and considering stakeholder responses. The IAC made recommendations to strengthen the transparency of the operation of the TTWG, including the setting of terms of reference and the appointment of an independent chair to remove perceived conflicts of interest that might arise if the MMRA continues in the role of chair of the TTWGs.

The TMPs, supported by adequate modelling and further investigations, will include measures to minimise disruption to affected local land uses, traffic, car parking, public transport, pedestrian and bicycle users. The IAC's recommended EPR T2 is very broad in its requirements for TMPs. While I generally support the intent and coverage of EPR T2, there is opportunity to provide greater clarity by splitting it into several discrete EPRs.

Construction phase issues

The IAC suggested broadening the scope of the TMPs with regards to public and private car parking. The IAC observed that there was little consideration given in the EES to local parking impacts (particularly disabled parking), waste collection and deliveries across the precincts. The IAC suggested amendments to EPR T2, which require a parking management plan, to the effect that an objective should be to minimise the loss of public and private parking and reinstatement of parking at the earliest opportunity. I support this amendment.

The IAC recommended that the site for a temporary access shaft, which would necessitate partial or full closure of Linlithgow Avenue should be reconsidered. The closure of Linlithgow Avenue would compound the traffic issues arising from the closure of Domain Road, as well as potential road closures on Flinders Street. The City of Melbourne identified an alternative site for the temporary access shaft, within Tom's Block adjacent to Linlithgow Avenue, which has the capacity to reduce the impact on traffic, pedestrians and cyclists. My findings in relation to the Linlithgow Avenue access shaft are provided in Section 5.1.

The IAC also noted submissions from residents proposing an alternative location for Domain Station outside the St Kilda Road carriageways, within the western edge of the Shrine of Remembrance Reserve. My findings in relation to this matter are provided in Section 5.1.

Legacy phase issues

The EES proposed provision of 20 bicycle parking spaces at each of the CBD stations and 50 spaces at each of the other three stations. In the light of submissions, the IAC concluded that further work is needed to quantify appropriate bicycle parking provision at each station, particularly in light of the growing popularity of cycling in Melbourne. I support amendments to EPR T8 that would require a study to determine the appropriate level of bicycle parking provision at each station in consultation with the relevant Councils.

The IAC recommended that the location and number of entries to the Parkville station be reviewed. A station entry has been proposed in the Concept Design at the western end of the station box on the south side of Grattan Street outside the Victorian Comprehensive Cancer Centre (VCCC). The IAC noted that this choice of location was governed by a constraint thought to be imposed by the location of the ambulance bays on the northern side of Grattan Street. Melbourne Health questioned the location of the station entry outside the VCCC and presented future plans for the Royal Melbourne Hospital which included relocating the ambulance bays within a 10-year time frame. Given evidence that pedestrian demand is greatest on the northern side of Grattan Street,

outside the Royal Melbourne Hospital, the IAC concluded that an alternate entry on the northern side of Grattan Street, outside the Royal Melbourne Hospital should be explored. I agree.

Similarly, the IAC discussed the station entry at the eastern end of the station box, which is currently on the north side of Grattan Street. The University of Melbourne campus straddles Grattan Street in equal proportions, and hence consideration should be given to providing an additional southern entry. The design of the station entry in this location should also reflect its role in serving the local community beyond the university campus.

Resolution of a final design that integrates with the strategic plans of the precinct's institutions and is supported by adequate analysis of future pedestrian movement in this area is required. Refer to Section 5.9 for further discussion on the pedestrian environment and amendments to the Urban Design Strategy for the Parkville Precinct.

Within the Western Portal Precinct, the IAC noted the lack of facilities at South Kensington Station and the concern that the Project may constrain the ability for a future increase in the width of the train platform or the implementation of other improvements. I note that even with the adoption of Option B for the Western Portal (refer Section 5.1), which was preferred by most submitters from the locality, there will still be adverse residual impacts on amenity near construction works. Therefore, maintaining provision for future upgrades of South Kensington Station in the detailed design for the Project will be helpful in retaining flexibility to provide local benefits which may help to offset the residual impacts of the construction phase.

The IAC recommended an additional EPR to address the specific parking issues at the Westin Hotel at the legacy stage. This is discussed further within Section 5.5.

Conclusion

My assessment of the environmental effects of the Project is that:

- The Project will enable a significant increase in the capacity of the metropolitan rail network and provide multimodal connections.
- The effects of the works on the broader transport network are capable of being adequately managed, both during and after the construction of the project.
- During the construction phase of the Project the TTWG and the TMPs will be very important in mitigating and managing transport impacts. I agree with the observations of the IAC and I recommend that:
 - T1 be amended to require the TTWG to incorporate stakeholder responses in providing feedback on the TMPs (this will strengthen the transparency and ability for stakeholders to contribute to the TMPs required under T2);
 - the TTWG be independently chaired and operate under terms of reference, consistent with that established for the other project committees discussed in Section 4.4 (it would be helpful to cross-reference T1 to SC3, which requires the preparation of a Community and Stakeholder Engagement Plan, to ensure that all communications and engagement planning is consistent and complementary); and
 - the contents of T2 be rearranged and split into several discrete EPRs to provide greater clarity.
- For the construction phase:
 - the location of the Linlithgow Avenue temporary access shaft should be further investigated so that siting minimises effects on transport, landscape and heritage perspectives; and
 - at the Western Portal Precinct, Option B should be adopted as the preferred option because it reduces the impact of the Project from a transport, social and business perspective.
- For the legacy phase:
 - There should be further investigation into the optimal number and location of entries at the Parkville Station;

- T8 should be amended to require MMRA to further investigate future pedestrian movement and conditions at the Parkville Precinct to optimise station entry number, locations and surrounding foot path environment (it would be helpful to cross reference T8 to the relevant section of the Urban Design Strategy); and
- I support the need for an EPR which is specific to the Westin Hotel, however, relevant issues are not restricted to transport effects alone, and I therefore conclude that the Westin Hotel be addressed under the Business EPRs rather than the Transport EPRs.

I am satisfied that the transport effects of the Project can be adequately managed under the proposed management framework and the EPRs as considered by the IAC with the amendments and refinements discussed above.

5.3 Land use and planning

Evaluation objective – *To manage effects on land use and land use change in the area of the Project.*

Land use and planning impacts are addressed in Chapter 9 and Technical Appendix E of the EES and in Chapter 6 of the IAC Report. EPRs LU1 to LU4 deal with matters relating to land use and planning; three of those EPRs have been the subject of IAC recommendations.

Assessment context

The Project will traverse four planning schemes, being the Maribyrnong, Melbourne, Port Phillip and Stonnington Planning Schemes. The EES identified the impacts of the Project on land use and planning as follows:

- changes to existing land use, in that in and around the proposed stations and along the alignment the Project is likely to result in a change of land use activities – though broadly speaking the anticipated change in land use activities are likely to be consistent with underlying objectives of the Project and the broader strategic planning framework;
- loss of open space – where open space might be used either during construction or to permanently house infrastructure; and
- built form constraints above ground/demolition – including the removal of buildings to facilitate construction, including some heritage buildings, and constraints upon demolition and replacement buildings along the alignment of the tunnels to ensure that the infrastructure will be adequately protected.

Having regard to the evaluation objectives, the land use, public open space and built form implications of the project will produce long term gains for the community, but not without potentially significant impacts upon existing landowners, businesses and communities in the vicinity of Project works. The social and business impacts of the Project are dealt with separately in Sections 5.4 and 5.5.

Discussion

The evaluation objective in relation to character, form and function of the public realm identifies the importance of Melbourne’s inner suburbs, CBD and public spaces. In large part the Project involves works under ground, leaving unchanged the fabric of the city which most contributes to its character. EPRs have been developed that seek to ensure that important heritage buildings are protected from the effect of vibration during construction.

Prospective changes to built form will be confined to those areas necessary for the construction of stations and related infrastructure. I am satisfied that the impact on the character of the areas affected will be localised. I acknowledge that the Project is one that will shape the city into the future. Such a project cannot be expected to leave the existing form or function of the city entirely unchanged. I am satisfied that the extent of change to existing valued character elements contemplated by the Project has been minimised, and that the EPRs encourage further refinement as detailed project design work occurs. I am concerned to ensure that any replacement buildings will complement the character of their surrounds and be responsive to the evolving urban context.

There are locations where permanent change will arise owing to property acquisitions necessary to facilitate the Project. I am satisfied that the extent of acquisition is no greater than necessary to facilitate the Project, and that there is appropriate legislation in place to compensate those land owners whose land is required for the Project

In some instances, the proposed works will result in the temporary loss of the use of open space and other public realm spaces such as boulevards and roads, some of which are of high heritage value. The construction program for the Project will likely see these affected areas closed off during different stages of construction. This in turn will result in the loss of access for users of these public areas.

Proposed Land Use EPR LU1 and LU4 set out the mitigation standards for the construction and operation of the Project. Specifically, EPR LU1 is aimed at limiting the possibility of a permanent change of use within existing public open spaces. This is achieved by seeking to minimise the footprint of construction sites and permanent infrastructure on public land, impacts on existing public open spaces and the users of the recreational facilities. The IAC supported EPR LU1 which introduced requirements to avoid, to the extent practicable, temporary and permanent loss of public open space, to maximise the reinstatement potential and to minimise impacts to existing public open spaces and recreation facilities.

The EES stated that in most cases, where land is to be temporarily occupied during the construction phase, the primary land use would not change in the longer term and therefore the impact to land uses would be minimal. Land temporarily occupied during construction is to be generally reinstated following the completion of works. I consider this matter to be particularly significant for the Osborne Street area which is identified as a location for temporary works. In relation to the Osborne Street Reserve, the IAC notes the *compound nature of loss of visual amenity that is likely to significantly impact upon the liveability of the area* and recommended the early installation of landscape treatments and other urban design, landscape and visual treatments to ameliorate these effects along the length of the Osborne Street Reserve. I agree with this approach. This matter will be adequately addressed through EPR LV1 and discussed in Section 5.9.

There will be instances throughout the life of the Project where temporary occupation/acquisition of private land will occur. EPR LU1 is to the effect that, both during construction and after completion, the Project should seek to minimise the impacts to existing residential areas of new above ground infrastructure where practicable.

Some areas that are needed in the construction phase may no longer be required once the Project is operational. Consideration should be given to providing an opportunity to affected landowners to voluntarily resume occupation (and ownership) of their land after construction. This is a matter which should be investigated, having regard to the legislative framework created by the MTPFA and the LACA.

During construction, the effects on the social fabric of the community in the area of the Project, including with regard to land use changes, community cohesion, business functionality and access to services and facilities, have the potential to be significant. Construction activity will be especially evident in the CBD North and South, Domain, Parkville and the Eastern Portal precincts where existing uses and activities will be affected in varying degrees intermittently and over extended periods of time. Impact mitigation measures can only seek to minimise, as best as possible, the impact of temporary disruption to existing uses and the consequences of permanent changes.

In addition to ensuring that construction activities are carried out in a manner which seeks to mitigate and manage the physical impacts of construction during that period, I also consider that good communication and consultation before and during the construction phase will help to ameliorate the impacts of construction. I have in other parts of this Assessment accepted and further enhanced the suggestions made by the IAC in that respect.

The IAC also recommended minor changes to EPR LU1 to ensure that the performance requirements are specific to ensure a level of prescription for MMRA to deliver the project in a satisfactory manner. The IAC also made changes to EPR LU4 to ensure that design strategies for the Project are done in consultation with the relevant councils and land managers. I agree with those suggested changes as an appropriate tool.

The EES highlighted that early works will be required prior to the commencement of the main construction works. This includes early works associated with existing utility services and includes modifications and relocations of electrical and telecommunication conduits, gas, water, stormwater and sewage pipeline infrastructure and tram works. All early works are located within the proposed project boundary and are subject to assessment as part of the EES. Understandably, concerns about the nature and extent of early works were raised during the process, and commented upon by the IAC. I agree with the recommendation of the IAC that the incorporated document should be amended to require further consultation on the Early Works Plan(s). In this Project, communication will be an important way to mitigate and manage the risk of impacts to land owners during the Early Works construction process.

The Project runs through a highly-urbanised part of the city on an alignment that positions the stations in locations where redevelopment can be expected to follow. These matters were thoroughly discussed in Chapter 9 of the EES and at pages 83 – 88 of the IAC Report. The EES recognises that the built form impacts of the Project are generally acceptable as most of the works will be located underground, within road reserves or in locations that have avoided acquisition of private land and impacts on places of heritage significance. Where land is to be permanently acquired for the Project, the EES notes that the future use and development of land will be consistent with the provisions of the relevant planning schemes applying to each site.

The EES acknowledges the precincts where over-site development is likely to occur (Arden, CBD North and CBD South precincts). However, the EES does not detail or provide options on how this is to be carried out. During the IAC Hearing, the MMRA noted that future built form associated with over site development of the CBD station precincts will be subject to a separate process from the EES. For the Arden Station precinct, EPR LU3 requires that the design and construction of the station adopts an integrated planning approach via consultation with the relevant agencies including the City of Melbourne, Victoria Planning Authority and Melbourne Water. To ensure that any future over-site development contemplated for the station sites is of high architectural and design quality, the Urban Design and Architectural Advice Panel (UDAAP) chaired by the Office of the Victorian Government Architect, should be consulted as part of EPR LU3 and consistent with my Assessment at Section 5.9.

The future development of land above (or in the vicinity of) the alignment of the Project may be affected by the need to protect the infrastructure. A planning control like the proposed DDO is an appropriate way of balancing the competing objectives.

Conclusion

The EES identified that the main impacts of the Project on existing land uses are associated with acquisition and/or occupation of properties for construction purposes. The proposed EPRs, subject to the changes proposed by the IAC and as recommended through my Assessment, set appropriate standards for land use and planning impacts of the project. I note that these EPRs must function in conjunction with Social and Community EPRs at SC3 and SC9, Landscape and Visual EPR at LV1 and Transport EPRs at T2, T3 and T4, to provide an integrated mitigation process. My changes to the EPRs and those recommended by the IAC, while not substantial, will better articulate the performance requirements for the Project in relation to land use and planning impacts.

It is my Assessment that:

- An additional performance measure under LU1 is included to require the investigation of returning properties to landowners.

- The land use EPRs are appropriate to minimise the impact of the Project on the use of public land.
- To ensure that any future over-site development contemplated for the station sites is of high architectural and design quality, it is my Assessment that a response to meet EPR LU3 should be referred to the UDAAP.
- It is important to manage any potential impacts upon the tunnel infrastructure, and the application of a planning control like the DDO which has been proposed (including a map which shows the extent of the area concerned) is an appropriate tool to manage this issue in the future.

5.4 Social and community

Evaluation objective – *To manage effects on the social fabric of the community in the area of the Project in particular with regard to community cohesion and access to services and facilities, especially during the construction phase.*

Social and community impacts are addressed in Chapter 10 and Technical Appendix F of the EES. The IAC addresses these aspects in Chapter 7 of its report. Eight EPRs were tabled at the IAC Hearing by MMRA to deal with social and community matters. The IAC recommended an additional EPR and amendments to three of the MMRA’s proposed EPRs.

Assessment context

The Project alignment crosses four local government areas — City of Melbourne, Port Phillip, Stonnington and Maribyrnong — and eight suburbs — West Footscray, Kensington, North Melbourne, Parkville, Carlton, Melbourne, South Melbourne and South Yarra. Each of these suburbs will experience localised impacts during construction, and there are several common social issues across the Project alignment, which include:

- residential property acquisition;
- amenity impacts (which may last for extended periods in some locations) resulting from noise, vibration, dust and visual changes;
- reduction or loss of access to residences or community facilities due to traffic management, as well as construction worker traffic, and parking reductions;
- uncertainty about construction activities inhibiting household decision making; and
- displacement of open space and recreational users.

During operation, social impacts from the Project are expected to be limited. The Project will result in built form changes from above ground infrastructure such as noise walls, stations and changes to the streetscape. On the other side of the ledger, the EES identifies social benefits associated with the Project for Melbourne and the wider Victorian community: increasing the capacity of Melbourne’s transport system and providing enhanced access to key health, education and business precincts such as Parkville, CBD North and South and Domain.

Discussion

MMRA has adopted changes to the Project both during the IAC process and since the conclusion of the hearings. These changes have reduced the social impact of the Project in several locations, for example eliminating Fawkner Park from Project works (see Section 5.1). The selected Project design option at the Western Portal (Option B) now requires less property acquisition resulting in a positive outcome to the Kensington community. However, there are some social impacts that cannot be fully avoided and remain a high risk. These include remaining residential acquisition at the Western Portal (see Section 5.18) and tree removal along St Kilda Road, Royal Parade and Grattan Street (see Sections 5.8 and 5.15), among others.

The prolonged construction period will generate considerable disruption and inconvenience on those residing in the project construction area. Hence, it is important to acknowledge the stress and anxiety that many submitters feel about the impacts of the Project, due to the uncertainty of the design or extent of impacts, such as noise and vibration. The relocation management framework in

EPR SC2 should consider stress and anxiety as social impacts of the Project. This would involve a responsive process that will cater for special needs and vulnerable residents who may be impacted by direct acquisition or temporary occupation.

Indirect social impacts may arise as the result of other project impacts during construction relating to amenity or traffic management, as mentioned above. The extent to which social impacts may be felt will result from the effectiveness of EPRs implemented to manage environmental impacts. Social and community impacts are proposed to be managed through implementation of plans such as the Community and Stakeholder Engagement Management Plan. The key EPR for managing community engagement is SC3, which sets overarching engagement standards for the Project which should work in conjunction with the requirements of other EPRs. SC3 requires consultation to be conducted at a precinct level, to capture issues that are of concern to the community at specific locations.

MMRA tabled draft *Residential Impact Mitigation Guidelines for Construction* and *Business Support Guidelines for Construction* that it proposes to use as a consistent basis for management of residual impacts during the construction period which might otherwise be unacceptable. In Section 4.3.4 of this Assessment I have concluded that both guideline documents should be finalised in consultation with DELWP and should be included in the final EMF to be submitted for my approval. Moreover, the IAC recommended that the incorporated document should provide for consultation on the Early Works Plans and Development Plans, which will contain levels of detail not previously available to the community.

The IAC has recommended consultation requirements in the EPRs, where appropriate, for specific stakeholder groups or to manage particular issues. This includes the Parkville Precinct Reference Group where there are likely to be impacts on education and health establishments. Under the IAC's recommended EPR NV19, the Project would establish this group with an independent chair and terms of reference drafted to reflect Technical Note 44.

I note MMRA's selected construction method for Domain Station is a concern for submitter residents and would generate significant transport disruptions and alterations to the heritage value of the area (see Sections 5.2 and 5.8). A Domain /South Yarra Precinct Reference Group with an independent chair and similar terms of reference as the Parkville group would provide utility to consult with stakeholders and manage issues at this location.

Another key issue of concern to submitters is the loss of open space at locations such as Domain Parklands, University Square, City Square and Federation Square. The proposed land use EPRs listed in Appendix A, particularly LU1, aim to minimise the footprint of construction sites and permanent infrastructure on public land, impacts on existing public open spaces and the users of the recreational facilities (see Section 5.3 for further discussion). There are also several other locations that would require temporary occupation including South Yarra Siding Reserve, JJ Holland Park in Precinct 2 and Edmund Herring Memorial Oval in Precinct 7. Locations such as Edmund Herring Memorial Oval that are currently used by sporting groups would be managed under EPR LU1 and SC3 which requires consultation with recreation, sporting and community groups and facilities. In addition, EPR SC6 requires a relocation strategy to be developed for those displaced sporting groups with adequate notification to minimise the impacts associated with relocation.

Conclusion

The construction of a project of this scale will generate a great deal of disturbance to the day to day lives of people who operate, live and work in the Project area. Many of those most affected by the construction of the Project can be expected to enjoy the benefit of access to new public transport infrastructure in close proximity – but the interim impact of construction activity cannot be ignored.

Meaningful communication is key to ensuring residents and other stakeholders impacted by the Project are informed of Project works that may impact upon them, and that they are given the opportunity to provide input into key project milestones as required. The EPRs presented in

Appendix A establish a strong stakeholder engagement framework and lines of communication between the proponent and those affected to mitigate project impacts on the community.

The IAC recommended amending EPR SC3 in response to submitter requests for a database to be established allowing interested parties to register their interest on the Project and receive notification prior to planned construction activities and project progress. **It is my Assessment** that the IAC's recommended refinements to SC3 are generally supported with the following amendments.

- The approach towards public comment on the Early Works Plan should be consistent with that proposed for Development Plans in the incorporated document. That is, it should be made available for on a clearly identifiable project website and notification of its release should be published in newspapers. I support the IAC's recommendation that the review is available for a period of 15 business days.
- Amend SC3 to require MMRA to notify people on the register of the public release of the Early Works Plan and Development Plan and provide details on opportunities to comment.
- Due to the significance associated with EPR SC3 and the Community and Stakeholder Engagement Management Plan, SC3 must be amended to require that this Plan is approved by the Minister for Planning.

It is my Assessment that NV19 should be renumbered as a SC EPR and incorporates the general scope of the group into the EPR as outlined in Technical Note 44.

I note and support the IAC's inclusion of a new EPR SC9 which provides for notification for parties impacted during early works.

5.5 Business

Evaluation objective – *To manage effects on business in the area of the project, including with regard to business functionality and access to services, facilities, supplies and markets, especially during the construction phase.*

Business impacts are addressed in Chapter 11 and Technical Appendix G of the EES. The IAC addresses these aspects in Chapter 8 of its report. EPRs B1 to B5 deal with matters relating to business.

Assessment context

The EES outlines a number of benefits that the Project will deliver to businesses in close proximity to the five new proposed stations. The benefits will include new retail and commercial opportunities, urban renewal opportunities particularly for CBD North and South as well as Arden, and increased connectivity and public transport for workers.

Business issues common across the entire route alignment are:

- business acquisition and relocation; and
- business disruption during construction.

The EES estimated that 35 properties used for commercial purposes will need to be acquired across the project alignment, displacing 87 businesses. During the course of the IAC hearing MMRA advised that the number of acquisitions could be reduced by two properties at CBD South. In addition, temporary occupation of land for the construction phase would also displace approximately eight businesses.

The EES characterised business disruption impacts during the construction phase to those businesses not proposed to be acquired as including:

- reduction of pedestrian flows;
- changes to amenity from noise or air quality impacts;

- constrained access for deliveries or pedestrians resulting from construction activities, road closures or reduction in available parking; and
- potential disruption to utilities (such as power) affecting the productivity and output of local businesses.

In addition to the above, the IAC considered key issues for businesses in the project area to include loss of trade due to construction works as well as potential property damage. Businesses may also be affected indirectly by secondary loss of output if part of their business was to supply (or was supplied by) businesses that have been acquired.

Discussion

While the Project benefits will be shared by millions of people including business operators, it is the case here that, as it is for other major projects of this type, the adverse impacts will be most acutely felt by a much smaller number of businesses. However, the extent of compulsory acquisition to facilitate the Project is not unusual for a Project of this scale. The impacts on businesses acquired will be managed under the relevant legislation (see Section 5.18).

A challenge for the Project is to mitigate and manage the impact of the proposed works upon existing businesses which will not be acquired. Indirect business impacts may arise as the result of other Project impacts during construction (e.g. changes in traffic management). One of the major disruptors to businesses during the construction phase will be associated with relocating utility services for the Project. A number of submitters were concerned that disruptions would impact upon businesses operations. As a result, the IAC recommended amending EPR SC3 to incorporate reference to replacement power or other utilities if necessary during a disruption. I support this approach, in conjunction with the notification requirements to advise potentially impacted business operators of proposed works. The extent to which business impacts may be felt is related to the effectiveness of other EPRs implemented to manage environmental impacts.

The EPRs proposed by the MMRA and refined during the course of the hearing seek to mitigate and manage the risks posed to businesses. They include a requirement to prepare a Business Disruption Plan (EPR B2). The MMRA has also proposed Business Support Guidelines for Construction (Business Support Guidelines for Construction) (EPR B2). MMRA advised the IAC that it considers that *the key strategy to managing disruption to businesses will be to minimise the extent of disruption to businesses in the first place* (MMRA Closing Submission, p. 64). The plans and guidelines required by the EPRs are intended to achieve that result. I support this approach. The responsibility rests with the MMRA and its contractors to respond to affected businesses (that will likely bear prolonged impacts during construction of the Project) as sensitively and as generously as circumstances allow. It is proposed that the Business Disruption Plan (as per EPR B1) would be approved by the Independent Reviewer for the PPP contract and the Business Support Guidelines for Construction should be elevated from its currently proposed status in the EPR B2 to form part of the Environmental Management Framework.

The Business Disruption Plan will communicate key project milestones and advance notice of any construction activities that may have the potential to disrupt the operations of businesses. In addition, the Business Disruption Plan must outline support measures in accordance with the Business Support Guidelines for Construction. The IAC heard from submitters seeking a compensation process for businesses who suffer impacts from the construction phase of the Project. A compensation process has not been proposed in the EPRs for businesses that would be affected by the Project but who are not acquired for the purpose of the Project. However, the IAC recommended amending EPR B2, regarding the Business Disruption Plan, to include a requirement for MMRA where requested, to assist businesses with the preparation of a business plan to create financial records to demonstrate Project impacts. This information may be used to establish a basis for businesses to access support measures and assistance through the Business Support Guidelines for Construction process. The types of support measures are outlined in the draft V2 Business

Support Guidelines for Construction, and include dedicated engagement tools such as case management to identify tailored support measures suited for business needs.

The IAC recommended some changes to the wording of the Business Support Guidelines for Construction. I agree with those changes, but consider that the Business Support Guidelines for Construction could be further refined. These changes highlight the importance of applying the Business Support Guidelines for Construction to all businesses affected by the Project works, regardless of their proximity to those works.

The Business Support Guidelines for Construction also includes a requirement for monitoring the effectiveness of support measures offered to businesses. Timely and informed communication is key to ensuring businesses affected by the Project are informed of relevant project works, and that they are given the appropriate support measures to manage potential impacts.

I endorse the MMRA's proposed inclusion of a complaints and dispute resolution mechanism in the Business Support Guidelines for Construction that draws on best practice advice from the Victorian Ombudsman and Public Transport Ombudsman and Australian Standard AS ISO 1002-2014 Guidelines for Complaint Management in Organisations. Allowing for a fair and timely disputes resolution process is crucial to managing undue stress on business operators affected by the Project.

Conclusion

Whilst the adverse impacts of the Project on business are almost all associated with the construction phase, the benefits of the Project, once construction is complete, will transform the business mix of some areas of Melbourne and provide new business opportunities in and around the five proposed stations.

The extent of compulsory acquisition to facilitate the Project is not unusual for a project of this scale and will be managed through the defined statutory process.

A compensation process has not been proposed in the EPRs for businesses that would be affected by the Project but are not acquired for the purpose of the Project. However, it is my assessment that the proposed business EPRs as amended in Appendix A, coupled with my additional recommendations, provide an appropriate management response to minimise adverse impacts on businesses. Furthermore, the inclusion of EM4, as suggested by the IAC to "develop and implement a process for the recording, management and resolution of complaints from affected stakeholders consistent with Australian Standard AS/NZS 10002: 2014" will allow for a fair and timely dispute resolution process in the case where a business may not be satisfied with the support provided by MMRA.

I support the IAC recommended change to the scope of the Business Support Guidelines for Construction and I have further strengthened these guidelines through incorporation into the EMF. I highlight the importance of applying the Business Support Guidelines for Construction to all businesses affected by project works, regardless of their proximity to the Project. The Business Support Guidelines for Construction would outline appropriate support measures for businesses that might experience indirect Project impacts.

While I generally support the IAC's recommended amendment to EPR B2, **it is my Assessment** that the Business Support Guidelines for Construction should incorporate the process through which businesses may be offered assistance with the preparation of Business Plans to create financial baselines. In addition, the effectiveness of reducing impacts on businesses will be strengthened through a suite of business EPRs (B1-B5) and a combination of other EPRs to mitigate noise, vibration, transport and air quality impacts on businesses.

In addition, I support the IAC's recommended EPR T10. However, it should be moved from a transport EPR into the business EPRs.

5.6 Air quality

Evaluation objective – *To minimise adverse air quality effects on the amenity of nearby residents and local communities, as far as practicable, especially during the construction phase.*

Air quality impacts are addressed in Chapter 12 and Technical Appendix H of the EES and in Chapter 9 of the IAC Report. EPRs AQ1, AQ2 and AQ3 deal with matters relating to air quality. AQ1 has been the subject of IAC amendments.

Assessment context

The primary air quality impact pathway for the Project arises through the potential generation of dust during the construction phase. Matters requiring consideration include the physical, chemical and biological characteristics of dust – particle size and possible dust components such as respirable crystalline silica, asbestos or fungal spores.

Discussion

Melbourne Metro will carry electric trains, and therefore will not require works approval for ventilation stacks. Ventilation systems maintaining a flow of air in and out of the underground infrastructure for the benefit of users will be comparable to the ventilation systems required for any indoor space such as a large building and will not impact on air quality. Therefore, this assessment of air quality issues focuses on the construction phase of the Project.

During construction, some two million cubic metres of spoil will be removed from station boxes, tunnels and other Project excavations. Most of the material will be brought to the surface at the Arden and Domain worksites, but a significant proportion will also be removed directly from the other station locations and from the portals. Spoil management is addressed in Section 5.13, but as spoil will be the principal potential source of air quality impacts during the construction phase it is addressed here in that context.

Dust emissions resulting from spoil management may be of concern as very fine particles (<10 µg in diameter, referred to as PM₁₀), can be inhaled to penetrate deep into the human respiratory system with adverse health implications. If dust originates from contaminated spoil, there may also be concerns about the health implications of contaminants, especially asbestos. Naturally occurring components of dust such as respirable crystalline silica can also have human health implications, as can fungal (*Aspergillus*) spores for particularly vulnerable people. Coarse dust entrained in the air can impact on amenity, for instance through reduced visibility and through soiling of exposed surfaces.

Exhaust emissions from petrol/diesel engines during construction may also be of concern, especially if used for protracted periods and close to sensitive receptors.

Air quality is regulated under the EP Act and State Environment Protection Policies (SEPPs). The relevant SEPPs are SEPP (Ambient Air Quality) and SEPP (Air Quality Management). The SEPPs set standards for key contaminants (“indicators”). There are also standards specified under the National Environment Protection Measure (NEPM), which are generally reflected in SEPP standards. The relevant standards are reflected in the version of the EPRs recommended by the IAC.

Under SEPP (Air Quality Management) the Environment Protection Authority (EPA) has issued a *Protocol for Environmental Management: Mining and Extractive Industries* (PEM). Although the Project is not a mining or extractive industry project as such, the PEM was recognised in evidence presented to the IAC as having relevance, given the Project’s potential for area source dust generation and the proximity of sensitive receptors to several of the Project’s works sites. However, local background air quality data have not been collected for input to modelling, as recommended by the PEM for a Level 1 assessment.

Conclusion

It is my Assessment that the management approach to dust as an air quality issue, as proposed in the air quality EPRs recommended by the IAC, is appropriate, subject to the qualifications below. The dust mitigation measures commonly used for large scale construction sites should be equally effective for this Project, provided they are implemented in a planned, strategic manner, having regard for the likely extent of exposed soil surfaces (including spoil stockpiles), the likely duration of potential dust-generating activities at each works site and the proximity of sensitive receivers.

With respect to very fine dust particles I note that, on occasion, ambient air quality can exceed statutory standards due to regional events such as dust storms or fires. In such circumstances, it would be prudent for spoil handling activities to be suspended until it is feasible for standards to be observed, rather than the Project adding (however slightly) to an already undesirable situation. This issue, and the ambient air quality monitoring that would be required for such situations to be managed, should be addressed through the dust management and monitoring plan(s) referred to in EPR AQ1.

I note that the IAC has recommended several changes to EPR AQ1, but has not proposed changing EPRs AQ2 or AQ3, which make general reference to relevant EPA guidelines and SEPPs. The intent of the IAC's proposed changes to AQ1 is supported, although some improvements to the wording will be required.

5.7 Noise and vibration

Evaluation objective – *To minimise adverse noise or vibration effects on the amenity and other relevant interests of nearby residents and other stakeholders, as far as practicable, especially during the construction phase.*

Noise and vibration impacts are addressed in Chapter 13 and Technical Appendix I of the EES and in Chapter 10 of the IAC Report. EPRs NV1 to NV20 deal with matters relating to noise and vibration. Sixteen of those EPRs have been the subject of IAC recommended amendments.

Assessment context

Noise can be one of the most pervasive impacts resulting from large-scale construction projects in built-up areas. Exposure to excessive noise can cause sleep disturbance and anxiety, leading to a range of mental health issues, and can impact on learning in certain circumstances, as well as depriving exposed people of a reasonable level of amenity. Given the surroundings in which the Project is proposed to be developed, and the likely duration of works at discrete sites, noise from construction is a key issue for the Project.

Noise and vibration may be perceived by receptors near the Melbourne Metro alignment as (singly or in combination):

- airborne noise (noise propagated through the air from source to receiver);
- groundborne vibration (vibration propagated through the ground and into building structures); or
- groundborne noise (noise heard within a building that is generated by vibration propagated through the ground and into the structure).

Groundborne noise and vibration are particularly relevant to this Project because so much of the construction and operation will take place underground. Moreover, construction noise is of concern in the context of relevant EPA guidelines, especially with respect to:

- quantitative day-time noise levels;
- accountability for defining “unavoidable” works at night which may generate noise; and
- the occurrence of a wide range of non-residential premises adjacent to the alignment which may be sensitive to noise in one way or another, but which are not recognised as requiring protection from noise in the same way as residential premises under relevant EPA guidelines.

Discussion

The EPA's recommended approach to controlling noise arising from construction work in Victoria is set out in EPA publication 1254 *Noise Control Guidelines* (the 1254 Guidelines). The 1254 Guidelines do not carry the statutory weight of a SEPP, and do not set mandatory noise limits, recognising that construction noise is both highly variable in nature and intensity, and essentially transitory. The 1254 Guidelines give priority to evening and night periods and, like *SEPP (Control of Noise from Commerce, Industry and Trade) No. N-1* (SEPP N-1), focus on protection of residential amenity.

I note that construction activity is proposed to continue at some of the Project works sites for periods of some years, unlike the smaller scale construction projects to which the 1254 Guidelines would more often be applied. I note also that residential land uses occur near the Project, with residential receptors explicitly recognised as sensitive to noise in SEPP N-1 and the 1254 Guidelines. However, there are also a range of other noise-sensitive land uses including hospitals, hotels and motels, secondary and tertiary education establishments, places of worship, performing arts venues and public open space. Several of those land uses may be more susceptible to noise during standard daytime working hours, when the 1254 Guidelines do not provide a quantitative standard for construction noise.

The 1254 Guidelines set a night-time (10pm-7am Monday to Saturday and all day Sunday) construction noise standard of "inaudible within a habitable room of any residential premises", but noise from "unavoidable" works may be exempted from meeting that standard. Inaudible levels may vary in the context of varying background noise levels in different places and different construction characteristics of receptor premises. Unavoidable works are described by example rather than defined, creating potential uncertainty about what might be considered unavoidable.

The IAC heard evidence and submissions about a number of policy and guideline documents from other jurisdictions which might provide for better outcomes (in one way or another) than the 1254 Guidelines. The IAC's attention was drawn to the New South Wales *Interim Construction Noise Guidelines* (ICNG) and the Transport for NSW *Construction Noise Strategy*. Although the noise experts met in conclave as directed by the IAC, they did not reach consensus on a number of key questions, including the respective merits of the 1254 Guidelines, ICNG or the Construction Noise Strategy.

The Victorian Government's *Passenger Rail Infrastructure Noise Policy* (PRINP) sets policy principles of integrated early consideration, balancing objectives and best fit solutions, which may be considered to have been addressed in this case through the exposure of the Project to the EES process. The PRINP also establishes investigation thresholds for operational noise from passenger trains, which is exempt from SEPP N-1. If the quantitative investigation thresholds are predicted to be exceeded, consideration of mitigation measures is triggered, but the thresholds do not serve as noise limits, nor do they assume that noise from operational passenger trains should be inaudible. The PRINP investigation thresholds for redevelopment of existing passenger rail infrastructure (Attachment 2, Table C) are adopted in NV15, with respect to exposure of sensitive premises near the tunnel portals.

Vibration and potentially resultant groundborne noise emanating from either construction or operations at locations where the tunnels pass at relatively shallow depths beneath residential areas are possible environmental effects of the project that require consideration. The PRINP does not define noise in terms that distinguish between airborne and groundborne noise. Importantly, it is not feasible to measure groundborne noise effectively outside a building, as required to determine whether PRINP investigation thresholds are triggered. In the absence of guidance in the PRINP for measuring noise internally or for setting internal noise investigation thresholds, NV17 sets guideline targets, for a range of receptor premises for the operations phase.

SEPP N-1 noise limits will apply to fixed operational plant, such as ventilation systems. SEPP N-1 provides for mandatory noise limits to be calculated on a site-specific basis for adjacent land uses.

There are no Victorian statutory or guideline limits for vibration generated through construction or rail operations activities. The IAC was referred to a number of international standards for guidance to protect the integrity of structures, including heritage buildings, and residential amenity. Vibration may be emitted either continuously (such as from drilling) or intermittently (such as from blasting or pile driving), and could also be generated during operations by the movement of trains through the tunnels. However, the noise standards to which the IAC was referred generally do not deal separately with groundborne noise resulting from vibration.

Vibration induced from both construction and operation of the Project in locations where scientific and medical equipment is present (e.g. Parkville and CBD North precincts) requires special attention because the performance of such equipment may be affected by vibration at much lower levels than would be of concern for the structural integrity of buildings or for protecting human amenity. Adequate protection from noise for bio-resources associated with research is a separate but related issue.

The fact that 20 noise and vibration EPRs are included in MMRA's Version 4 EPR list reflects the complexity of the issue in the context of the Project. MMRA tabled draft *Residential Impact Mitigation Guidelines for Construction* (Residential Impact Mitigation Guidelines) as Attachment A to Technical Note 43 (IAC document D021.18). The Residential Impact Mitigation Guidelines is intended to be used to establish principles for managing residual impacts of construction activity – that is, the impacts which will be experienced after the implementation of practicable best practice mitigation measures at the source. The effect of the Residential Impact Mitigation Guidelines would be to trigger actions aimed at reducing the severity with which those residual impacts would be experienced by receptors, for example by providing forewarning and briefings, making offers of respite and in more serious situations making offers of architectural treatments to residences or of temporary alternative accommodation. Evidence and submissions were generally supportive of having Residential Impact Mitigation Guidelines, but were critical of aspects of the draft, especially the noise levels which would trigger a management response.

I note that the Residential Impact Mitigation Guidelines triggers include levels for the night-time period, as defined under the 1254 Guidelines. As noted above, the 1254 Guidelines adopt a night-time construction noise standard of inaudible, which would not trigger any action under the draft Residential Impact Mitigation Guidelines. In practice, then, the Residential Impact Mitigation Guidelines would apply at night only in the case of unavoidable works.

Trucks hauling excavation spoil are a potential noise source for the Project. The EES noted that spoil movements would occur 24 hours per day, using preferred truck routes, but use of local roads would be restricted to *normal working hours (when possible)*. Trucks will also be used to deliver equipment and construction components to works sites. Large trucks can generate annoying noise in several situations, including idling at waiting locations, operation of reversing beepers when manoeuvring, acceleration from stationary starts or up gradients and use of compression release or other noisy auxiliary braking technology. I note that EPR T2 as recommended by the IAC provides for TMPs to include *potential routes for construction vehicles ... recognising sensitive receptors and avoiding the use of local streets where practicable*.

Conclusion

It is my Assessment that the IAC's recommendations for the refinement of the MMRA's Version 4 EPRs for noise and vibration are generally appropriate and I support them, subject to specific variations (set out below) which should be addressed in any final EPRs submitted for approval. Some further refinement of wording of the EPRs (for greater consistency and clarity) will also be required.

References to specific noise and vibration EPRs below refer to the IAC's recommended EPRs (Appendix F of the IAC Report), except where the IAC has not recommended a change to a particular

EPR, in which case the reference is Version 4, tabled by MMRA on the final day of the IAC public hearing.

NV1 requires construction noise to be managed in accordance with the 1254 Guidelines, and a project-specific construction noise and vibration management plan (CNVMP) to be prepared as required by NV20. The IAC's recommended NV20 specifies management levels for daytime noise to complement the evening and night-time levels in the 1254 Guidelines, reinforcing the need for the CNVMP to address noise during the daytime as well as during the evening and night hours.

It is my Assessment that NV1 should be reworded to clarify that, while the CNVMP should be seen as complementing the 1254 Guidelines, it may not prescribe standards or practices which are less rigorous than recommended by the 1254 Guidelines. This will ensure that the 1254 Guidelines will set a minimum standard, but the CNVMP may provide for better outcomes for neighbours and other stakeholders.

NV3 requires the appointment of a consultant to model noise and vibration and to prepare a construction noise and vibration assessment report, which is to inform the CNVMP required by NV20. I support this requirement in principle, although the reference to the ICNG needs clarification. Although NV3 is aligned with construction, the modelling should be done at the detailed design stage to inform the CNVMP and design options for management of noise most usefully. NV3 also requires the consultant to undertake noise and vibration monitoring. This is a separate function, requiring different technical skills from modelling, and would be undertaken during rather than before the construction phase. Whilst I support it in principle, it should form a separate EPR.

It would be helpful to cross-reference NV4 to SC3, which requires the preparation of a community and stakeholder engagement plan, to ensure that all communications and engagement planning is consistent and complementary.

In NV5 the IAC's recommended additional noise target levels for classrooms, places of worship, active and passive recreation areas and community centres are supported, but some rewording is needed to clarify the intent of the reference to the ICNG and the meaning of the notes.

New Notes 6 and 4 to NV6 refer to pre-construction surveys, which by definition must be done before construction commences, so the timing column should also refer to the detailed design phase. Some additional refinement may be needed for the EPR to reflect accurately the IAC's conclusions on pre-construction surveys.

The IAC's proposed amendments to NV10, which deals with target levels for vibration-sensitive equipment, may require rewording for clarification, especially with respect to the Notes. I note that close and responsive engagement with the institutions operating such equipment will be central to making appropriate decisions about management of potential construction-related vibration and detailed design measures to be put in place for the mitigation of potential impacts during railway operations. I consider that implementation of appropriate design measures to reduce vibration from railway operations will be more effective than setting binding targets through EPRs. Because some equipment is sensitive to vibration at much lower levels than those proposed to protect structural integrity (NV6) and human comfort (NV9), specially tailored approaches may be needed. Similar principles might apply to meeting the objectives of NV13, which relates to potential impacts of noise on bio-resources and sensitive research.

I do not believe it is necessary or appropriate to set mandatory noise limits for railway operations. The *Transport (Compliance and Miscellaneous) Act 1983* establishes an underlying policy position that railway operations are not subject to the laws of nuisance or regulated by the EP Act. The proper approach is to deal with the matter at the design stage.

I support the IAC's finding that target levels may be exceeded only after consultation with affected organisations.

NV11 sets guideline internal noise levels to protect amenity from groundborne noise during the construction phase. While the levels may be generally appropriate, they make no allowance for existing background levels. This aspect should be discussed with the EPA before NV11 is finalised. Consultation with educational institutions regarding groundborne noise levels should also occur, as referred to by the IAC.

Like NV3, NV14 should be split to distinguish clearly between the requirements for modelling and for collecting of measurement (monitoring) data. The wording should be revised to clarify that NV14 applies to the operations phase.

It is my Assessment that the internal noise targets which the IAC has recommended in NV17, measured as specified in Note 3, should be applied to noise sensitive premises which may be affected by groundborne noise resulting from train operations in the tunnels. All reasonably practicable design measures that may be needed should be taken to mitigate potential groundborne noise impacts so that the internal noise thresholds in NV17 are not triggered. While I agree with the sentiment of the IAC's recommendation in reference to NV17, as explained above I think that the concern is better addressed in design, rather than setting a mandatory operational limit.

I note that the EES predicted that available mitigation measures would enable the groundborne noise target levels to be met at all modelled noise-sensitive premises (Appendix I, Section E5 and Figures E36-E48). **It is my Assessment** that NV17 should be modified to require that modelling of the detailed design be undertaken to demonstrate that the selected mitigation measures will achieve the noise targets tabulated in NV17 and the modelling results published in a readily understood format, such as EES Appendix I, Figures E36-E48.

Like NV17, NV18 should be reframed to set targets, not limits, and to require modelling of the detailed design to confirm that the vibration dose values tabulated in NV18 can be met.

I support NV19 to establish a Parkville Precinct Reference Group (PPRG) in the context of the proposed arrangements for the PPRG presented in TN44 (IAC D021.19). Members of the PPRG will be able to raise issues of interest or concern for discussion under an independent Chairperson, and share information relevant to the Project or its potential effects. However, there is no need for the PPRG to be restricted to noise and vibration issues, in the light of the range of other issues which might arise for stakeholders in the precinct. Thus, **it is my Assessment** that the PPRG should be established under the social and community EPRs rather than the noise and vibration EPRs.

NV20 establishes detailed requirements for the CNVMP foreshadowed in NV1. While I support the concept of the CNVMP and the IAC's proposed requirements for its content and coverage, **it is my Assessment** that the formatting and wording requires careful revision in consultation with DELWP and EPA to achieve clarity and consistency. I note and support the inclusion of quantitative daytime airborne noise targets in NV20, derived from the NSW ICNG, to complement the evening and night-time noise management levels derived from the 1254 Guidelines.

It is my Assessment that unavoidable work (in the sense of noisy unavoidable night-time work, as provided for in the 1254 Guidelines) should be separated into two categories:

- planned unavoidable work, which may not commence without the prior approval of the Independent Environmental Auditor (IEA); and
- emergency unavoidable work, for which the proponent must provide a rationale to the satisfaction of the IEA within a specified (short) period.

In deciding whether to grant approval, the IEA should have regard both to the explanation of "unavoidable works" in the 1254 Guidelines and to the criteria for "Construction outside the recommended standard hours" in the ICNG (section 2.3).

I note that the IAC has recommended specific changes to the draft Residential Impact Mitigation Guidelines, intended effectively to lower the trigger levels at which mitigation measures would be offered to receptors. **It is my Assessment** that the IAC's recommendations in this respect are adequate, while noting that there may be room for further strengthening, both in the setting of trigger levels especially for night-time, and in setting temporal thresholds, given the likely duration of construction works at some sites.

I note that while certain EPRs (such as NV20 and SC2) refer to the Residential Impact Mitigation Guidelines, there is no explicit requirement in the approvals framework considered by the IAC for Residential Impact Mitigation Guidelines to be finalised, adopted or implemented. **It is my Assessment** that MMRA should finalise the Residential Impact Mitigation Guidelines in consultation with DELWP, and the final Residential Impact Mitigation Guidelines should be included in the EMF to be submitted for my approval under the incorporated document before the commencement of project works other than preparatory works.

It is my Assessment that the proposed requirement for potential routes for construction vehicles to be specified in TMPs as provided for in the IAC's recommended T2 is appropriate both in terms of location and level of specification. Consideration of "potential routes" should have regard to identifying suitable queuing or waiting areas for trucks and to aspects of possible routes that might affect generation of noise, such as gradients and other factors necessitating frequent changes of gear (such as roundabouts and traffic lights).

It is my Assessment that most of the adverse noise and vibration environmental effects expected to arise from the Project can be mitigated and managed within acceptable levels, in the context of relevant legislation, policy and appropriate standards. For the more severe, temporary effects that might arise from time to time during the construction phase, there are management measures which can be implemented to alleviate receptors' experience. The EPRs recommended by the IAC and modified in accordance with my specific recommendations above provide a suitable basis for enabling the efficient implementation of the Project while protecting the reasonable interests of stakeholders who may be affected.

5.8 Aboriginal and historic cultural heritage

Evaluation objective – *To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values.*

Historic and Aboriginal cultural heritage impacts are addressed in Chapter 14 and 15 Technical Appendices J and K of the EES, respectively. The IAC address both of these aspects in Chapter 11 of its report. There is one EPR relating to Aboriginal cultural heritage, and 23 EPRs addressing historic cultural heritage.

5.8.1 Aboriginal cultural heritage

Assessment context

Impacts on Aboriginal cultural heritage values as a result of the Project may include disturbance or removal of Aboriginal archaeological sites, objects or remains, or damage to intangible cultural heritage values during construction.

The EES outlines the results of a search of the Victorian Aboriginal Heritage Register (VAHR) with a search radius around the Project of 2km (geographic region, refer to Appendix C of EES Technical Appendix K). Within the search radius 27 Aboriginal Places were found including:

- 11 Aboriginal historical places;
- 10 artefact scatters;
- 6 scarred trees; and
- 2 Aboriginal ancestral remains (burial) sites.

One Aboriginal Place is located within the Project area itself, at CBD North station Precinct 5, Little La Trobe Street (VAHR 7822-0013). This Aboriginal Place comprises a single silcrete artefact found during historical excavation. EES investigations of project sites of Aboriginal cultural heritage sensitivity identified a previously unknown Aboriginal Place at South Yarra Siding Reserve (Eastern Portal).

Discussion

The EES assessed that the overall residual risk to Aboriginal cultural heritage from the project would be low to very low following implementation of EPR AH1 (which would require compliance with the approved CHMP discussed below).

Following public exhibition of the EES, MMRA undertook further investigations of deposits that contained Aboriginal artefacts identified during initial investigations for the CHMP at South Yarra Siding Reserve. This Aboriginal Place (VAHR 7822-4006) has been registered on the Victorian Aboriginal Heritage Register as an artefact scatter. A total of 71 artefacts made from a diverse range of raw materials (silcrete, quartzite, quartz, chert, basalt and siltstone) were recovered. The artefacts (with the exception of one) were found below disturbance layers related to modern development within the park. The place is buried beneath modern fill, and is outside the expected works footprint so it is likely that construction activities will not further impact the place. Should works be required to impact VAHR 7822-4006 detailed archaeological salvage excavations would be necessary to be completed in accordance with the CHMP. This will ensure the site is recorded appropriately and that cultural material is curated properly. The CHMP could also provide for salvaged artefacts from the Aboriginal Place to be displayed as part of public art or community engagement projects for the Project in consultation with Traditional Owners.

In order to reduce the impacts identified in the EES on known and unknown Aboriginal cultural heritage values, MMRA has prepared a draft CHMP in accordance with AH Act requirements to assess the potential adverse cultural heritage effects of the Project and to specify appropriate mitigation measures. The draft CHMP was not exhibited with the EES. CHMPs may contain cultural sensitive information and unlike other statutory approvals are not generally made public.

I understand that the CHMP will provide a list of recommendations and contingencies that will provide for the protection, recording and salvage (if required) of any Aboriginal cultural material identified during works. As there is currently no designated Registered Aboriginal Party (RAP) for the Project area, responsibility for approval of the CHMP lies with the Secretary of the Department of Premier and Cabinet in accordance with the AH Act.

The IAC was satisfied that the EES assessment of potential effects on Aboriginal cultural heritage in the Project area provides an adequate basis for the decision-making process under the AH Act. The IAC noted that the Project cannot proceed without an approved CHMP.

5.8.2 Historic cultural heritage

Assessment context

The project area features a large number of historic heritage places, including buildings, trees, landscapes and archaeological sites. These include heritage places listed in the Victorian Heritage Register (VHR) and Victorian Heritage Inventory (VHI) under the Heritage Act and in the Heritage Overlay (HO) in the planning schemes. A full list of these heritage places can be found in Technical Appendix J of the EES. Historic cultural heritage may be impacted during construction activities where works are proposed at or close to surface level, as well as from construction vibration and ground settlement. In addition, heritage structures such as the South African Soldiers' Memorial will be dismantled and stored during construction.

A number of historic cultural heritage risks were assigned very high and high initial risk ratings in the EES. Following the implementation of appropriate mitigation measures in response to Project-specific EPRs, the majority of risks are expected to be reduced to medium or low. The exception to this is where the Project is likely to generate some adverse impacts to sites relating to demolition

and loss of significant fabric or presentation that could not be fully avoided or mitigated. As a result, a number of risks remain at a high residual risk rating, including:

- the South African Soldiers Memorial (VHR H1374 and HO12 in the Port Phillip Planning Scheme) due to its relocation to allow for the construction of a station entry for Domain station;
- demolition of one graded residence within the Kensington Precinct (HO9 in the Melbourne Planning Scheme);
- demolition of five graded buildings in the Flinders Gate Precinct (HO505 in the Melbourne Planning Scheme) including the Port Phillip Arcade; and
- impacts through tree removal and other works on heritage landscapes including Royal Parade (VHR H2198 and HO977 in the Melbourne Planning Scheme), the Domain Parklands (VHR H2304 and HO398 in the Melbourne Planning Scheme), and St Kilda Road.

I note that the Victoria Barracks site (Commonwealth Heritage List under the EPBC Act) is not expected to be impacted by the Project (EPR NV2). However, there is a requirement for a vibration survey and monitoring to be carried out at this site. This requirement is to fulfil the obligation required by the Commonwealth Minister for the Environment for the Project to remain “not a controlled action” under the EPBC Act.

Discussion

The IAC was satisfied that the EES assessment, including EPRs, provides an adequate basis for protecting historic heritage places at risk from the Project. The IAC recommended a number of amendments to the CH EPRs such as the use of the term “heritage places” to ensure consistency with the Burra Charter. I support the IAC’s recommended changes to the EPRs in order to ensure the protection of places with recognised heritage significance which may include those on the VHR, VHI or heritage overlay.

The IAC recommended some changes to the EPRs proposed by the MMRA which include requirements for a heritage impact statement and pre-construction condition surveys for heritage places identified as vulnerable to construction vibration. For all places included in the VHR or the VHI (for archaeological sites), approval will be required under the Heritage Act where any changes to these places are proposed. The requirements in the EPRs are intended to be in addition to the need for approval under the Heritage Act.

The proposed temporary relocation of heritage structures or places such as the South African Soldiers’ Memorial and Burke and Wills Monument would be managed in accordance with EPRs CH4 and/or CH5. Targeted EPRs have been developed for particular structures in order to protect their heritage significance during relocation as well as during reinstatement. The Burke and Wills Monument would be protected during relocation through EPR CH15, and the South African Soldiers’ Memorial as per CH19. The EPRs proposed for the management of heritage structures or places requiring relocation with the IAC’s recommended amendments are appropriate to avoid, manage or mitigate impacts of the Project for these places.

The IAC also recommended rejecting the Queen Victoria Gardens location for the temporary access shaft at Linlithgow Avenue that would potentially avoid or minimise the risk of heritage impacts (refer to Section 5.1).

In addition, the IAC observed that it was *not satisfied that Precinct 7 could be constructed in the manner the EES indicated whilst managing significant heritage impacts in St Kilda Road* (page 177, of IAC report).

The IAC found that outstanding issues associated with reinstatement of the traditional boulevard layout and the physical and function layout of this precinct remain unresolved. In addition, many submitters including Domain residents presented concerns at the hearings with the impacts of construction and proposed station entrances.

I note that as St Kilda Road is included in the VHR, any works that impact on it will still require the approval of the Executive Director of Heritage Victoria, under Part 4 of the Heritage Act. As such, a heritage permit would be required to remove any trees or alter the existing road layout. Any approval granted by the Executive Director would include conditions appropriate to mitigate or manage impacts on heritage places. The IAC also recommended the insertion of EPR CH20 to further address this issue, which I support.

With a Project of this scale and significance to Melbourne changes to the physical layout of the city may be necessary, as is the case for the St Kilda Road boulevard. However due to the heritage significance of St Kilda Road, care will need to be taken to ensure that the overall significance of the boulevard is not compromised even if there are some necessary changes to its existing physical arrangement. If the impacts upon heritage significance of the St Kilda Road boulevard can be further minimised by an alteration to the location of the proposed Domain Station, this should be given careful consideration.

Conclusion

The overall residual risk to Aboriginal cultural heritage from the Project is likely to be very low following implementation of the relevant EPR. The effects on any Aboriginal cultural heritage can be appropriately managed through the consideration and approval of the Cultural Heritage Management Plan under the Aboriginal Heritage Act.

There are a large number of historic heritage places across the Project area, including buildings, trees, landscapes and archaeological sites. In some places the Project will have an impact on these places (e.g. the removal of trees, or the demolition of buildings in a heritage overlay). In other instances, the Project may have an impact on heritage places if appropriate steps are not taken to protect the heritage place from, for example, the impact of ground vibration in the construction phase upon old buildings. The likely and possible effects of the Project on these Heritage Places can be adequately addressed by the EPRs, and by the statutory framework which exists under the Heritage Act.

In relation to the heritage impacts at Domain the proposed historic heritage EPRs are extensive and have been developed in consultation with local councils and Heritage Victoria. The detailed design phase of the Project will occur in accordance with the relevant EPRs and as guided by Heritage Victoria.

It is my Assessment that the IAC's recommended changes to the cultural heritage EPRs are adequate and I support them, subject to minor variations outlined in Appendix A. The implementation of these EPRs in addition to the existing statutory process under the Heritage Act would provide a suitable framework for protecting heritage places at risk from the Project including the management of heritage impacts at Domain.

5.9 Urban design, landscape and visual

Evaluation objective –*To protect and enhance the character, form and function of the public realm and buildings within and adjacent to the Project alignment, and particularly in the vicinity of Project surface structures, having regard to the existing and evolving urban context, and to avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.*

Assessment context

Urban design, landscape and visual effects are addressed in Chapter 16 and Technical Appendices L and M of the EES and in Chapter 12 of the IAC Report. Appendix M is the urban design strategy, which considers the public realm impacts of the Project (outside of the tunnel and ticketed zone) and sets urban design objectives at three levels:

1. principles applicable to large projects generally;
2. project-wide themes relevant to the whole alignment; and
3. precinct specific guidelines focused on individual sites.

As expected with a project of this scale and city-transforming nature, the EES and IAC Report raise significant urban design, landscape and visual impact issues, *viz.*:

- level of prescription versus design flexibility;
- strength of independent design review;
- amelioration of temporary and transitional construction impacts;
- integration of above-ground infrastructure elements;
- relationship to future over-site development; and
- site specific issues related particularly to station entries and precinct improvements.

Discussion

While the Urban Design Strategy is generally well crafted, I believe the Urban Design Strategy could be improved by the introduction of greater clarity. The matters discussed by the IAC reflect the need to update and strengthen aspects of the Urban Design Strategy. In this context, I believe it will be important to ensure that the Urban Design Strategy is effectively reinforced as a control document. There will be an opportunity for further refinement and correction of the Urban Design Strategy before it is finalised, prior to any approval.

The Urban Design Strategy will be the fundamental “measurement tool” for public realm matters, for designers and for assessors, throughout the procurement and approvals process. Therefore, an appropriate level of definition is very important, while avoiding rigid rules which might inhibit valid design options not foreseen in the Concept Design. To this end, it would be helpful if the Urban Design Strategy prioritised the listed Design Guidelines to indicate their relative weight and distinguish those that can and should be tightly defined, from those that allow a more flexible response. Schematic diagrams for each precinct identifying the key issues and opportunities would also provide clarity. This prioritisation and graphics should be considered as part of any review, update or refinement of the Urban Design Strategy.

The IAC states (12.1.4) that *elaborating the responsibilities of the independent reviewer would ensure a more thorough exploration of the design potential of the Project and engender more confidence in the design process.* While the IAC has recommended reinforcement of the Victorian Design Review Panel (VDRP), I understand that the Urban Design and Architectural Advice Panel (UDAAP, chaired by the Office of the Victorian Government Architect) is now the independent design review body, so that group should be referenced in lieu of the VDRP. The EMF requires MMRA to engage an Independent Auditor to oversee contractor compliance with the EPRs throughout the process. In the absence of a public realm specific EPR, it is unclear what formal commitment there is to review points or review group authority, particularly should there be any unresolved difference between MMRA/PPP and the review group. The Urban Design Strategy should therefore outline the program and authority of the UDAAP.

Much of the impact associated with the Project will occur during construction. The IAC recognises the need to reinforce amelioration of construction impacts with added Urban Design Strategy text, as noted in its report Recommendations 9e-i. I also support more protection for urban amenity and vitality, which if damaged may take many years to recover. Urban design is concerned with the activities the setting accommodates as well as its physical form. In this sense, it is valid to go beyond requesting well designed acoustics sheds and hoardings, and positively discriminate in favour of design solutions which limit the scale and duration of construction impacts. It is also important to reinforce place-making activities during construction to improve public experience. I understand the MMRA Creative Strategy will address specific actions in this regard, together with actions which will contribute to the long-term design legacy of the Project. I support the IAC’s recommendation that the Urban Design Strategy should reference MMRA’s Creative Strategy.

The station entries and the tunnel portals are the fundamental elements when it comes to design consideration. Vents and access shafts also have the potential for significant public realm and interface impacts. The IAC recommends strengthening Urban Design Strategy Guideline 3.5c3 to promote the co-location of all above-ground infrastructure elements, rather than just locating them

near to larger structures and plantings. I note that shaft structures in public locations, such as a narrowed A'Beckett Street, will be a permanent impediment to future public space options. Such locations should therefore be considered a last resort, should all other options prove technically unfeasible.

Section 3.4 of the Urban Design Strategy deals with over-site development in a general way, emphasising the need to maximise investment and not limit redevelopment opportunities. It is understood that this aspect is to be left to a future and separate process, but the Urban Design Strategy should provide a relevant and appropriate context for future consideration of over-site developments.

The IAC discussion and expert evidence revealed some inconsistencies or lack of definition in the Urban Design Strategy compared with preferred outcomes in the specific precincts. Before I approve a final Urban Design Strategy, there is scope for it to be updated. In particular, the Urban Design Strategy should respond to any layout changes, such as the selection of Option B for the Western Portal, and to any further progress on structure planning for the Arden Precinct, as well as proposals for a replacement public space for City Square.

I consider that the Urban Design Strategy requires additional strengthening of recommended actions in relation to other precincts, to supplement what the IAC proposed. As noted in section 5.2, the Parkville Station entries, currently located within the University grounds, should enable efficient and legible access from for the broader Parkville community, including the university, the hospitals, nearby tram interchanges and development areas to the south of Grattan Street. This may influence their final location and the appropriate widening of Grattan Street footpaths on the north or south side. The development of the CBD North and South stations will eventually create the context for their respective over-site development opportunities, which have not been considered or assessed through this EES process. This future work should decide the appropriateness of the retention of Council Lane CL0112 at CBD North, rather than mandating this now. Considering the disruption at South Yarra's Eastern Portal, including impacts to the Lovers Walk link, I consider the pedestrian linkage from Toorak Road to South Yarra Siding Reserve should be provided as a Project legacy, not just facilitated as a future option.

Conclusion

It is my Assessment that the Urban Design Strategy, as the formal guidance document for procurement and approvals related to urban design, landscape and visual effects should be updated prior to my final approval to include:

- reference to an Urban Design and Architectural Advice Panel (UDAAP, chaired by the Office of the Victorian Government Architect) as the independent design review body;
- specification of governance mechanisms for the UDAAP to outline its composition, program and authority of its advice (refines IAC Recommendation 9l and 9m);
- reference to a funded place-making strategy (MMRA's Creative Strategy as indicated by the IAC recommendation 9i) to ameliorate construction impacts as well as securing a permanent Project legacy;
- clear direction that above ground infrastructure elements not be located within the public realm unless no alternative is technically feasible (strengthens IAC Recommendation 9d);
- reference to the Over-site Development Urban Context Report (recognising that this remains a separate approval process);
- updating to indicate that the Parkville Station entries should not exclusively address the University of Melbourne and that footpath widening in Grattan Street (north or south) will vary accordingly (strengthens IAC Recommendation 9j and 9k);
- delay the CBD North Station decision on pedestrian flows and the retention of Council Laneway CL00112 until over-site development is considered (refines IAC Recommendation 10);
- require a pedestrian link, and potentially a plaza, from Toorak Road to Siding Reserve as part of the Eastern Portal works (strengthens IAC Recommendation 11).

5.10 Surface water

Evaluation objective – *To protect waterways and waterway function and surface water quality in accordance with statutory objectives and with relevant best practice principles.*

Surface water impacts are addressed in Chapter 17 of the EES (as well as Technical Appendix N) and in Chapter 13 of the IAC Report. EPRs SW1 and SW2 deal with matters relating to surface water and have been the subject of IAC amendments.

Assessment context

The EES process and IAC hearing dealt with the Project's impacts on, and risks posed by, surface water. They found that the Project needs to manage the risk of:

- inundation from overbank floods in the Yarra River (including flows entering via the existing Melbourne Underground Rail Loop), Maribyrnong River and Moonee Ponds Creek;
- inundation from local stormwater runoff; and
- impacts on overland flow paths and floodplain storage.

Discussion

Notable amongst the risks to the Project is the possibility of the tunnels and stations flooding from the overbank flows of very infrequent, very large magnitude floods in the Maribyrnong River, Moonee Ponds Creek or the Yarra River. Some Project precincts are also at risk of flooding from overland stormwater flows in the event of large storms.

Project impacts on surface water include the potential for temporary or permanent construction works to obstruct overland flow paths, overload local drainage systems, or result in a loss of floodplain storage. Unmitigated, any of these outcomes could lead to increased flood risk to property and infrastructure in some locations.

The impact assessment conducted for the EES recommended EPRs and identified possible mitigation measures that, if implemented, would result in no significant residual surface water or water quality impacts associated with the construction and operation of the project.

All that said, the potential range of surface water management issues are not unusual for this type of major urban tunnelling project, and the EPRs that have been prepared are appropriate to the task.

Conclusion

It is my assessment that there are suitable and available mitigation treatments which have been adequately canvassed by the EPRs to address the identified risks.

5.11 Groundwater

Evaluation objective – *To protect groundwater quality and water table levels from changes leading to adverse environmental effects as far as practicable.*

Groundwater impacts are addressed in Chapter 18 and Technical Appendix O of the EES and in Chapter 14 of the IAC Report. There are five groundwater EPRs.

Assessment context

The highest risk of adverse interaction between the Project and groundwater is during construction. At this time the groundwater table may be drawn down to alter hydraulic gradients and flow, causing existing chemical contamination plumes to migrate.

Discussion

The water table varies in depth along the project alignment. Each of the station boxes will extend below the current water table to some extent. Therefore, a period of groundwater drawdown will occur as the station box and portal excavations are dewatered to maintain a dry working

environment until they can be “tanked” (lined and made effectively waterproof). The same will apply to the mined tunnel between CBD North and CBD South Stations.

The rate of groundwater infiltration into excavated voids prior to tanking will be a function of the depth below the water table and the permeability of the ground. The geology is highly variable along the length of the Project alignment, and in places permeability may vary considerably over very short distances. Generally, drawdown is expected to extend up to several hundred metres from the major excavations.

The bored tunnels will be lined and tanked as they are excavated. The proposed design specifications for the bored tunnels call for residual capillary wetting, only, (Haack tightness classification 3) of the tunnel walls by groundwater. Elsewhere, the portal and station box excavations are proposed to be constructed with finished walls that remain substantially dry (Haack tightness classification 2), except for the Parkville Station where the geology is such that capillary wetting will likely occur during the operational phase of the Project.

In some circumstances, it is possible that underground Project infrastructure may be exposed to buoyancy effects resulting from a rising water table. For example, in the vicinity of Domain Station, realignment and replacement of the existing South Yarra Main Sewer with a modern watertight sewer is likely to result in the water table gradually recovering to a higher level. Structural design approaches such as the addition of tension piles (described in TN74) are available to protect Project works from adverse effects of possible increased water table levels.

In terms of groundwater quality, salinity of the groundwater generally increases towards the western end of the alignment and a number of areas of contamination occur along the project alignment. Where contaminated groundwater plumes extend within the drawdown cones of untanked excavation, contaminated groundwater is likely to flow towards the excavation. If contaminated groundwater enters an excavation, disposal to sewer is likely to be the most appropriate option. Such disposal would be subject to trade waste agreements with the sewerage provider.

The risk that implementation of the Project might adversely affect the groundwater management regime in place for the CityLink tunnels also needs to be addressed so that in the end the effects on all the tunnels are minimised as far as practicable.

Conclusion

It is my Assessment that the option of specifying a more rigorous Haack tightness classification for the tunnel section between CBD South and Domain should be considered in the context of the further modelling and groundwater management to be undertaken in fulfilment of the recommended EPRs. Otherwise, **it is my Assessment** that the EPRs, as recommended by the IAC, will set appropriate groundwater standards for design, construction and operation of the Project.

5.12 Ground movement and land stability

Evaluation objective – *To avoid or minimise adverse effects on land stability that might arise directly or indirectly from Project works.*

Ground movement and land stability impacts are addressed in Chapter 19 and Technical Appendix P of the EES and in Chapter 15 of the IAC Report. EPRs GM1 to GM 6 deal with matters relating to ground movement and land stability. .

Assessment context

Project excavations including tunnels, station boxes, portals and widened cuttings might cause movement or instability of adjacent ground. Movement towards project voids might occur due to changed tensions and stresses within the ground. Also, settlement might occur due to dewatering or to placement of new loads on or in the ground, especially where compressible units such as Coode Island Silt occur. Movement is more likely during construction, especially before excavations

are permanently stabilised, lined or tanked. Issues associated with temporary movement in the form of vibration are addressed in Section 5.7.

Discussion

The existing environment, within and adjacent to the Project's footprint, features complex geology and diverse urban form, including large buildings (some of considerable age and heritage significance) and critical service infrastructure. Effective management of risks associated with ground movement will therefore be essential in the course of project planning, design and construction.

The EES maps potential "zones of influence" for the Project. I note that the geotechnical investigations that will inform changes to the zones of influence have continued since the exhibition of the EES. Of particular interest is the deeper weathering detected in the Melbourne Formation in the CBD that may influence ground movement risks and necessitate different design responses (but might also reduce other risks, for example in relation to potential acid formation from excavation spoil). In this area, I note that condition surveys of buildings and assets considered to be at risk from ground movement, as required under proposed EPR GM4, will also be important in addressing possible risks to those buildings and assets from vibration arising from the Project. Comprehensive condition surveys will provide an objective benchmark for assessing any changes in condition that occur during or after Project works. I note that this is very important to many of those who made submissions to the EES.

Any refinement of the zones of influence intended to reflect outcomes of further investigations should also reflect outcomes of engagement with land and asset owners/managers whose interests might be affected by possible changes to the zones. It would be both preferable and prudent to adopt a broader rather than narrower approach to determining the possible extent of the Project's zones of influence.

Regardless of any actual ground movement manifest as a result of the Project, the proposed EPR GM3 establishes a requirement for consultation with "various stakeholders" and with "land and assets owners." The EPR does not set a process in the sense of establishing clear minimum requirements for consultation. However, I note that other proposed EPRs (such as SC3) seek to establish appropriate standards for stakeholder engagement across the Project.

Stakeholders raised site-specific concerns during the IAC Hearing. As an example, the IAC heard expert evidence on behalf of the Westin Hotel, which will be affected by excavations for the CBD South Station, and its integral structural connection to the Regent Theatre. The IAC Report also notes site-specific concerns raised in connection with hospitals and similar buildings in the Parkville precinct, the Graduate Union of the University of Melbourne, residential areas in North Melbourne and properties at other sites, by a number of submitters. The IAC concluded that the approach adopted through the EES process for considering potential impacts to adjacent buildings, civil infrastructure and services is sound. I accept that the concerns about ground movement and stability raised by submitters can be adequately addressed through the principles embraced by the proposed ground movement EPRs.

It will also be necessary to protect Project infrastructure from future ground movement resulting from incompatible development close to the Project alignment, which provides the rationale for the proposed Design and Development Overlay included in Amendment.

Conclusion

The IAC has found that risks associated with potential ground movement are manageable and acceptable. **It is my Assessment** that this conclusion is valid, subject to:

- minor adjustments to the ground movement EPRs (more detail is provided below);
- appropriate ongoing engagement with neighbouring landholders and asset owners;

- further modelling and refinement of zones of influence, especially in regard to eventual detailed design parameters; and
- implementation of selected and targeted mitigation measures.

It may be preferable to reword EPR GM2 to refer to outcomes of investigations reported in the EES and additional investigations completed subsequently, and to assume implementation of appropriate best practice mitigation measures which are practicable in the context of detailed risk assessment. The IAC's other recommended changes to the proposed GM EPRs are supported. The proposed GM EPRs to which the IAC did not recommend changes are also generally supported in the form tabled by MMRA in its closing submissions on the final day of the IAC hearing.

5.13 Contaminated land and spoil management

Evaluation objective – *To identify and prevent potential adverse environmental effects resulting from the disturbance of contaminated or acid-forming material and to manage excavation spoil in accordance with relevant best practice principles.*

Contaminated land and spoil management impacts are addressed in Chapter 20 and Technical Appendix Q of the EES and Chapter 16 of the IAC Report. Related contaminated land matters are also addressed in the context of groundwater (Section 5.11) while dust resulting from spoil management is addressed in the context of air quality (Section 5.6). There are four contaminated land and spoil management EPRs.

Assessment context

Project works are expected to encounter areas of contaminated soil in places where surface sediments, including anthropogenic fill, will be excavated, particularly given the history of land use and development within the project alignment. Some of the likely contaminants such as asbestos may be of concern from an occupational health and safety perspective for the Project's workforce, and will have to be managed in accordance with relevant workplace safety protocols, which would also contribute to protection of the adjacent community. Issues arising from the consideration of contaminated land and spoil management are:

- the occurrence of contaminated soil which may be disturbed by project works;
- management of ground gases and vapours; and
- the management of about two million cubic metres of spoil, some of which may be contaminated or be prone to acid formation in the presence of oxygen.

Discussion

Unlike some infrastructure projects where the requirement for fill can be managed to balance the requirement for excavation, the Project will generate much more spoil than it can use. Spoil will be brought to the surface, mostly at the Arden and Domain station sites, classified and segregated if necessary, stockpiled for management, treated as required and exported to treatment, reuse or disposal sites. The EES states that disposal sites are available that have relevant approvals and capacity to accept contaminated spoil of the types and quantities expected to be generated by the Project. Most of the spoil is expected to be classified as clean fill, which can be re-used off-site. The Spoil Management Strategy required under EPR C1 would identify the sites to which spoil would be taken for treatment, re-use or disposal.

Potential acid forming material to be extracted may include sediments such as Coode Island Silts and rock such as unweathered Melbourne Formation siltstone from deeper excavations. Disturbance of Coode Island Silts could also release ground gases and odours. Potential acid-forming spoil might account for up to about a quarter of the total quantity of project spoil.

It is expected that most if not all of the spoil will be transported from project works sites to treatment, reuse or disposal sites by truck. The spoil truck movements will affect traffic conditions on the routes used relative to their capacity and degree of congestion, noting that the closure or

restriction of some roads in the vicinity of the Project due to works might reduce the capacity of those roads compared to current conditions.

Conclusion

It is my Assessment that at the detailed design phase the EPA waste hierarchy should be applied both to reduce the volume of spoil as far as practicable and to maximise the opportunities for reuse rather than disposal of spoil classified as clean fill.

The regulatory framework for management of contaminated soil and land is established under the EP Act and is administered by the EPA. While the volumes of potentially contaminated or acid-forming spoil are substantial, **it is my Assessment** that the framework is sufficiently robust to ensure that contaminated material is handled appropriately and risks to the community and the environment arising from disturbance, stockpiling and transport of such material can be maintained at an acceptably low level.

5.14 Biodiversity

Evaluation objective – *To avoid or minimise adverse effects on native terrestrial and aquatic flora and fauna, in the context of the Project's components and urban setting.*

Biodiversity impacts are addressed in Chapter 21 and Technical Appendix T of the EES and Chapter 17 of the IAC report. There are three biodiversity EPRs.

Assessment context

The Project traverses an area of central Melbourne from which almost all original vegetation has long been removed. The terrestrial ecological values occurring in the Project land are dominated by planted vegetation comprising mostly exotic species, and by introduced or highly resilient native fauna. A small number of significant species were identified through database resources as likely to occur within the project land.

The project alignment crosses two waterways, Moonee Ponds Creek and the Yarra River. The Project comprises bored tunnels for both waterway crossings and the EES did not identify any intended or expected impacts on either waterway.

Discussion

Removal of planted vegetation, especially mature trees, will reduce the extent and quality of terrestrial fauna habitat in the vicinity of the Project. However, no significant impacts are expected to result to species listed as threatened at national or state levels. I note that the Commonwealth Minister for the Environment decided that the Project is not a controlled action, having had regard to potential impacts on matters of national environmental significance such as species listed as threatened under the EPBC Act.

I note, also, that the IAC recommended minor changes to two of the three FF EPRs. A further improvement to FF3 is needed in relation to fauna that may be occupying hollows in trees identified for removal. Rather than relocate nests or young, for animal welfare, it will be preferable that trees which may be used for breeding by native wildlife should be removed outside the spring breeding season where practicable. FF3 should also provide for inspection by a qualified arborist of large, old, hollow-bearing trees immediately before they are scheduled for removal, to check for fauna occupancy, and any fauna found should be removed to a nearby location immediately outside the impact zone. DELWP should be consulted in determining the final form of words for the FF EPRs.

By traversing the Moonee Ponds Creek and Yarra River corridors via bored, tanked tunnel, the Project will have no interface with aquatic ecological habitat or values, provided potentially contaminated run-off from works sites close to those streams is prevented from entering the waterways.

The AE EPRs provide for aquatic ecology and waterway health primarily in terms of water quality. The EPRs quite rightly address these effects as for any other large construction project and seek appropriate safeguards from sediments or other contaminants entering waterways as a result of construction activities.

Conclusion

It is my Assessment that the potential effects of the Project on aquatic and terrestrial flora and fauna are not likely to be significant and will be managed through the implementation of appropriate mitigation measures to achieve the standards expected to be set through the EMF and its EPRs.

5.15 Arboriculture

Evaluation objective – *To avoid or minimise adverse effects on trees as far as practicable, having regard to heritage, landscape, amenity, biodiversity and other values of trees in the vicinity of Project works.*

Arboriculture impacts are addressed in Chapter 16 and 21 and Technical Appendices R and S of the EES and in Chapter 18 of the IAC Report. EPRs AR1 to AR5 deal with matters relating to arboriculture and some of these EPRs have been the subject of IAC recommended amendments.

Assessment context

The Project area contains some of Melbourne's most noted parks and gardens, treed avenues and urban areas where trees make a significant contribution to landscape character and amenity. The EES suggested that approximately 900 trees will be removed to accommodate construction sites, construction access and temporary services for the Project. Design changes put forward by the MMRA during the IAC Hearing reduced that number, with MMRA advising that the final tree loss is likely to be further reduced through the design process development.

Trees will be removed across all the Project's precincts, with the highest impacts in the Parkville and Domain precincts. Within these precincts, tree removal will occur within the Royal Parade and Grattan Street, Domain Parklands and the Shrine of Remembrance Reserve, St Kilda Road and Albert Reserve. Some of these trees are subject to heritage protection and this is discussed further in Section 5.8.

Impacts from tree removal would be mitigated in part through a tree replacement program, established in consultation with relevant parties.

Discussion

A number of submissions to the IAC emphasised the significant contribution that trees make to the city through their amenity, landscape, ecological and heritage values and mitigation of the urban heat island. Given their value, retaining as many trees as possible is an appropriate goal for the Project, as articulated in EPR AR1. During the IAC Hearing, MMRA submitted modifications to the concept design to retain 69 trees in Fawkner Park and 46 in Domain Parklands.

Mature trees, especially but not only those in avenue and parkland settings, are an intrinsic element of the character of Melbourne. Their contribution to the essence of the city must not be underestimated. As an overarching principle, I endorse the premise of EPR AR1 that maximum possible tree retention be an objective of the Project's detailed design stage.

Unlike many other impacts arising from the construction phase, the impacts resulting from tree removal will not cease as soon as construction is complete. Replacement trees can be planted, but it may take decades for the replacement trees to reach the stature of the mature trees that may have been lost.

The IAC acknowledged specific opportunities to reduce tree removal in the Arden, Eastern Portal and Tunnels Precincts. In the Arden Precinct, the contribution of existing trees to the urban ecology and visual landscape of this urban renewal area was raised by the City of Melbourne, and I support the

IAC's recommendation that the River Red Gum (tree A0072) and as many other trees in the precinct be retained where possible. Similarly, given the combined amenity impacts for residents and the local community in Osborne Street at the Eastern Portal Precinct during construction, I support the retention of as many trees as possible in the Osborne Street Reserve. My findings in relation to landscape treatments proposed for the Osborne Street Reserve are further discussed in Section 5.9.

A number of trees could be impacted by the proposed Linlithgow Avenue temporary access shaft location in the Domain Parklands. The City of Melbourne submitted an alternate site, within Tom's Block adjacent to Linlithgow Avenue, which may have less landscape impact as it would be closer or adjacent to existing hardstand areas. My findings in regards to the Linlithgow access shaft location are further discussed in Section 5.1.

The Arboriculture EPRs will guide the selection of appropriate strategies for tree replacement along avenues as well as within parks and other public spaces. In avenue plantings such as Royal Parade and St Kilda Rd, where like-for-like replanting will occur, MMRA stated that *Block replacement strategies can mitigate against wholesale removal and loss of amenity along an entire avenue by staged replacement of discrete sections within the avenue*. The tree replacement program would be guided by the Cities of Melbourne, Port Phillip and Stonnington urban forest strategies and requirements of relevant conservation management plans for places included on the Victorian Heritage Register (such as St Kilda Road).

The IAC made comment on the use of "advanced" or "super advanced" tree stock, which may be appropriate in some instances to achieve quicker canopy cover, but noting that this needs to be balanced with the potential for problems with long-term survival associated with larger stock. I support the IAC's recommendation that protocols be established to govern the use of advanced and super advanced trees. Similarly, in response to submissions calling for transplanting of existing trees, MMRA's expert arborist Mr Patrick noted that such practices have *low success rates* and *it is preferable to plant new, vigorous, young trees with a secure future contribution than to move store and re-plant mature and over-mature vegetation*. The EES noted that exceptions to this principle include palms such as Canary Island Palm and Cotton Palm which transplant readily and their relocation and reinstatement are addressed in EPR AR1.

While I note the IAC's consideration of the expert evidence it heard regarding the challenges of transplanting mature specimens of other tree species, I consider that all practicable options should be explored to avoid the loss of mature trees, especially where removal is needed only for the construction phase of the Project.

The IAC also made comment on submissions made by the City of Melbourne and City of Port Phillip regarding monetary compensation for tree loss, consistent with their local tree retention and removal policies. The IAC considered that this matter should be left for negotiation between the relevant Councils and the MMRA. I support this approach.

Conclusion

It is my assessment that the likely effects on arboriculture can be adequately managed through the EPRs, as amended, although I acknowledge that there will be residual impacts, particularly in the Parkville, Domain and Eastern Portal Precincts. Those residual impacts should be minimised as far as practicable through prioritising retention of trees at the detailed design stage unless removal is unavoidable.

With regards to the Arden and Eastern Portal Precincts, it is my assessment that the River Red Gum (tree A0072) and as many street trees in the Arden Precinct be retained where possible and as many trees as possible in the Osborne Street Reserve be retained to minimise amenity impacts to residents, as part of landscape treatments for this area.

5.16 Greenhouse gas emissions

Evaluation objective – *To manage direct and indirect emissions of greenhouse gases arising from or in association with the Project in accordance with best practice principles as far as practicable.*

Greenhouse gas emissions (GHG) are addressed in Chapter 22 and Technical Appendix V of the EES and in Chapter 19 of the IAC Report. Two EPRs were offered in MMRA’s Version 4 EPR set with neither the subject of IAC amendments.

Assessment context

The EES and IAC Hearing canvassed sustainability targets, identified the sources and levels of emissions (expected during the construction and the operation of the Project) and proposed best practice GHG abatement techniques.

Discussion

The EES found that the most significant sources of GHG emissions for the Project are associated with the consumption of purchased electricity during construction and operation and embodied carbon in construction materials. However, “best practice GHG abatement measures” were identified for the Concept Design and the EES estimated that these will reduce emissions from the business as usual scenario:

- during construction to 543 kilotonnes of CO₂-e, a reduction of 15%;
- during the first year of operation to 48 kilotonnes of CO₂-e, a reduction of 30%; and
- after 20 years of operation to 38 kilotonnes of CO₂e/annum, a reduction of 35%.

A sustainability management plan (EPR G1) proposed for the project stipulates achievement of Melbourne Metro sustainability targets:

- an excellent certified rating under the Infrastructure Sustainability Council of Australia’s Infrastructure Sustainability Rating Tool; and
- a minimum 5 Star Green Star certified rating under the Green Building Council of Australia’s Design and As Built Rating Tool for all below ground stations.

The Melbourne Metro sustainability targets, presented in the EES, also include energy reduction targets and materials and waste targets that seek to reduce the embedded GHG emissions in materials used.

Conclusion

Having regard to the EES, submissions and the IAC Report, **it is my Assessment** that the recommended EPRs G1 and G2 along with the Melbourne Metro sustainability targets, provide a sufficient basis for achieving best practice GHG abatement over the Project’s construction and operational phases.

5.17 Electromagnetic interference

Evaluation objective – *To ensure potential electro-magnetic interference impacts of the Project are understood and managed.*

Electromagnetic interference was not addressed in the EES but was considered by the IAC in response to submissions. There are two electromagnetic interference EPRs.

Assessment context

There is potential for electro-magnetic emissions from the Project, during both construction and operation phases, to interfere with the functioning of sensitive medical and scientific equipment in hospital and university facilities in the vicinities of the Parkville and CBD North Precincts.

Discussion

Although this matter was not identified in the Scoping Requirements or addressed in the EES, it was raised in submissions and evidence, and considered by the IAC. MMRA responded during the IAC

hearings by proposing new electro-magnetic interference (EMI) EPRs to address stakeholder concerns.

The equipment which may be susceptible to EMI is diverse in nature and is located in various laboratories and other spaces. It is used for a range of purposes including medical diagnostics and scientific research. There are no statutory or guidelines standards for EMI. The susceptibility and mitigation needs of each equipment item would need to be assessed individually in the context of its current location and context and its required performance standard, informed by the manufacturer's specifications.

I accept that the issue of EMI requires effective management to protect the ongoing performance of the equipment, which is costly and in some cases used for long-term continuous research programs. I note that the IAC has recommended some amendments to both EMI EPRs proposed by MMRA.

Conclusion

It is my Assessment that the approach proposed in the EMI EPRs, as recommended by the IAC, and subject to minor editorial refinements, is appropriate and should be adopted and implemented for the Project.

6 CONCLUSION

I have concluded that the Project has the potential to, and in some instances will, have significant effects upon the environment. I have also concluded that, having regard to the nature of the Project, the environmental effects can be adequately mitigated and managed within acceptable parameters in the manner set out in this assessment.

The EES highlights that the benefits of the Project, in terms of both direct improvement in metropolitan rail network capacity, and catalysing the broader transformation of the network to a more modern, efficient system integrated with other transport modes, will contribute to Melbourne's sustainability and liveability for many decades.

The process has also highlighted that the most significant adverse environmental effects occur during the construction phase.

The inner urban nature of the Project corridor means that construction phase environmental effects, in particular in areas such as noise and vibration, transport connectivity, heritage, landscape, social cohesion, business functionality and general amenity will be disruptive, and at times very difficult for those directly affected. The EES process has shown that those effects, while acknowledged as serious issues for the Project, can be addressed in the context of the environmental management framework to be put in place under the proposed planning approval for the Project.

The environment where the Project is to be built is itself the product of an iterative and ongoing urban development process that has continued for almost two centuries. It is not in the dynamic nature of cities to be static or "finished." None of the significant improvements to public infrastructure that are presently enjoyed occurred without inconvenience. The only way for Victorians to capture the benefits that this Project will deliver, is for them to recognise that in the short term there will be disruption. The adverse effects of the Project will occur over a relatively short period compared with the lasting benefits of the Project – those benefits are inseparable from the effects of construction.

At the same time, it is incumbent on government, all Victorians and in particular the MMRA to recognise that while the benefits of the Project will be enjoyed by many, the burdens of the construction phase will be borne by relatively few, and that those burdens will at times result in significant impacts upon the lives of ordinary people, where they live and work, go to school, recreate and travel. The MMRA, as a representative of the State, is entrusted to take a responsive and responsible attitude to managing those effects and protecting the legitimate interests of its neighbours and stakeholders.

6.1 Summary of my response to inquiry recommendations

The IAC has made twelve formal recommendations. Table 2 consolidates my responses to the IAC's formal recommendations and references the relevant section of this Assessment.

The IAC also offered guidance on many matters of detail, primarily in the context of suggested changes to the EPRs (which may be seen as supporting Recommendation 2) as well as further refinement to the incorporated document (which may be seen as supporting Recommendation 1). My responses to those suggestions are presented in the relevant sub-sections of Sections 4 and 5 respectively.

Table 2: Response to inquiry recommendations.

| | Inquiry and Advisory Committee Recommendation | Response and any modifications | Sect. |
|---|--|---|-------------|
| 1 | Adopt Amendment GC45 to the Melbourne, Port Phillip, Stonnington and Maribyrnong Planning Schemes: a) subject to further modifications to Clause 81.01 - Incorporated Document (based on Document 357) as set out in Appendix E | Support with modifications. Further refinements of the Amendment will be made to reflect this Assessment. | 4.3, 5.3 |

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| | b) subject to any further changes to the Planning Scheme maps in the Incorporated Document and/or Schedule 67 to the Design and Development Overlay to reflect any final changes to the Project Land. | | |
| 2 | Adopt the Environmental Management Framework (Document 360), which includes Environmental Performance Requirements (based on Version 4, Document 365), subject to further modifications as set out in Appendix F. | Support with modifications. Detailed commentary about and formal assessment of proposed changes to the EMF and EPRs is provided by environmental topic in Section 5. I have also concluded that the EMF should include Residential Impact Mitigation Guidelines and Business Support Guidelines for Construction. | 5 |
| 3 | Investigate an alternate option to locate the Linlithgow Avenue access shaft on the western Linlithgow Avenue carriageway at the northern end of Tom's Block in Precinct 1. | Support. MMRA should consult with Melbourne City Council to select the most appropriate site for the temporary access shaft if required. | 5.1, 5.2 |
| 4 | Review the location and number of station entries proposed in Precinct 4 - Parkville station. | Supported. | 5.2, 5.9 |
| 5 | Prepare a Planning Practice Note with technical guideline(s) to support development applications for land impacted by Schedule 67 to the Design and Development Overlay. | This approach should be considered further as part of any planning scheme amendment. | 5.3 |
| 6 | Adopt Option B as the preferred option for the location of the Western portal in Precinct 2. | Supported. | 5.1, 5.2, 5.3, 5.4 |
| 7 | Adopt the Business Support Guidelines for Construction referenced in Environmental Performance Requirement B2, and amend as follows: a) Replace paragraph 1 of Clause 2.1 Scope with the words "The Guidelines apply to businesses which may be adversely impacted due to works for the Project." b) Delete the heading on column 1, 'Business type and location', and insert the words "All businesses affected by works for the Project." c) Delete the words 'Café or restaurant in Domain Road, South Yarra' in cell 2 of column 1 and insert the words "Food and beverage premises including cafés, take-away food premises and restaurants in all precincts." d) Delete the words 'Clothing retailer in laneway or street adjacent to a construction site in CBD South/North' in cell 3 of column 1 and insert "Food and beverage premises, retail premises, hairdressers and other shops in CBD South/North." | Supported in principle. MMRA should finalise the Business Support Guidelines for Construction in consultation with DELWP for inclusion in the EMF. | 5.5 |
| 8 | Redraft the Residential Impact Mitigation Guidelines to adopt the trigger levels and thresholds shown in Figure 3 at Chapter 10.4.9 of this report. | Supported in principle. The temporal thresholds should also be reviewed. MMRA should finalise the Residential Impact Mitigation Guidelines in consultation with DELWP for inclusion in the EMF. | 5.4, 5.7 |
| 9 | Amend the Urban Design Strategy as follows: a) Add a fifth point under 2.1 under 'Designs must be sustainable ... They must be:' to read "designed to utilise green infrastructure to support a high standard of amenity." b) Add a new Objective 5 in Section 3.1 to read | Supported in principle. MMRA should finalise the Urban Design Strategy in consultation with DELWP. In particular: • in relation to 9 d) permanent infrastructure should be located | 5.9 |

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|----|---|--|-----|
| | <p>“Recognise and enhance the importance placed on active transport.”</p> <p>c) Add a third dash point in the Design Guidelines at 3.2 at No 11 ‘Incorporate public art in appropriate places’ to read “Integrate site responsive art into the project design, facilitating playful interaction and seating opportunities and located to optimise the legibility of the surrounding area.”</p> <p>d) Add a new dash point under 3.5c3 to read “permanent infrastructure elements of the Project such as station entries, portals, vents and access shafts need to be co-located where possible and incorporate public art and other activities that contribute to the wider public realm.”</p> <p>e) Add a new statement as the first sentence of 3.5 after the heading ‘Design to help manage construction impacts’ to read “The Project requires careful consideration of its impact on the places where the construction activities are located.”</p> <p>f) Add a final dot point to the paragraph commencing ‘Construction processes need to ...’ to read “The potential of these temporary features to achieve broader objectives. These include improving visual amenity, facilitating wider engagement in the planning and design processes, creating a canvas for the creative community and wider community to express and develop their creativity and create design icons that can contribute to the image and identity of the city.”</p> <p>g) Amend the fifth dash point under 3.5c4 to read “Provide opportunities to convey information about the history of the site and the Melbourne Metro ...”</p> <p>h) Add a new dash point under 3.5c4 to read “Recognise the potential of the acoustic sheds, in particular those at CBD North, South and Domain to be designed to contribute to the image and identity of the City.”</p> <p>i) Include the Melbourne Metro Rail Authority Creative Strategy as a Reference Document at 3.5d.</p> <p>j) Replace 4.4.3e.1 to state: “Design the station entries as entrances orientated to the wider Parkville community. Provide a high quality arrival experience, meeting places and direct, legible connections to the north south spine that extends across Grattan Street.”</p> <p>k) Add a new design guideline at 4.4e to read “Maximise the northern footpath width to create space for the station infrastructure and to enhance provision for pedestrian movement.”</p> <p>l) Add a second paragraph to 5.2 ‘Design review and advice’ to read “Supplement the VDRP/Urban Design Reference Group process to ensure it includes experts in sustainability, public art, accessibility, health and place making.”</p> <p>m) Add the following words at the end of the second paragraph in 5.2 to read “... to ensure the PPP contractor had adequately responded to recommendations of the Urban Design Reference Group.”</p> | <p>outside public spaces where practicable;</p> <ul style="list-style-type: none"> • in relation to 9 j), entrances should not be related only to the University of Melbourne; • in relation to 9 k), relate footpath widening to station entrances and pedestrian flows; and • in relation to 9 l) and m), refer to the UDAAP rather than to the Victorian Design Review Panel and the Urban Design Reference Group. | |
| 10 | Amend the Concept Design to retain Council Lane | Noted. The retention of laneway | 5.9 |

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| | CL0112. | CL0112 should be investigated further in the light of alternative layouts. | |
| 11 | Ensure that future plans to reinstate South Yarra Siding Reserve facilitate the opportunity to provide an accessible link to the south side of Toorak Road. | Supported in principle, with encouragement to require a link, and potentially a plaza, from Toorak Road to South Yarra Siding Reserve. | 5.9 |
| 12 | Install temporary landscape treatments with other urban design, landscape and visual treatments along the length of the Osborne Street Reserve during the construction stage to enhance its function as a treed open space area, and to provide better visual and noise protection for the adjacent residents. | Supported. | 5.9 |

HON RICHARD WYNNE MP
Minister for Planning

20/12/2016

APPENDIX A ENVIRONMENTAL PERFORMANCE REQUIREMENTS

MMRA responded to the issues that arose during the IAC Hearing by iteratively amending the EPRs to reflect its position on the performance requirements. The last version of the EPRs provided to the IAC was Version 4. In making its recommendations, the IAC produced a table at Appendix F of its report, where it set out the changes it suggested. Both versions of the EPRs are presented in Table A2 (overleaf), along with further recommendations that I have made, as a result of my Assessment. All versions are presented to provide readers an insight into the evolution of the EPRs over the course of the EES process. EPRs are provided in categories as and indicated by an identifier as listed in Table A1.

Table A1. Environmental performance requirement ID.

| ID | EPR |
|-----------|--|
| EM | Environmental management framework |
| ACH | Aboriginal cultural heritage |
| AE | Aquatic ecology and river health |
| AR | Arboriculture |
| AQ | Air quality |
| B | Business |
| C | Contaminated land and spoil management |
| CH | Cultural heritage (historical) |
| EMI | Electromagnetic interference |
| FF | Flora and Fauna – terrestrial |
| GHG | Greenhouse gas |
| GW | Groundwater |
| GM | Ground movement and land stability |
| LU | Land use and planning |
| NV | Noise and vibration |
| SC | Social and community |
| SW | Surface water |
| T | Transport |