

Suburban Rail Loop East

Minister's Assessment under
Environment Effects Act 1978



Minister for Environment and Climate Action
July 2022



Environment,
Land, Water
and Planning

OFFICIAL

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Abbreviations

BLCAC	Bunurong Land Council Aboriginal Corporation
CHMP	Cultural heritage management plan
dB	Decibels
DELWP	Department of Environment, Land, Water and Planning
EES	Environment effects statement
EMF	Environmental management framework
EMI	Electromagnetic interference
EPA	Environment Protection Authority
EPR	Environmental performance requirement
IAC	Inquiry and advisory committee
MTTY	Move the Train Yard and Heatherton Residents Against Inappropriate Development
PRINP	Passenger Rail Infrastructure Noise Policy
PSA	Planning scheme amendment
RAP	Registered Aboriginal party
SCO	Specific controls overlay
SRL	Suburban Rail Loop
SRLA	Suburban Rail Loop Authority
TBM	Tunnel boring machine
WWCHAC	Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation
UDS	Urban design strategy
UDLP	Urban design and landscape plan

Executive summary

The Suburban Rail Loop (SRL) is a city shaping program of works intended to provide fast, reliable orbital public transport that connects Melbourne's middle suburbs, activity centres and existing radial railway lines. The vision for the SRL is reflected in state planning policy, *Plan Melbourne 2017–2050: Addendum 2019* and underpinned by the *Suburban Rail Loop Act 2021*.

The SRL East project (the project), which is the subject of this assessment, is the first stage of the broader SRL program. Once operational, SRL East will provide substantial benefits for eastern and south-eastern Melbourne in its own right by connecting commercial, medical, research and learning centres across every existing radial railway line from Cheltenham to Box Hill. The project will connect people from a wide range of suburbs along the existing railway lines as well as regional Victoria and will improve liveability and opportunities for communities in all these areas by increasing public transport connectivity. It will also provide the impetus for land use change around the new stations and along the connecting railway lines.

This assessment of the environmental effects of the project is required by the *Environment Effects Act 1978* before any works can proceed. It will be considered by the Minister for the SRL. It will form part of any consideration that the Minister for Planning is required to give to the approval of the project under the *Planning and Environment Act 1987*, and it will inform the making of decisions by other statutory bodies under other legislation.

It is my assessment that the environmental effects of the project have been properly identified in the process leading up to this point, and that they have been carefully considered. The environmental effects largely fall into two main categories: construction effects and operational effects.

In broad terms, most of the operational effects of establishing a new railway have been eliminated by placing most of the infrastructure underground. The above ground operational impacts are largely confined to relatively few locations: the stabling facility and the station locations.

The station locations will experience a considerable amount of change. The change will take a variety of forms. In some areas, a program of land acquisitions necessary to construct the project will alter the existing land tenure, land use and ultimately the physical form of areas surrounding the proposed station locations. That kind of change is inevitable given the size, nature and role of the infrastructure. The changes that this will bring can be described as environmental effects of the proposal and these effects are well enough understood to know that they are capable of management using conventional land use planning tools. It is not possible to know now with a high level of precision how these areas will be developed in their ultimate form, but I am satisfied that the environmental effects of the changes that introducing new stations will generate in the surrounding area will be manageable, and that those changes will, on balance, produce overall benefits to the communities that the stations will serve.

The stabling facility is a significant and necessary piece of infrastructure that needs to be located on a large parcel of land close to the infrastructure it serves. I acknowledge that the introduction of the stabling facility in the location proposed will cause significant changes to the current amenity of the surrounding area and will alter long held plans for the broader regional open space strategy of the Chain of Parks. For the reasons that I set out in this assessment, I acknowledge the impact that this will have on those closest to the facility, but conclude that with the mitigation measures proposed, the environmental effects of the proposed stabling facility can be minimised to an appropriate level.

Some construction activity associated with the project is easily capable of management by deploying straightforward and commonly used construction management techniques. Other construction activity, either because of its duration, extent, or necessary techniques will be significant and will at times have a severe effect on the environment and the amenity of people in surrounding areas. It will be necessary to seek to minimise the effects of these construction impacts to the extent reasonably practicable – having

regard to the nature of the project and the impacts concerned. I conclude that this can be achieved, if the measures recommended in this assessment are adopted and implemented during construction.

The conclusions that I have reached and the recommendations that I have made are informed by the work of the inquiry and advisory committee (IAC) that was appointed by the former Minister for Planning to inquire into, and report on, the environmental effects of the project and the draft planning scheme amendment prepared for the project. I have been greatly assisted in this assessment by the efforts of the IAC, its report, the various parties who made submissions to the IAC and gave evidence in its hearings, and the work of my department.

The project will involve environmental effects, including significant environmental effects, commensurate with a project of this scale and intent. The assessment reveals that those effects can be mitigated to some extent, and that even where the effects of the project cause significant disruption, there remain options to lessen the burden on those most affected.

In general terms, the project has obvious merit. I am fortified in that view by the findings of the IAC, and indeed by the positions advanced by stakeholders who were critical of some aspects of the proponent's environment effects statement or the project. I consider that none of the matters raised could or should result in the project not proceeding, but I do consider that the governance framework for the implementation of the project needs to properly address and mitigate the environmental effects, in the manner set out in the body of this assessment.

1. Introduction

On 11 November 2020, the Suburban Rail Loop Authority (SRLA) submitted a project proposal for the Suburban Rail Loop East (the project) to the former Minister for Planning for consideration under the ‘public works’ provisions of the *Environment Effects Act 1978*. SRLA, the project’s proponent, is a statutory authority whose role is to plan, deliver and manage the operation of the Suburban Rail Loop (SRL) and development associated with the SRL.¹ On 20 December 2020, the former Minister declared the project to be ‘public works’ under section 3(1) of the *Environment Effects Act*. As a result of that declaration, an environment effects statement (EES) was required to be prepared for the project by SRLA.

In the declaration, the procedures and requirements specified that *the EES was to document investigations of the potential environmental effects, including the feasibility and effectiveness of design alternatives and environmental mitigation and management measures. In particular, the EES was to address the potential effects of the project on:*

- *amenity due to changes in visual, noise, vibration, air quality, transport and traffic and land use conditions;*
- *social wellbeing due to residential acquisition, loss of access to public open space and community facilities and disruption to residents;*
- *businesses and economic wellbeing due to acquisition of commercial and industrial land, changes in land use and disruption to business activities; and*
- *disturbance of contaminated soils and groundwater, changes in surface water, geophysical conditions, including with respect to land stability, and the management of spoil.*

In a first for Victoria, the SRLA prepared and exhibited an interactive digital EES online, via a web-based platform. The EES and a draft planning scheme amendment (PSA) were exhibited for public comment from 5 November 2021 to 16 December 2021.

On 14 November 2021, with the consent of the Governor in Council and in accordance with terms of reference dated 7 November 2021, the former Minister for Planning appointed an inquiry and advisory committee (IAC) to inquire into, and report on, the environmental effects of the project and the draft PSA prepared for the project. Planning Panels Victoria, on behalf of the IAC, received 366 submissions. The IAC held a directions hearing on 28 January 2022 and a public hearing for a period of 10 weeks from 28 February 2022 to 5 May 2022, via online technology. The IAC tabled a total of 801 documents. The IAC provided its report to the former Minister on 23 June 2022.

I thank the IAC for its considered report and advice. I also thank everyone who invested their time to make submissions and participate in the public hearing. I have considered all of the matters relevant to the environmental assessment of the project.

1.1 Purpose of this document

This document constitutes my assessment of the environmental effects of the project under the *Environment Effects Act*. This assessment represents the final step in the EES process and provides authoritative advice to decision-makers, the Minister for the SRL, the proponent and all other stakeholders on the likely environmental effects of the project, their acceptability and how the effects are to be addressed in relevant statutory decisions and the delivery of the project.

¹*Suburban Rail Loop Act 2021.*

Works on the project shall not commence until this assessment is considered by the Minister for the SRL, as provided for by section 6(2) of the Environmental Effects Act. Other decision makers for the project's various approvals will also consider my assessment in deliberations.

1.2 Structure of the assessment

The structure of my assessment is as follows:

- Chapter 2 provides a brief description of the project;
- Chapter 3 refers to key relevant Acts;
- Chapter 4 assesses central matters that were a focus for some stakeholders and the IAC;
- Chapter 5 summarises the project's proposed planning controls, environmental management framework (EMF) and other post approval governance arrangements;
- Chapter 6 assesses the environmental effects of the project in relation to the evaluation objectives by environmental discipline;
- Chapter 7 presents my conclusions, including responses to the recommendations of the IAC; and
- Appendix A contains my recommendations about the environmental performance requirements (EPRs).

2. Project description

The SRL will be a 90 kilometre orbital rail line connecting Melbourne's metropolitan train lines from the Frankston Line in the east to the Werribee Line in the west. The SRL will be developed via multiple projects over several decades. SRL East is the first project in the program and will comprise a rapid rail service between Cheltenham and Box Hill, located on Wurundjeri and Bunurong Country (Figure 1). Subject to approvals, works for SRL East are scheduled to commence in late 2022 with operations in 2035. The remaining projects in the SRL program will be subject to separate planning and approval processes in the future.

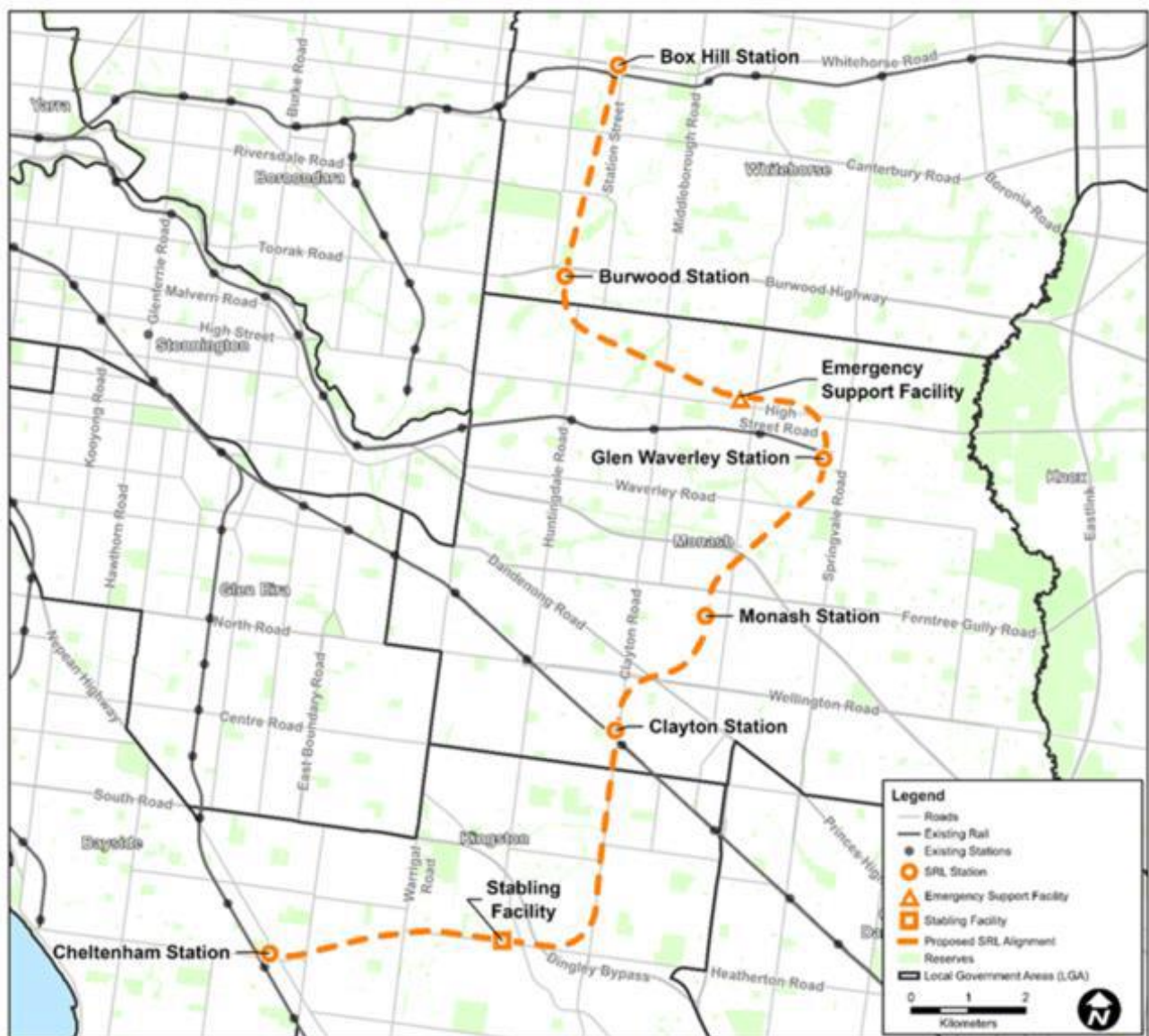


Figure 1: Suburban Rail Loop East (Source: project EES).*

*Note that since the publication of the EES in November 2021, the proposed tunnel alignment has changed slightly under Monash University, south of the Monash SRL station, pursuant to an agreement between SRLA and Monash University. See further the explanation in Section 5.1 below.

The project includes the following key components:

- twin-bore rail tunnels between Cheltenham and Box Hill, via a stabling facility in Heatherton, travelling beneath Clayton, Monash University, Glen Waverley and Burwood and generally following the alignment depicted in Figure 1;
- six new stations constructed at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill, with interchanges to existing railway stations at Cheltenham, Clayton, Glen Waverley and Box Hill;
- stabling, train wash and maintenance facilities, an operational control centre and a power substation at the proposed stabling facility;
- dive structures and rail tunnel portals at either side of the proposed stabling facility;
- a power substation in the vicinity of the proposed Burwood SRL Station; and
- an intervention and ventilation shaft between the proposed Glen Waverley and Burwood SRL Stations.

The public works order and EES scoping requirements define the scope of the EES. Excluded from this scope, except by way of assessing cumulative effects in some instances, are 'initial works' (such as service relocations), the future development of land surrounding the new SRL stations, future stages of SRL and other transport projects. These works will be approved as required through other planning processes.

3. Statutory processes

This section refers to key Acts that are relevant to my assessment and delivery of the project.

3.1 Environment Effects Act

The key steps preceding this assessment under the Environment Effects Act, and how the assessment will be considered, were set out in Chapter 1 above. In addition:

- in September 2020, the former Minister for Planning approved the *Suburban Rail Loop Ministerial Guidelines for Assessment of Environmental Effects* (SRL Ministerial Guidelines) under section 10 of the Environment Effects Act to describe the environmental assessment processes to be adopted for projects in the SRL program;
- draft scoping requirements for the EES were exhibited for public comment for three weeks from 26 March 2021;
- final scoping requirements were published by the former Minister for Planning in July 2021 to specify the range of matters to be addressed in the EES; and
- the Department of Environment, Land, Water and Planning (DELWP) convened a technical reference group², to provide advice on the preparation of the EES.

3.2 Planning and Environment Act

The *Planning and Environment Act 1987* sets out processes for the amendment of Victorian planning schemes. An amendment to the Bayside, Kingston, Monash and Whitehorse planning schemes (the planning schemes) is proposed 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 various provisions of the planning schemes. The draft PSA included in the exhibited EES is discussed in Section 5.2.

3.3 Environment Protection Act

The *Environment Protection Act 2017* came into effect on 1 July 2021. It is supported by the *Environment Protection Regulations 2021*, and other subordinate instruments and subsidiary documents.

The Environment Protection Act represents a fundamental change in approach to environmental regulation in Victoria, a new regulatory context and environmental management expectations. The Environment Protection Act establishes a proactive legislative framework for the protection of human health and the environment from pollution and waste. The Environment Protection Act imposes a number of positive duties, including an overarching 'general environmental duty' (discussed below), as well as duties in relation to pollution incidents, contaminated land and waste.

The Environment Protection Authority (EPA) stated that a development licence is not required for the reference project, under the Environment Protection Act and associated regulations.³

However, irrespective of whether or not any permission is required, the Environment Protection Act and its subordinate instruments and subsidiary documents are still of relevance to the assessment of the project.

² The technical reference group comprised DELWP (Port Phillip Region, Planning and Environment portfolios), First Peoples State Relations, Heritage Victoria, Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation, Bunurong Land Council Aboriginal Corporation, EPA Victoria, Melbourne Water, Department of Health, Department of Transport, Victorian Planning Authority, Bayside City Council, Kingston City Council, Monash City Council and Whitehorse City Council.

³ Tabled document 434 – Attachment – EPA submission to EES, p. 12.

In particular, the general environmental duty is relevant to my assessment of noise and vibration effects (Section 6.2), air quality effects (Section 6.3), social effects (Section 6.8), contaminated land and spoil effects (Section 6.9), surface water effects (Section 6.10), groundwater effects (Section 6.11), and greenhouse gas effects (Section 6.17).

The duties under the Environment Protection Act including the general environmental duty will apply to the project independently of and in addition to the other proposed project controls.⁴

Furthermore, as noted by the EPA, any waste generated as part of the construction and operation of the project, including waste spoil, must be managed in accordance with the Environment Protection Act and Environment Protection Regulations.⁵

Some parties queried whether the EPA's Big Build Compliance Code would apply to the project. The IAC recorded that the EPA's submission was that the Compliance Code was not considered suitable for the project.

General environmental duty

The general environmental duty requires that 'a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable.'⁶ The term 'harm' is defined in the Environment Protection Act to mean:

(1) ...an adverse effect on human health or the environment (of whatever degree or duration) and includes—

(a) an adverse effect on the amenity of a place or premises that unreasonably interferes with or is likely to unreasonably interfere with enjoyment of the place or premises; or

(b) a change to the condition of the environment so as to make it offensive to the senses of human beings; or

(c) anything prescribed to be harm for the purposes of this Act or the regulations.

(2) For the purposes of subsection (1), harm may arise as a result of the cumulative effect of harm arising from an activity combined with harm arising from other activities or factors.

The concept of minimising risks of harm to human health or the environment so far as reasonably practicable requires the person: to eliminate risks of harm; and, if it is not reasonably practicable to eliminate risks of harm, to reduce those risks so far as reasonably practicable.⁷

To determine what is (or was at a particular time) reasonably practicable in relation to minimisation of risks of harm to human health or the environment, regard must be had to the following matters:

(a) the likelihood of those risks eventuating;

(b) the degree of harm that would result if those risks eventuated;

(c) what the person knows, or ought reasonably to know, about the harm or risks of harm and any ways of eliminating or reducing those risks;

(d) the availability and suitability of ways to eliminate or reduce those risks; and

(e) the cost of eliminating or reducing those risks.⁸

3.4 Aboriginal Heritage Act

The *Aboriginal Heritage Act 2006* sets out triggers and requirements for the preparation and approval of cultural heritage management plans (CHMPs). One trigger for a CHMP is when an EES is required under the

⁴ Tabled document 569, p. 2.

⁵ Tabled document 434 – Attachment – EPA submission to EES, p. 12.

⁶ Environment Protection Act, s 25(1).

⁷ Environment Protection Act, s 6(1).

⁸ Environment Protection Act, s 6(2).

Environment Effects Act. The Aboriginal Heritage Act also provides for approval of a CHMP by the relevant registered Aboriginal party (RAP).

The proponent is required to prepare a CHMP in consultation with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC), the RAP for 'the activity area' north of the Monash Freeway. The proponent is also required to prepare a CHMP in consultation with the Bunurong Land Council Aboriginal Corporation (BLCAC), the RAP for the activity area south of Monash Freeway.

3.5 Major Transport Projects Facilitation Act

The *Major Transport Projects Facilitation Act 2009* facilitates the delivery of major transport projects in Victoria. The project was declared a major transport project to which the project delivery provisions of the Major Transport Projects Facilitation Act will apply, by notice published in the Government Gazette on 27 January 2022. The Minister for the SRL was declared Project Minister on 27 January 2022.

3.6 Transport Integration Act

The Environment Effects Act is 'interface legislation' under the *Transport Integration Act 2010*. The Transport Integration Act requires 'interface bodies' (which includes a Minister administering interface legislation) to have regard to transport system objectives when exercising powers and performing functions under any interface legislation, and to have regard to the decision-making principles in making decisions under any interface legislation where these things are likely to have a significant impact on the transport system.

The transport system objectives are set out in division 2 of part 2 of the Transport Integration Act. The decision-making principles are set out in division 3 of part 2 of the Transport Integration Act. The objectives include matters of social and economic inclusion, economic prosperity, environmental sustainability, integration of transport and land use, efficiency co-ordination and reliability, safety and health and wellbeing. The principles include matters of integrated decision-making, triple bottom line assessments, equity, the transport system user perspective, the precautionary principle, stakeholder engagement and community participation and transparency.

I have considered the various matters raised by the transport system objectives and decision-making principles, where relevant, in forming the views set out in this assessment.

3.7 Climate Change Act

The *Climate Change Act 2017* provides the framework for the Victorian Government's climate change response, including emissions reduction and adaptation to the impacts of climate change. The Climate Change Act establishes a long-term target of net zero greenhouse gas emissions by 2050.

Section 20 of the Climate Change Act provides that the Government of Victoria will endeavour to ensure that any decision made by the government and any policy, program or process developed or implemented by the government appropriately takes account of climate change if it is relevant by having regard to the policy objectives and the guiding principles set out in the Climate Change Act.

3.8 Suburban Rail Loop Act

The *Suburban Rail Loop Act 2021* establishes SRLA to plan, deliver and operate, or manage the operation of, the SRL and development associated with the SRL.

3.9 Other Victorian statutory approvals

The project also requires other Victorian statutory approvals:

- a permit for impact to places on the Victorian Heritage Register and/or Victorian Heritage Inventory under the *Heritage Act 2017*;
- the reservation of Crown land under the *Crown Land (Reserves) Act 1978*;
- consent to undertake works on or across a waterway under the *Water Act 1989*;
- a licence to undertake works near a waterway, construct groundwater bores, or extract groundwater, under the *Water Act 1989*;
- an authorisation under section 28A of the *Wildlife Act 1975* if/when fauna habitat is required to be translocated;
- a permit to remove listed flora and/or fauna from public land under the *Flora and Fauna Guarantee Act 1988*; and
- consent to undertake works on, in or under any road under the *Road Management Act 2004*.

4. Environmental assessment – central matters

In making my assessment of the environmental effects of the project and considering the IAC report, I have identified some matters that were a particular focus for some stakeholders and the subject of consideration by the IAC. It is useful to deal with those matters thematically at this point of my assessment and return to them in later parts as required in Chapter 6.

4.1 Benefits and the strategic role of the project

In any subsequent consideration of approval for the project, particularly in the context of the Planning and Environment Act, the benefits flowing from a project of this scale, along with the strategic role of such a project, are an important consideration, to be weighed against the identified impacts of delivering the project.

The SRL is a city shaping program of works to provide fast, reliable orbital public transport that connects Melbourne's middle suburbs, activity centres and existing radial railway lines, including creating capacity in the existing rail network to provide users with more capacity and routes. The vision for this is reflected in State planning policy, *Plan Melbourne 2017–2050: Addendum 2019* (Plan Melbourne) and underpinned by the Suburban Rail Loop Act. The benefits of an orbital rail line for moving around key nodes of Melbourne are profound and will flow on to new opportunities for land use across Melbourne. They will be substantial. The benefits of the project in operation were acknowledged by most submitters.

The SRL East project, which is the subject of this assessment, is the first stage of the broader SRL program and should be assessed in that context. Some have suggested that the assessment of benefits must be quarantined to those benefits that flow only from SRL East, and not the broader SRL program as a whole. I think that quarantining the benefits of the broader program is wrong, but even if it is not, this first stage of the project brings with it city shaping benefits for those parts of Melbourne that it will serve directly.

In addition to being the first, eastern component of SRL, once operational, SRL East will provide substantial benefits for eastern and south-eastern Melbourne in its own right by connecting important existing commercial, medical, research and learning centres, as well as connecting every existing radial railway line from Cheltenham to Box Hill. This will connect people from a wide range of suburbs along the existing railway lines as well as regional Victoria. This will improve liveability for communities in all these areas by increasing public transport. It will also provide the impetus for land use change around the new stations and along the connecting railway lines.

The strategic importance of the broader program as a whole, or SRL East, and the benefits that flow from it were accepted by the IAC and most stakeholders participating in the process.

When a project of this scale is proposed, it is inevitable that in localised areas where the works necessary to build the project occur, there will be significant adverse effects, particularly on the amenity of people in surrounding areas, arising from construction.

In weighing the benefits of the project that flow to very many parts of Melbourne, against those largely localised adverse effects, it is obvious that the scale of the benefits will far exceed the adverse effects, by many orders of magnitude. The project provides key transport infrastructure for the city and the State, for the benefit of generations to come. By contrast, the adverse effects are constituted in a significant part by temporary construction impacts, which will cease when operation commences; and are, properly considered, relatively localised impacts. None of that is to say that there will not be many people who live or work within the project area, nearby to the construction work, or in the surrounding area or who use the project area who will not bear the brunt of the construction activity. The purpose of this assessment is to identify those impacts, and then to seek to minimise them.

I accept, in broad terms, the IAC's finding that the impacts of the project are outweighed by the benefits of SRL East when considered in isolation, or as part of the broader SRL program because those benefits will be profound. I consider they will be profound and will outweigh the impacts identified in this assessment.

4.2 Duration and intensity of construction impacts

Locating the railway line underground is, itself, a significant mitigation in the delivery of a rail project of this kind because it avoids many potential and serious adverse construction impacts on Melbourne's existing urban environment. However, the impacts that flow from the construction of six new underground train stations and a dedicated on-surface stabling facility over seven to ten years cannot be avoided to the same extent. That construction activity will cause significant impacts for people using land on, adjacent to and nearby to these sites.

The degree, type and duration of impacts from construction will play out differently at each site, depending on existing and neighbouring land uses, and the infrastructure in question. Firstly, there will be a loss of existing land uses within the construction footprint due to acquisition. While acquisition itself can be traumatic for residents, businesses and employees, their departure will also affect the surrounding community. Secondly, for those that remain, or who wish to continue to use services in the area, they will experience the effects of construction including disruption, noise, dust, changes to access and changes to car parking. Whether the construction sites are in busy commercial or retail centres (like Glen Waverley) or quiet residential areas (like Burwood), construction impacts will be long lasting and intense. While the effects of construction on amenity will be relatively localised - that is, near the construction sites - I also recognise due to their importance for business and retail, impacts on some of these centres (especially at Glen Waverley and Box Hill). Their importance means that their service catchments are large and so a broader swathe of the community will be inconvenienced as they seek services elsewhere. This will be felt most by those in the community who are less mobile.

I agree with the IAC that the "amenity and other impacts during the project's construction and operation are likely to be pronounced and can only be acceptably mitigated if more comprehensive, prescriptive and targeted mitigation measures are implemented."⁹ Further, I note the "recommendations of the IAC have focussed on the key approval and management controls..."¹⁰ I have carefully considered the IAC's recommended refinements to management measures that will enable mitigation and control of the long term and more intense construction impacts. I am generally supportive of the IAC's recommendations and, in some instances, I have built on them by recommending additional measures, as detailed in Chapter 6.

I acknowledge that construction impacts will be significant at the Glen Waverley SRL Station site. Neighbouring businesses (including shops and restaurants), residents and users of the Glendale Street car parks and the existing Glen Waverley Train Station will suffer intense disruption and inconvenience over extended periods due to project construction activities. Here, along with other measures to minimise amenity and access impacts, the replacement of lost car parking will be critical to managing construction impacts to acceptable levels.

The intense construction impacts associated with the Box Hill SRL Station on the Box Hill Metropolitan Activity Centre, its businesses, its residents and its users will continue for long periods. Like Glen Waverley, the construction site will be within a thriving retail and commuter centre. However, Box Hill will also have significant business and residential acquisitions, and will also lose, for the long term, numerous street and mall-facing (predominantly Asian) restaurants, retail outlets and businesses, which are important elements of this thriving town centre. Access to remaining retail and business services at Box Hill and the existing Box Hill Station and bus interchange from the north will be difficult and the amenity of shops and cafés

⁹ IAC Report 1, p. xii.

¹⁰ IAC Report 1, p. xiii.

adjacent to the construction site will be much reduced. To minimise and manage these effects adequately, prescriptive mitigation measures are needed.

At the northern end of the Box Hill construction site, a number of residences and businesses will be acquired. Nearby residents will experience noise, dust and visual impacts from construction activities, amongst other impacts, with noise likely to be the most disruptive. I support the additional noise control measures proposed by SRLA during the hearing.

In some cases, mitigation measures will not be able to avoid long-term construction impacts and residential and business property owners will suffer severe consequences from the project. I, along with the IAC, consider that those affected by these more severe consequences should be able to voluntarily offer their land for acquisition by the project.

Even with the application of all mitigation measures, there will be an unavoidable impact from the project in these areas.

Overall however, I consider that the mitigation measures reduce the impacts to the extent practicable. The benefits that the infrastructure to be provided will bring, in the longer term, justify these impacts, particularly for a significant activity centre like Box Hill, which in the longer term will thrive as a result of this public transport infrastructure.

4.3 Siting, effects and management of the Heatherton Stabling Facility

The siting, effects and management of the proposed Heatherton Stabling Facility was the subject of careful and thorough consideration by the IAC. Kingston City Council, Move the Train Yard and Heatherton Residents Against Inappropriate Development (collectively referred to as MTTY hereafter), other community organisations and individuals raised numerous significant concerns in relation to the siting, construction and long-term use of the proposed stabling facility on the land known as the Delta landfill site.

I am satisfied that the environmental effects of this aspect of the project have been identified and carefully considered.

In my assessment the construction of the stabling facility on land previously earmarked for park land significantly alters the long-held expectations of the community, and will introduce activities at the edge of an existing residential area that will have a significant effect on the people who live there – both during construction and operation. Having considered the IAC's report and the various submissions made in relation to the stabling facility, I have come to the conclusion that the environmental effects can be adequately mitigated. In forming that view, I recognise that the implementation of mitigation measures for effects caused by the stabling facility require close and careful attention at the approval stage, and a strong governance regime to ensure that the mitigations are effective.

Siting of the stabling facility

The proposed siting of the stabling facility on the Delta landfill site has been contentious. The design development process for the project was set out in the EES. As part of the EES process, ten options were considered for the stabling facility. Three were selected for further review. The basis for selecting the Delta landfill site was explained in the EES (albeit this explanation was the subject of criticism by submitters). Documents tabled in the IAC hearing by SRLA further addressed the question of site selection.¹¹

Kingston City Council opposed the stabling facility on this site in part on the basis that submitting there was a lack of strategic planning assessment, a lack of comparative assessment of options, a lack of consideration of the impact on the 'Chain of Parks' concept and the community, and a lack of appropriate regard to the

¹¹ Including tabled documents 220 and 221.

impact of construction and operational aspects of the project on the community. It submitted that further investigation and comparative analysis of potential sites should be undertaken through a supplementary EES.¹²

MTTY, and many submitters whose interests aligned with MTTY, also opposed the use of this site for the stabling facility and were highly critical of the site selection and assessment process. They sought a further review of alternative site options and provided comprehensive submissions as to why further review should be undertaken. They also sought a supplementary EES.¹³

I am satisfied that the material available to me facilitates a proper assessment of the environmental effects of establishing the stabling facility in this location.

I do not consider that there is a need to investigate alternative sites any further than that undertaken as part of the EES process for the purpose of conducting an assessment of the environmental effects of the project. The material provided in the EES, along with the assessment of the IAC, in addition to all other relevant material, enables me to make an assessment of the project as proposed, without the need for further work including any comparative site assessments.

The IAC undertook a thorough and complete consideration of the environmental effects of the proposed siting of the stabling facility and of the impact of siting the stabling facility on the Delta landfill site. It is appropriate for me to rely upon that analysis.

The IAC considered the location and impacts of the stabling facility¹⁴ and found that impacts could be acceptably managed.¹⁵

The IAC found that the area set aside for the stabling facility did raise significant issues. It recorded the significant concern and distress to the local community and many others who support the green wedge and Chain of Parks concept. In addition to the loss of planned open space, the IAC noted that mitigating the various amenity and other impacts during construction and operation will be challenging, and that the impacts are likely to be pronounced.¹⁶

Notwithstanding those challenges, the IAC supported the use of the site for the stabling facility subject to the matters it identified being suitably addressed and its recommendations being adopted. Only if those matters were not addressed did the IAC consider that the proponent should continue to investigate alternative sites for the stabling facility.¹⁷

The IAC concluded that the loss of the site from the Chain of Parks concept could be effectively mitigated if a replacement area or site is identified and a process for its acquisition is established and implemented. Further, it found that amenity and other impacts need to be addressed through more comprehensive, prescriptive and targeted mitigation measures than those proposed in the EES.¹⁸ The IAC noted that it is open to the state to develop and implement new policy priorities and, in this case, to facilitate a state-significant project – and that in that broad sense, the IAC agreed with the proponent that the location of the stabling facility is consistent with higher order planning policy and was not precluded by the Chain of Parks concept.

¹² See tabled document 756, p. 1.

¹³ See tabled document 777.

¹⁴ IAC Report 1, p. xii.

¹⁵ IAC Report 1, p. xii.

¹⁶ IAC Report 1, p. xi.

¹⁷ IAC Report 1, p. xi.

¹⁸ IAC Report 1, pp. xi, xii.

The IAC ultimately concluded that the significant disbenefits (as mitigated by the measures recommended to be applied) would be outweighed by the significant community benefits of the project.¹⁹

The IAC concluded that whilst the location fails on local social impact grounds, it can be, and has been assessed as being suitable on other grounds. It meets the evaluation objectives and, while impacts will be felt locally, the IAC recognised the significant social benefits from the project will be realised on a much wider geographical scale.²⁰ The IAC was also satisfied that the stabling facility was an appropriate use within a green wedge area.²¹

I agree with the IAC's assessment on all these issues surrounding the stabling facility. In the circumstances, I consider it is appropriate that the project proceed on the basis that the stabling facility will be sited at the Delta landfill site.

I note in passing that the SRLA submitted to the IAC as follows: *As the Stabling Facility, in its proposed specific location, comprises part of the declared public works, it is not open for the Minister to call for a supplementary EES of the environmental effects associated with a stabling facility in any other location.*²²

I do not agree with that submission, but given my findings, I do not need to consider the matter of a supplementary EES any further.

I acknowledge that those who raised concerns about the stabling facility will be disappointed by the findings of the IAC.

There will be significant impacts on the local community and nearby residents from the siting of the stabling facility, and, as has been acknowledged by the IAC and even SRLA's own social impacts expert witness, unlike for other locations, there is not a corresponding benefit to that community and those residents from the project infrastructure, because a station is not proposed on the site.

However, it falls to me to make this assessment about an important component of a project, which is in the interests of the state. A stabling facility for a train line is an incredibly important component. There must be a stabling facility, and it is required to be able to provide for a range of capabilities that are vital to the safe and timely functioning of the train line. It must go somewhere close to the project alignment, and I consider it can be acceptably sited on the Delta landfill site.

As will be apparent in the following sections, I have sought to ensure that all necessary and feasible mitigations of the impact will be put in place and implemented.

The effects of and management for the stabling facility

It is also convenient to deal with a summary here of the effects of and management for the stabling facility, while noting that these issues are also dealt with in the topic specific sections in Chapter 6.

A key adverse impact of the stabling facility is the loss of the significant public open space that was planned for the site, as part of the Chain of Parks. It is notable that the site is quite large and would have been capable of providing for regional active open space. Landfilling has provided a relatively flat and stable surface, in contrast to other sites in the area. The loss of the planned public open space manifests in a number of different ways, but principally this is a social and land use impact. It is also a very significant adverse impact of the project.

To offset this key impact, the IAC concluded that a replacement area of open space needs to be identified and a process for its acquisition implemented.²³ The arrangements proposed by the IAC require a

¹⁹ IAC Report 1, p. 242.

²⁰ IAC Report 1, p. 166.

²¹ IAC Report 1, p. 149.

²² See tabled document 775.

²³ IAC Report 1, p. xi.

replacement site for inclusion in the Chain of Parks to be identified and an acquisition process established.²⁴ The key content to give effect to the replacement open space is found within the draft SCO14 Incorporated Document (clauses 4.7 and 4.8), the EPRs (particularly EPR LUP4) and the public open space framework. These mechanisms include a Public Open Space Expert Panel (which will include Kingston City Council) being convened to advise on matters of public open space replacement, and the preparation of public open space management plans, which sit under the public open space framework. For the stabling facility site, DELWP is also expected to be involved, noting it is the key state government facilitator of the Chain of Parks.

I support the IAC's view that replacement open space needs to be identified for this site, and a process for its acquisition established and implemented.

I have turned my mind to how best to achieve early delivery of quality open space that will have tangible benefits to the local community, in order to meaningfully offset the loss of the planned open space on the Delta landfill.

There needs to be a more targeted and timely action than even the IAC recommendation contemplates. In particular, I am concerned to ensure that the preparation of a public open space management plan for this site is prioritised, and that the optimal offsetting solution is identified and implemented as soon as possible.

To that end, it is my assessment that the Public Open Space Expert Panel, in conjunction with DELWP, should be tasked with specifically prioritising the identification of the optimal offsetting solution for this site. Further, that the public open space management plan for this site, which will contain what the Public Open Space Expert Panel considers is the optimum solution, should come to the Minister for Planning for approval. It will be important that the Kingston City Council and the community's views are heard and considered, in the identification of the proposed offsetting solution. I also expect that the delivery of the replacement open space will occur as soon as possible with the intention to establish it prior to operation of the stabling facility. This is in addition to the PSA and public open space framework being required to be approved by the Minister for Planning. Through these arrangements, I intend that the process and outcome will provide replacement open space to this local community that is commensurate with that being lost and the intent of the IAC's recommendation is achieved.

It is also my assessment that the optimal offsetting solution might not result in one single site but might involve the acquisition of a number of sites that could perform different roles in the network of open spaces. Having a degree of flexibility in the ultimate offsetting solution might enable earlier delivery and a better outcome than a search for a single site of the same size.

Impacts caused by the construction phase of the project at the stabling facility will be lengthy, and there will also be ongoing and permanent impacts in the operational phase.

In particular, there are risks associated with disturbance or contamination of the site. Generally, I am satisfied that the proposed EPRs set out a framework to appropriately govern further investigations and management of contamination.

One issue of importance raised by Kingston City Council and other submitters was to ensure the site is not used for temporary storage or treatment of contaminated spoil, brought to the site from other project locations. The IAC recommended that gasworks waste, as excavated from the Cheltenham site, should not be temporarily or permanently stored on the site, and they proposed content for EPR C3 to implement this recommendation. I accept this recommendation.

The IAC also concluded that the human health risk assessment required further work. This relates to both contamination and air quality issues in particular. The IAC recommended a new EPR C8 to deal with its

²⁴ IAC Report 1, p. 150.

concerns. I support the intent of the IAC's recommendation. In terms of the implementation of this recommendation, I have made further detailed comments in sections 6.3 and 6.9 below.

Noise will cause amenity impacts. Section 6.2 below contains my detailed assessment of construction noise all along the alignment, and I am satisfied that subject to my recommendations, construction noise will be acceptably mitigated for the stabling facility site. In relation to operational noise, the stabling facility is actually the only location along the alignment where the project's rail infrastructure is above ground. The IAC concluded that more stringent internal criteria (i.e. inside dwellings) should be adopted where the Passenger Rail Infrastructure Noise Policy applies in proximity to the stabling facility. I accept this recommendation. The IAC also made a finding that a cumulative noise assessment is warranted, applying specific criteria. I also accept this recommendation. The IAC noted that the site is large enough to be able to accommodate appropriate noise mitigation measures to reduce noise to levels lower than those proposed in the EES, and that at a minimum such treatments should be investigated and assessed. Finally, specifically for the stabling facility the IAC noted that the general environmental duty under the Environment Protection Act will require noise from operation to be minimised so far as reasonably practicable, rather than just complying with the Noise Protocol (EPA publication 1826.4 Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues). I accept this analysis.

In terms of air quality (dust and odour), the IAC noted the scale of works required, and identified key issues to be resolved. The IAC accepted that dust emissions could be managed through the EPRs, but stated that they need to be comprehensive, prescriptive and include timely and appropriate community complaint response measures. I accept the IAC's findings and recommendations on this issue. The human health risk assessment recommendation, addressed above, also relates to air quality impacts.

In terms of landscape and visual impacts, the IAC observed that the surface and tunnel plan for the stabling facility provided little guidance about how the site may actually be developed. The IAC was critical of deferring the design of the stabling facility until after the EES process, noting assessment of landscape, visual and other impacts would have been assisted by the EES including a more resolved plan for the stabling facility. I note a revised surface and tunnel plan was provided in the hearing that included landscape buffer areas along the four site boundaries. As noted by the IAC, landscape buffers will be a very important element of the successful mitigation of impacts for this site. The IAC concluded that the development footprint should be minimised to the maximum practical extent and noted the large site area will provide a degree of design flexibility and the opportunity to mitigate visual and other impacts. I agree with this assessment. The IAC was also satisfied that the place-specific requirements in the UDS provide an acceptable framework for addressing various design issues and agreed with Kingston City Council that the UDS should include a requirement to consider the provision of green roof structures. It found that the UDS and EMF include appropriate guidance for the design of the stabling facility, subject to further consideration of including green roof structures. I accept these findings and recommendations.

There will be significant impacts in terms of traffic and movement. In particular, the closure of Old Dandenong Road will have an impact upon connectivity for local residents, predominantly in terms of the ability to quickly access the Clarinda shops. To mitigate this impact, the IAC recommended that a local alternative turning facility be provided. I accept this recommendation in principle, subject to my further detailed comments in the traffic section below. Other traffic and access issues include a recommendation by the IAC that further specific pedestrian connectivity is included in the project, which I accept, and a recommendation to widen Kingston Road in the vicinity of the site, to four lanes. I deal with this recommendation below.

There will also be impacts on businesses, social impacts, other impacts that require management such as for light amenity, and impacts in terms of arboriculture, ecology and water management. I have considered these impacts and consider they can be acceptably managed by the EMF and EPRs.

4.4 Role of precinct planning

SRL East is a large-scale infrastructure project. Though the rail line is underground, the location of future stations will result in significant at grade alterations to and mix of integrated transport connectivity infrastructure. This will give rise to a number of changes as opportunities emerge from the benefits that flow from the creation of transport connectivity in the designated station locations.

The EES identified that the area within a 1.6 km radius from a SRL station would be the area subject of precinct structure plans to be developed in consultation with councils, government agencies, stakeholders and local communities and which will outline sub-precinct use, precinct development objectives, strategies and desired development outcomes, and be implemented through PSAs.²⁵

This approach reflects the reality that works will be designed, assessed and constructed over an extended timeframe.

The EES and the surface and tunnel plans also identified areas within SRL construction sites as 'Site subject to future precinct planning process'. Future land uses and built form in these areas remains open. SRLA did not present any detailed proposed planning for these areas as part of the rail project.

Whitehorse City Council raised concerns about "the extent and nature of future participation by the councils and the public in the future precinct planning, either for the planning within the project land or within the wider precinct."²⁶ Other submitters also raised concerns about the separation of precinct planning from the assessment of the project, and the designation of certain sites within the project land as sites subject to future precinct planning.

The IAC did not raise any concerns about the separating out of precinct planning from the assessment of the rail project. The IAC saw no deficiency in the absence of more guidance about how the sites identified as subject to future precinct planning would be developed.

Whilst the IAC made some detailed recommendations about the content of the surface and tunnel plans, which I deal with below, overall it considered that the surface and tunnel plans and the UDS coming out of this process for the project, could be used in both the creation of the urban design and landscape plans (UDLPs) as well as the future precinct planning processes, and that these processes can further address detailed design issues. In other words, the surface and tunnel plans and the UDS provide an appropriate framework for guiding more detailed future planning processes.

I support the position and approach taken by the EES and the IAC in regard to precinct planning for SRL stations.

It is desirable that the location and controls for this key rail infrastructure are definitively resolved first, prior to broader planning for the precinct.

Precinct planning has a broader scope than the rail project that will facilitate the integration of opportunities and needs from across the broader station contexts. Precinct planning also offers more time to develop land use options and elicit community feedback while detailed design and construction of the rail project progresses.

While it is true that the future detailed planning of these areas will throw up for consideration a range of matters, none of those matters are unusual in the context of city planning exercises, nor are they likely to give rise to any significant environmental effects that would warrant a reconsideration of the rail infrastructure or the stations.

It is apparent from the IAC's report and the submissions made that in the course of the hearing that some parties saw the EES process as an attempt to resolve or lock in future precinct planning outcomes at this

²⁵ EES Section IP1.6.2.

²⁶ Tabled document 757.

stage. All of these matters raised need to be considered as part of a dedicated separate precinct planning process. No doubt some of the matters raised will inform future precinct planning discussions, but the detailed final resolution of these matters is not necessary or desirable in the context of this EES.

I fully expect that as precinct planning occurs, some ideas raised in submissions for this EES will be considered and potentially even adopted if they are found to have merit. This includes things like the extension of the Gardiners Creek naturalisation works southwards, complementary pedestrian and cycle paths, commuter parking at the Burwood SRL station site, and the lowering of the existing Glen Waverley rail line and station.

Other aspects of this project may be further refined and improved through precinct planning, though they are also acceptably dealt with as part of the proposed controls for this project – for example, the potential for improved integrated water management, and refinements to localised traffic and movement networks and infrastructure.

Precinct planning will resolve the future land use of the sites shown as subject to precinct planning, on the surface and tunnel plans. This will include consideration of opportunities to return sites to public open space uses or to make other public realm contributions.

It is in fact my expectation that the development of the UDLPs, and precinct planning, will work hand in hand to optimise the outcomes for the activity centres where a station is proposed by this project.

5. Environmental management and planning framework

A sound regulatory framework and environmental control regime is needed to ensure that adverse effects of the projects are effectively mitigated and managed. This chapter describes the planning controls and environmental governance arrangements proposed for the project and my findings in relation to these.

The EES proposes an environmental management regime to be given statutory effect through a planning scheme amendment introduced into the planning schemes by two incorporated documents, one to facilitate the development and the other for tunnel infrastructure protection, that was exhibited in draft form with the EES. The planning controls are discussed in Chapter 5.1.

The planning controls will include an obligation to prepare an EMF that contains a suite of EPRs for the project. The EMF is discussed in Chapter 5.2.

Other post approval governance and documents are discussed in Chapter 5.3

5.1 Planning controls

One of the key approvals for the project is proposed to be a planning scheme amendment, which would introduce controls to facilitate the construction and use of the project.

A draft PSA (Amendment GC197 to the Whitehorse, Monash, Kingston and Bayside Planning Schemes) was prepared by the proponent and included in the exhibited EES in Attachment C. The draft PSA seeks to:

- facilitate the delivery of the project in a timely, coordinated and consistent manner;
- establish a framework to manage environmental effects during construction and operation; and
- ensure the project can be planned with certainty and commence without delay.

In broad terms, the proponent's draft PSA:

- inserts incorporated documents into the planning schemes to allow the use and development of land for the project in accordance with the specific control in the incorporated documents;
- applies the specific controls overlay (SCO) and the SRL East Incorporated Document to enable the delivery of the project (Planning Scheme Map Reference SCO14); and
- applies the SCO and the SRL East Infrastructure Protection Incorporated Document to protect the project infrastructure from future development by applying permit application conditions (Planning Scheme Map Reference SCO15).

Following this assessment, the Minister for Planning will consider whether or not to approve the proposed PSA, and if so on what terms. The assessment of the environmental effects of the project required by the Environment Effects Act will form part of the Minister for Planning's consideration of the proposed PSA.

The PSA is proposed to include controls which give effect to the environmental mitigation measures to be implemented. The IAC was appointed both as an Inquiry under the Environment Effects Act to assess the environmental effects of the project, but also as an Advisory Committee under the Planning and Environment Act to provide the Minister for Planning with advice as to the content and structure of the PSA.

The IAC has made recommendations on the draft PSA. I have considered those recommendations in the context of my assessment of the environmental effects of the proposed works and, in particular, the manner in which those environmental effects might be mitigated. This assessment will form part of the Minister for Planning's consideration of the PSA at a later stage when the Minister for Planning comes to consider whether or not, and on what terms, the project should proceed.

Specific controls overlay

The SCO is one of the suite of tools available in the Victorian Planning Provisions. It allows land to be used or developed in accordance with a specific control contained in an incorporated document corresponding to that land. The IAC found that the SCO is an appropriate planning tool to facilitate the project and to set out some of the mitigation measures that are to be delivered for the project to the Minister for Planning's satisfaction.²⁷ I agree with that finding.

The IAC was required to consider the extent of land to be included in two SCOs (SCO 14 and 15) and found that the land proposed to be included within those areas was appropriate, subject to the following changes:

- review the land held by APH Holdings (925-927 Whitehorse Road, Box Hill) to determine whether it can be excluded from the project area and SCO14 in light of the permit issued for its use and development for a hotel and other uses; and
- include any consequential changes to reflect the revised tunnel alignment under Monash University.²⁸

I accept and adopt those findings. I also recommend, as part of this assessment, that SRLA review the need for the acquisition of the APH Holdings land (925-927 Whitehorse Road, Box Hill site). This matter will be addressed when the Minister for Planning comes to consider the PSA (see Section 6.5 for more detail).

SCO14 Incorporated Document

The draft SRL East Incorporated Document (SCO14 Incorporated Document) includes specific conditions, some of which require plans and documents, to be prepared and approved by the Minister for Planning at different specified times but predominantly before the main construction works commence. These are as follows:

- surface and tunnel plans;
- EMF and associated EPRs (as discussed in Section 5.1);
- Urban Design Advisory Panel;
- urban design strategy (UDS);
- urban design and landscape plans;
- public open space framework;
- Public Open Space Expert Panel;
- native vegetation (to the satisfaction of the Secretary to DELWP); and
- creating or altering access to roads (to the satisfaction of the Head, Transport for Victoria).

The SCO14 Incorporated Document also defines preparatory buildings and works that may be undertaken before these plans and documents are approved.

Under the draft PSA arrangements, the Minister for Planning would be the planning authority for the PSA and the responsible authority for administering and enforcing the planning scheme for project land (i.e. land within the SCO14) and any other implications for the use or development of the land (referenced at the schedule to Clause 72.01 – Responsible authority for this Planning Scheme).

The IAC recommended changes to SRLA's final draft SCO14 Incorporated Document, including:

- adding a new Clause 4.3.4 – *Prior to the submission of an amendment to the Minister for Planning for approval, amended Surface and Tunnel Plans must be provided to the relevant Council/s for review and comment. The minimum period for Council comment is 28 days;*

²⁷ IAC Report 1, p. 136.

²⁸ IAC Report 1, p. 247.

- including Kingston, Monash and Whitehorse councils as members of the Urban Design Advisory Panel at Clause 4.5.1 and the associated removal of the requirement at Clause 4.5.3 for councils to be consulted;
- deleting the qualifier “with relevant councils” at Clause 4.6.3(c) in relation to consultation about the UDS, and adding the word “including” before “all written comments received...”;
- adding a new Clause 4.7 public open space framework; and
- including one representative from each of Kingston, Monash and Whitehorse councils as members of the Public Open Space Expert Panel for land within the relevant local government area at Clause 4.8.

I note that the IAC did not consider it was desirable to have a requirement for a ‘no net detriment’ test in the SCO14 Incorporated Document when surface and tunnel plans are being amended. I accept that finding.

I consider that the SCO14 and SCO14 Incorporated Document are appropriate planning tools to facilitate the project and to require mitigation measures. I support the IAC’s recommended changes to the SCO14 Incorporated Document. I support the IAC’s finding that the councils should have 28 days to review and provide comments on amendments to the surface and tunnel plans to assist the Minister for Planning in considering them.

Although not mentioned by the IAC, I also recommend that the Urban Design Advisory Panel, council and public review and comment time frames about UDLPs should be 28 days (currently 21 days) at Clause 4.6.11 (a) and (c) and 4.6.12 (b) to allow sufficient time for these large documents to be reviewed.

I support the IAC’s recommendations regarding the Minister for Planning’s approval of the public open space framework and the inclusion of the councils as members on the Urban Design Advisory Panel and Public Open Space Expert Panel. In addition, I recommend that the public open space management plan prepared for the Heatherton Stabling Facility be submitted for the Minister for Planning’s approval. My reasons for this are outlined in Section 4.3.

Whitehorse City Council and Monash City Council made a submission that the residential support guidelines should be referenced in the Incorporated Document. This was not included within the IAC’s recommended changes. I do not think it is necessary to include this reference.

SCO15 Incorporated Document

The SCO15 Incorporated Document is a planning tool designed to protect the tunnel infrastructure from development from above. It sets out criteria for developments requiring a planning permit. For land included within the SCO15, Whitehorse, Monash, Kingston and Bayside City Councils will remain responsible for administering and enforcing the planning schemes within their respective municipalities and will process planning permit applications under the SCO15 Incorporated Document.

I consider it is appropriate to apply controls and requirements to protect the tunnel infrastructure. The IAC supported, as do I, the SCO15 Incorporated Document as shown in tabled document 790, subject to Appendix I maps being updated to reflect the revised tunnel alignment under Monash University.²⁹

I support the IAC’s recommended EPR LUP5 that requires SRLA to develop a guide for permit applications under the SCO15 Incorporated Document.³⁰ Further, I consider that SRLA will need to resource a planning referral assessment team to prevent unnecessary and onerous permit requirements and approval delays to those properties affected by the SCO15. I recommend that SRLA provide a draft permit application guide as a supporting document to the draft PSA when it is submitted for the Minister for Planning’s consideration.

²⁹ IAC Report 1, p. 248.

³⁰ IAC Report 2, p. 151.

This will ensure that a guideline is available from the commencement of the SCO15 requirements. I acknowledge that the guide may be a draft version and that it will evolve in consultation with councils.

5.2 Environmental management framework

The EMF establishes accountabilities and a framework for environmental management for the next phases of project development and delivery including detailed design, construction and operation. It includes a commitment from SRLA to implement an environmental management system and to enforce contracts that would require contractors to also implement environmental management systems. This model has been applied to several recent major public infrastructure projects in Victoria. The EMF would need to be prepared to the Minister for Planning's satisfaction prior to the commencement of development. The key documentation that SRLA propose to form the EMF is shown in Figure 2.

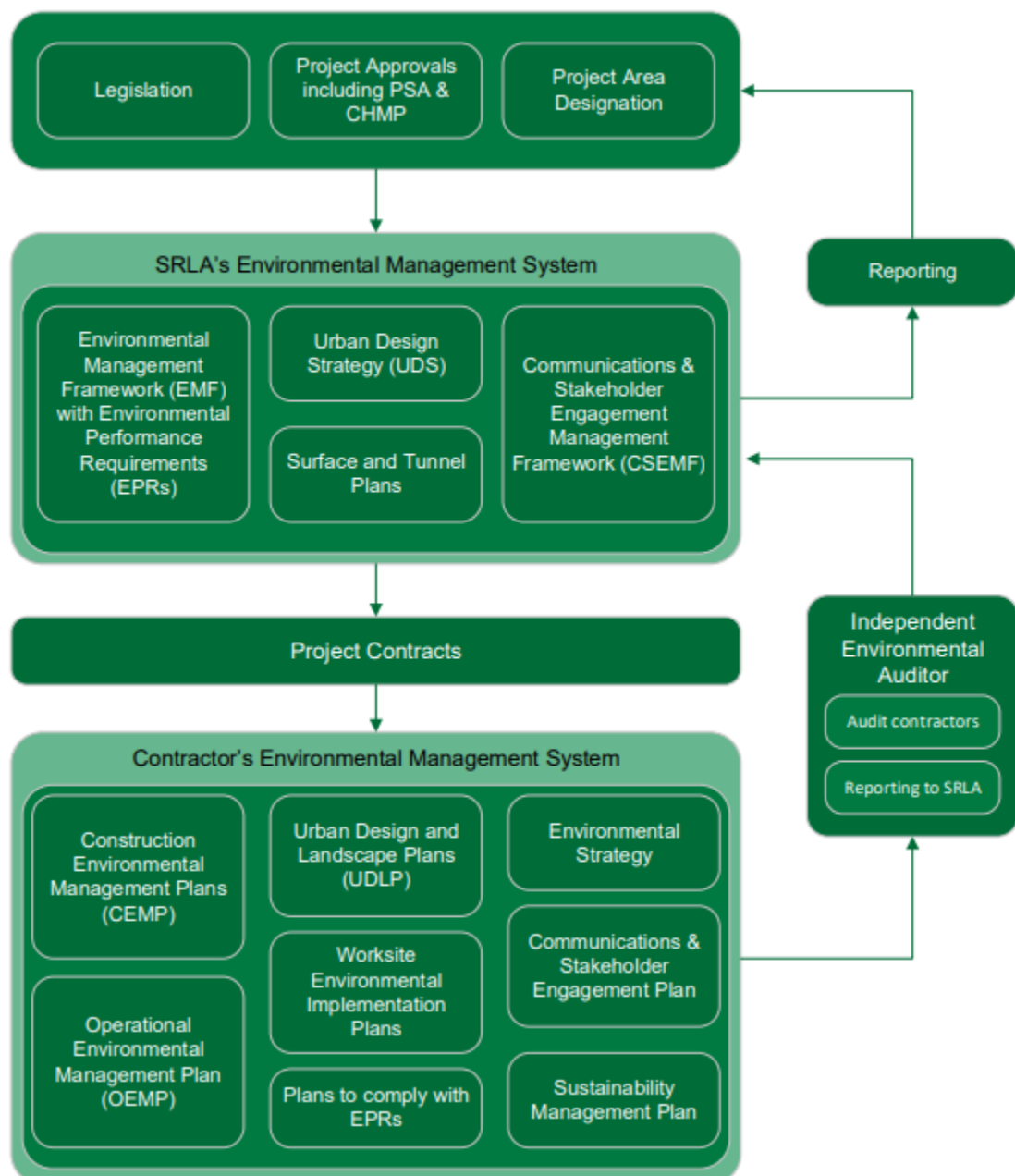


Figure 2: Key environmental management documentation (source: exhibited draft EMF).

Environmental performance requirements

The EES was published with a draft set of EPRs³¹ that have subsequently been refined during the IAC hearing by SRLA in response to evidence and submissions. The IAC closely examined 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 SRLA and which have been commented upon by the IAC and other submitters.

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 is to set clear standards for environmental performance, either by reference to statutory obligations, or by establishing project-specific benchmarks which have regard to best practice and community expectations.

The IAC provided a recommended set of EPRs and my assessment of the EPRs is summarised in Appendix A.

The general environmental duty

The general environmental duty is set out in Chapter 3 above. In terms of the relationship between the proposed EMF and the general environmental duty, the EPA contended during the hearing that the general environment duty establishes a proactive approach to risk identification, assessment, and controls of risks of harm to human health and environment from pollution and waste. The EPA went on to state that: *“the EMF will provide the proponent with a detailed reference tool to manage risks of harm to human health and the environment. However, it may not be the case that the EMF will exhaustively deal with all risks contemplated by the GED [general environmental duty] which may arise during the project. The proponent will need to ensure that a dynamic process of identification, assessment and control of the risks of harm to human health and the environment from pollution and waste is undertaken”*.³²

Roles and responsibilities

The proposed EMF sets out roles and responsibilities for environmental management (Section 3.2 of the EMF). The roles and responsibilities of SRLA as the project proponent, contractors engaged by SRLA to deliver the project, the Urban Design Advisory Panel, and the independent environmental auditor, who will be responsible for auditing compliance against environmental obligations, are also described. The IAC recommended that the Public Open Space Expert Panel be added to the parties who have environmental roles and responsibilities and I support this recommendation (refer Section 5.2).

The role and responsibilities of the independent environmental auditor was discussed during the hearing. Audits will play an important role in monitoring and evaluating compliance. The EMF requires the independent environmental auditor and SRLA to prepare a summary of all the audit reports annually for provision to the Minister for Planning and to the community via the project website. I recommend that summary audit reports are prepared and published at six-monthly intervals and the EPR EMF3 should be amended accordingly. I also support the IAC’s revision to EPR EMF3 to require publication of the reports within one month of provision to the Minister for Planning, so as to ensure the currency of the information.

I note that Whitehorse City Council and Monash City Council sought to have full independent environmental auditor reports published on the project website (rather than a summary).³³ I consider that a summary is sufficient to enable the public to be informed of any non-compliances with EPRs, trends in performance and remedies being implemented.

³¹ SRL East EES, Chapter EM7.

³² EPA Victoria Submission No. 269 to EES.

³³ Tabled document 757.

Clear and responsive communication and stakeholder consultation are core components of the EMF and essential to the effective management of project impacts. The IAC recommended that additional community complaint response protocols should be included in EPR EMF4, which requires SRLA and its contractors to develop and implement a complaints management system. I support this recommendation to assist in improving transparency and ensuring that community complaints are responded to in a timely manner. My specific findings about responding to community complaints are provided in Section 6.4.

The agreement between Monash University and SRLA and EPRs referring to process statements

The Monash University Clayton Campus is a significant landholding, adjacent to the proposed Monash SRL Station, and which is proposed to have the tunnel running beneath it.

Monash University made a submission on the EES and was represented before the IAC. Its concerns included impacts on its sensitive equipment and buildings, particularly from electromagnetic interference (EMI) and noise and vibration. Partway through the IAC hearing, and before the presentation of its evidence, Monash University advised the IAC that it had reached an agreement with SRLA, to support the project subject to an agreed re-alignment of the tunnel in the vicinity of its campus and EPRs agreed between it and SRLA.

The IAC asked for that advice to be confirmed in writing. SRLA provided Technical Note 38, which advises that the terms of the agreement between Monash University and SRLA are confidential, but insofar as they affect the deliberations of the IAC, they can be summarised as follows:

- SRLA and Monash University agree to the proposed station located at option 1 and as exhibited in the surface and tunnel plans;
- SRLA agrees to table an amendment to the surface and tunnel plans to realign the tunnel as shown on Attachment 3 tabled document 276 and move the alignment no further west than that alignment (agreed alignment); and
- EPRs agreed between Monash University and SRLA, as included in SRLA's Day 2 EMF tabled 24 March 2022.

A representative of Monash University attended and observed the remainder of the IAC hearing. Monash University did not raise any concern with the subsequent versions of the EPRs tabled by SRLA and other parties. In its report, the IAC did not raise any concern about the agreement between Monash University and SRLA. I support the proposed location of the Monash SRL Station (referred to as 'option 1') and the agreed re-alignment of the tunnel.

The EPRs agreed between Monash University and SRLA, EMI1A and NV1A, are shown in Appendix A along with the IAC's recommended changes. It appears that the intent of EMI1A and NV1A is to enable Monash University and SRLA to agree site-specific controls for EMI and noise and vibration, that will be more specialised, and more stringent, than the EPRs that will apply to all other sensitive receivers, through the creation and agreement of a process statement. If a process statement is agreed it will, in effect, override the other topic-specific EPRs. In principle I support the intent of the negotiated outcome and commend both the university and SRLA in the constructive way in which they have resolved the issues. I am reluctant to interfere with the resolution of the matter between SRLA and the university, particularly given the highly specialised nature and significance of the equipment at Monash University, and the proximity of the tunnel alignment to the Monash University campus. However, I do have some reservations about the particular wording of EMI1A and NV1A as agreed between Monash University and SRLA.

First, EMI1A and NV1A are not expressly restricted only to Monash University. The language would permit SRLA to enter into process statements with other receivers. It does not appear that this is necessary to give effect to the agreement with Monash University. I also consider it is undesirable as a matter of general approach, to enable the standards set by the EPRs for a project to be changed by agreement, without any oversight other than in special cases. Special circumstances may warrant a different approach being provided for, such as in the case of Monash University, but it is my expectation that these kinds of

exceptions to the general standards need to be more closely governed than would be permitted by EMI1A and NV1A in their current form.

Second, EMI1A and NV1A do not make clear that any process statement created should only have standards that are more stringent than the other EPRs, and not less stringent. I do not consider it is appropriate to have an EPR that would allow for a weakening of the standards set generally by the EPRs for a project.

Any alteration to the effect of an EPR other than arising in the context of a special case (like that of Monash University) should be transparently considered.

Finally, there also appears to be some ambiguity in the proposed drafting of EMI1A. Clause 1(a) refers only to two buildings within the Monash University campus, and clause 1(b) refers to receivers outside of the campus. It is unclear what is intended to apply in relation to the other buildings on the Monash University campus. Hence, I consider that the precise terms of the EPRs agreed between Monash University and SRLA should be revisited in the drafting of the PSA that will follow this assessment, in line with my comments above. At that time the Minister for Planning may consult further with Monash University and SRLA in relation to the precise language.

5.3 Post planning scheme amendment approval governance

In addition to the EMF and EPRs, SRLA has committed to a range of measures to manage and minimise the project's impacts, some of which are required by the SCO14 Incorporated Document to be approved by the Minister for Planning after the PSA (as discussed in Section 2.2).

Surface and tunnel plans

The surface and tunnel plans identify the project land, tunnel alignments, the location of the rail infrastructure, station facilities, public open spaces, road alignments and sites subject to future precinct planning processes. The IAC considered that the surface and tunnel plans provide a broad framework for future development and made a recommendation for some of the detail in the plans to be removed, which I support. This is discussed further in Sections 6.1 and 6.7.

Urban design strategy

A draft UDS was exhibited as part of the EES. The UDS sets out the high-quality urban design outcomes that the project must achieve. It will also inform the development of site-specific UDLPs, under the guidance of the Urban Design Advisory Panel.

The IAC considered that the place-specific plans in the UDS represent 'potential design outcomes' rather than fixed proposals.³⁴ I consider that place-specific plans play an important role in ensuring that detailed design delivers these locally important outcomes. While these plans may not be fixed proposals, they set requirements for detailed design that I will expect UDLPs to address.

I support SRLA and IAC's proposed changes to the UDS³⁵ along with my other recommendations in Chapter 6. These should be included in the UDS to be submitted to the Minister for Planning for approval.

Urban design and landscape plans

UDLPs are required to be prepared and approved for the above ground building components of the project at the station sites, the stabling facility and the emergency support facility. These plans will be prepared in consultation with the Urban Design Advisory Panel and will also go through a public comment and review process prior to being submitted for the Minister for Planning's approval.

³⁴ IAC Report 1, p. 141.

³⁵ As shown at tabled document 768 and 769, subject to the changes in the IAC Report 2, p. 264.

Public open space framework

The purpose of the proposed public open space framework exhibited as part of the EES is to guide the process of managing the effects of the rail and infrastructure components of the project on public open space. The public open space framework will be finalised with advice from the Public Open Space Expert Panel.

I support the IAC's recommended changes to the SCO14 Incorporated Document, as discussed above, for the public open space framework to be submitted to the Minister for Planning's satisfaction. This is further discussed in Chapter 4 and Sections 6.6 and 6.7.

I support the IAC's recommended modification to the public open space framework, subject to my recommendations for some flexibility in the delivery of replacement open space for the Heatherton Stabling Facility as discussed in Chapter 4.³⁶

Public open space management plans

Public open space management plans are required by EPR LUP4 and the public open space framework, to apply the public open space framework principles and identify and manage the replacement open space for the project. These plans will also be prepared in consultation with the Public Open Space Expert Panel. I support the IAC's recommended changes to the SCO14 Incorporated Document, as discussed above, which will reference the preparation of these plans. The role of these plans and my recommendations is further discussed in Chapters 4 and Sections 6.6 and 6.7.

Roles of specialist panels under the proposed controls

Urban Design Advisory Panel

SRLA's terms of reference for Urban Design Advisory Panel identify its purpose as providing SRLA with expert, timely, consistent and constructive advice and guidance to assist in achieving high quality urban design, architecture, landscape architecture, and transport and land use planning outcomes. The project's Urban Design Advisory Panel was established on 9 March 2021 and includes representation of the Office of the Victorian Government Architect, the Department of Transport, and SRLA. However, I support the IAC's recommendation that a representative from each of the Kingston, Monash and Whitehorse councils be included on the Urban Design Advisory Panel.

Public Open Space Expert Panel

SRLA's terms of reference for the Public Open Space Expert Panel identify its purpose as facilitating engagement and providing advice on mitigating any impacts to public open space from the construction and development of the project. The expert panel will consult relevant stakeholders and advise SRLA on the development and implementation of the public open space framework and public open space management plans.

The expert panel was established on 1 November 2021³⁷ and is chaired by an independent expert. It comprises independent experts with specialist expertise in open space, urban design, community consultation and landscape architecture. However, I support the Kingston, Monash and Whitehorse councils be included on the Public Open Space Expert Panel.

Councils as members of the Urban Design Advisory Panel and Public Open Space Expert Panel

The project is city transforming. Given councils' experience in structure planning and urban design, their role as open space owners and managers on behalf of their communities, and their knowledge of their

³⁶ IAC Report 1, Chapter 12 and shown tracked in its Report 2, Appendix H.

³⁷ Tabled document 234, SRLA- Technical Note 6 – Attachment B.

municipality and communities, I agree with the IAC that the councils are well placed to be members of the Urban Design Advisory Panel and Public Open Space Expert Panel, which will guide change.

The councils' experience and knowledge can better target urban design and open space outcomes and build inclusion, trust and transparency in the planning and approval process for the project. This will be of benefit to both panels. This will also support the councils to be involved in the development of the site specific public open space management plans.

Consistent with the findings and recommendations of the IAC,³⁸ I recommend the inclusion of Kingston City Council, Monash City Council and Whitehorse City Council as members of both panels, in respect of land within their local government areas.

I support the inclusion of councils on the project panels, which is not the situation for all state infrastructure projects, due to the transformative nature of the project, the extended duration of the project, and the importance of councils' input as important local landowners and stakeholders in transformation and open space in these municipalities.

I acknowledge SRLA's concerns about the membership of the councils on these panels, including confidentiality and conflict of interest issues. However, I consider that this can be managed through confidentiality agreements or exclusions when any conflicts of interest arise, as may be necessary for other Urban Design Advisory Panel or Public Open Space Expert Panel members.

³⁸ IAC Report 1, p. 140.

6. Assessment of environmental effects

It is my assessment that the environmental effects of the project have been properly identified and carefully considered in the EES and inquiry processes. The environmental effects largely fall into two main categories: construction effects and operational effects.

In broad terms, most of the adverse operational effects of establishing a new railway line have been eliminated by placing most of the infrastructure underground. The above ground operational impacts are largely confined to relatively few locations: the stabling facility and the station locations.

The station locations will experience a considerable amount of change. The change will take a variety of forms. In some areas, a program of land acquisitions necessary to construct the project will alter the existing land tenure, land use and ultimately the physical form of areas surrounding the proposed station locations. That kind of change is inevitable given the size, nature and role of the infrastructure proposed. The changes that this will bring can be described as environmental effects of the proposal and are well enough understood to know that they are capable of management using conventional land use planning tools. It is not possible to know now with a high level of precision how these areas will be developed in their ultimate form, but I am satisfied that the environmental effects of the changes which the introduction of new stations will generate in the surrounding area will be manageable, and that those changes will, on balance, produce overall benefits to the communities that the stations will serve.

The stabling facility is a significant and necessary piece of infrastructure which needs to be located on a large parcel of land close to the infrastructure that it serves. I acknowledge that the introduction of the stabling facility in the location proposed will cause significant changes to the current amenity of the surrounding area and will alter long held plans for that land to form part of the broader regional open space land. For the reasons that I set out in this assessment, I acknowledge the impact that this will have on those closest to the facility, but conclude that with the mitigation measures proposed, the environmental effects of the stabling facility can be minimised to an appropriate level.

Some construction activity associated with the project is easily capable of management by deploying straightforward and commonly used construction management techniques. Other construction activity, either because of its duration, extent, or necessary techniques will be significant and will at times have a severe effect on the environment and the amenity of people in the surrounding land. It will be necessary to seek to minimise the effects of these construction impacts to the extent reasonably practicable – having regard to the nature of the project and the impacts concerned. I conclude that this can be achieved, if the measures recommended in this assessment are adopted and implemented during construction.

Assessment evaluation objectives

To provide an integrated structure for this assessment, key aspects of legislation and statutory policy are reflected in evaluation objectives that were set out in the EES scoping requirements. My assessment has been made in reference to these evaluation objectives (Table 1).

Table 1: Assessment evaluation objectives

Section	Final evaluation objective
6.1	Enable a significant increase in the capacity of the metropolitan rail network and improve transport connectivity and multimodal connections while minimising the adverse effects of the works on the broader and local public transport, cycling, pedestrian and road networks and their users.
6.2, 6.3, 6.4	Avoid or minimise air quality, noise and vibration effects on the amenity and health of nearby residents and local communities and protect sensitive infrastructure.
6.5	Avoid or minimise adverse effects on businesses include upon their functionality, access to services and facilities provided by businesses and on the retail economic environment.
6.6, 6.7	Avoid or minimise adverse effects on landscape, visual amenity, open space, recreational and public realm values and capitalise on opportunities to enhance these values.
6.7	Achieve integration with adjoining land uses, minimise displacement of land use activities and key infrastructure and resolve inconsistencies with strategic land use plans.
6.2, 6.3, 6.8	Avoid or minimise adverse effects on the community near the project, including with regard to community cohesion, access to services and facilities and health impacts and capitalise on opportunities to enhance benefits for communities.
6.9, 6.10	Avoid adverse environmental effects resulting from the disturbance and handling of contaminated or acid forming material and minimise spoil generation, maximise reuse and manage spoil in accordance with best practice principles.
6.10, 6.11, 6.12	Avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments and on land stability.
6.13, 6.14	Avoid or minimise adverse effects on Aboriginal and historical cultural heritage values and maximise opportunities to appropriately complement and preserve these values.
6.15, 6.16	Avoid or minimise adverse effects on vegetation (planted, remnant and regenerated), tree canopy and native terrestrial and aquatic flora and fauna
6.17	Avoid and minimise greenhouse gas emissions and capitalise on opportunities to reduce waste and use resources efficiently.

6.1 Transport and traffic management

Transport and traffic effects are addressed in Chapter TT and Technical Appendices R.1 and R.2 of the EES and in Chapter 15 of the IAC Report. SRLA has proposed eight EPRs to deal with transport and traffic effects and these have all been the subject of recommendations by the IAC.

Evaluation objective

Enable a significant increase in the capacity of the metropolitan rail network and improve transport connectivity and multimodal connections while minimising the adverse effects of the works on the broader and local public transport, cycling, pedestrian and road networks and their users.

Assessment context

The project is the first stage of a new high-capacity orbital rail line being developed to generate significant transport and land use benefits to Melbourne and Victoria. These benefits include an increase to the capacity of the metropolitan rail network and improved connectivity to activity centres, employment centres and universities in eastern Melbourne. The transport and land use objectives of the project are further discussed in Sections 4.1 and 6.7.

Given the busy locations within which new SRL stations and infrastructure will be constructed and the long construction timeframes, adverse transport effects will arise during construction. Construction-related

impacts will arise from heavy vehicle use and haulage of spoil, road and footpath closures and diversions, relocation of bus and tram stops, loss of car parks and workers parking and commuting to and from construction sites. These changes will cause disruption to and increased congestion on local and arterial roads, delays to bus and tram services and pedestrian and cyclist routes and loss of public and private car parking.

Once the project is operational, some roads proposed to be closed for construction are also proposed to be permanently closed including Old Dandenong Road in Heatherton, Carinish Road in Clayton and Coleman Parade and Glendale Street in Glen Waverley. In Box Hill, there would be a permanent reduction of Whitehorse Road to two lanes in each direction from Station Street to Elgar Road. These road network changes will change traffic flows in local areas. In order to achieve transport objectives, the project would need to provide quality connections to existing train stations, bus and tram interchanges, pick-up and drop-off parking spaces and accessible car parking. Stations will need to cater for increased pedestrian and cyclist activity including provision of bicycle parking and upgraded cycle paths.

Discussion

The project will deliver a significant increase in the capacity of the metropolitan rail network and improve transport connectivity and connections. The benefits of the project, including the transport benefits expressed within the evaluation objective, are described in Section 4.1.

To deliver this significant investment in public transport, there will be changed transport conditions during construction, and changes to the local transport network once the project is in operation. To manage construction and legacy transport impacts, transport EPRs in the EMF establish a management framework for the project as it progresses through detailed design, construction and operation. The transport EPRs require:

- preparation of transport management plans (TMPs) for each construction site to minimise disruption due to construction works via EPR T1;
- the establishment of a transport management liaison group via EPR T2 to provide advice on TMPs;
- road, public and active transport impacts to be managed during construction through the TMPs via EPRs T3, T4 and T5; and
- road, public and active transport to be designed and managed in operation via EPRs T6, T7 and T8.

To guide the ultimate design, the UDS provides integrated land use and transport principles and objectives and place-based requirements.

Transport modelling and transport network planning

I support the IAC's finding that the transport modelling undertaken to underpin the assessment of operational transport effects is adequate for this phase of the project. Given the long period until operations commence in 2035, there is ample time to refine assumptions, conduct further modelling and incorporate refinements into the project's detailed design and the supporting transport network. This will be important to help optimise outcomes and improve operational transport effects.

I support the IAC's finding that further sensitivity modelling of precinct development scenarios should be undertaken and that this can be done through a modification to EPR T6 to inform the design of the road network around each precinct. These precincts will ultimately be subject to a high level of change. The project will be a catalyst for development, which will in turn increase pressure on existing roads and shared use paths. Changes in car use in these precincts will need to be carefully managed to achieve precinct aspirations for walkability and connectivity. I discuss the future precinct planning process in Section 4.4 of my assessment.

The IAC heard from the Department of Transport that surface level transport planning would be critical in the future precinct planning process and that the Department of Transport will continue to consider changes to the transport network to optimise the benefits of the project.

Paid area connections

The project includes a paid area connection to the existing Clayton Station and allows for future paid area connections to existing stations at Cheltenham, Glen Waverley and Box Hill. The transport expert witnesses all agreed that paid area connections were both feasible and would improve multi-modal connections between SRL and existing stations. The Department of Transport advised that it intends to deliver paid area connections at Cheltenham, Glen Waverley and Box Hill in due course, subject to funding and approvals.

I support the IAC's finding that the project can deliver transport objectives without the provision of these additional paid area connections. I support the IAC's finding that an underground paid connection at Box Hill should be delivered as soon as practicable, preferably concurrently with the project. The IAC made this finding for Box Hill in light of projected high rail to rail interchange volumes, the considerable benefits for users and avoidance of additional construction impacts for this area given the already long construction period imposed by the project. I consider it appropriate that the Department of Transport further progresses the planning for the paid area connection at Box Hill as a matter of priority.

Pick-up and drop-off parking

Commuter parking is not proposed to be delivered as part of the project. I support the IAC's finding that the absence of commuter parking is appropriate and consistent with planning policy. However, the IAC singled out the SRL station at Burwood as potentially benefiting from some commuter parking. All other stations are well located within activity centres (except for Monash University) and connected to other public and active transport options. I support the IAC's conclusion that the provision of commuter parking at Burwood should be reviewed as part of the precinct planning process.

In the absence of commuter car parks, functional and accessible pick-up and drop-off parking is key to supporting access to stations. The IAC found that it will be important to ensure that pick-up and drop-off spaces are conveniently located, easy to access and practical.

The IAC raised concern regarding the location and provision of pick-up and drop-off parking at some stations, as proposed in the surface and tunnel plans, noting that insufficient evidence was provided to fully examine the amount that would be needed. Insufficient pick-up and drop-off parking is likely to result in the use of local streets which raises safety and operational issues, as well as amenity impacts on residents.

The IAC heard from SRLA's expert witness that further analysis should be undertaken to inform the final provision of pick-up and drop-off facilities at each SRL station, and that this analysis would include refinements of inputs such as 'dwell time' and research around pick-up and drop-off arrival patterns, especially where queuing could impact other road network operations.

The IAC made specific findings in relation to the location of pick-up and drop-off parking at Cheltenham, Clayton, Glen Waverley and Box Hill SRL stations. I support these recommendations being considered and assessed at the time of preparation of the UDLPs.

I support the IAC's finding that given the unresolved nature of the pick-up and drop-off facilities, and to some extent the bus interchange locations (discussed below), that these be removed from the surface and tunnel plans.

It is my assessment that further work is needed during the detailed design phase to optimise the locations and quantity of pick up and drop off parking and the outcomes of this work should be reflected within the UDLPs. I recommend that EPR T6 should be revised to include further work to inform the design of pick-up and drop-off parking.

Bus interchanges

The optimal location for bus interchanges to service the SRL stations and achieve connectivity was examined in the EES and during the IAC hearings. The IAC made findings in relation to the bus interchange locations at Cheltenham, Monash and Box Hill stations. I support these recommendations being considered and assessed at the time of preparation of the UDLPs. I also support the IAC's recommendation to remove bus interchanges from the surface and tunnel plans so that their location may be optimised through detailed design and then resolved in the UDLPs.

Submitters were concerned about the poor connectivity and amenity outcomes from excluding the Box Hill bus interchange from the project. As noted by the IAC, the relocation or other works needed for the Box Hill bus interchange and its connection with the new SRL station should be determined during preparation of the UDLP for Box Hill.

The Department of Transport contended that planning for the Box Hill bus interchange would be a complex endeavour given its integration with the Box Hill Shopping Centre and would require input from the Department of Transport, Vicinity Centres (the shopping centre operator), Whitehorse City Council and potentially other transport agencies.

The IAC concluded that the "EES did not provide adequate assessment of the impacts of the project on the Box Hill Bus Interchange. Consequently, pedestrian modelling of the route up to the bus interchange deck should be undertaken to determine the need for any upgrade works, to ensure there is a modern and efficient interchange with the new rail service."³⁹ It is appropriate this work is undertaken during the detailed design phase and I support the IAC's recommended revision to EPR T8 accordingly.

Shared use path connections

The project seeks to encourage more people to walk or cycle to SRL stations. Submitters identified a lack of safe and connected pedestrian and cycling networks as a barrier to achieving this aspiration.

The project includes improvement to local walking and cycling connections within the SRL station environs and provision of bicycle parking. I also expect that new and improved shared use paths beyond station environs will be important for future precinct planning and desirable to achieve the mode shift aspirations.

I offer the following responses to the IAC's recommendations about shared path connections at the following locations.

Cheltenham SRL station. I support the IAC's conclusion that connecting pedestrians across Nepean Highway is important to assist the project to meet its transport objective of connectivity and the project should include a convenient and safe crossing facility in the vicinity of Enright Street. The SRL Cheltenham station, Bay Road Pedestrian and cycle bridge will also be a critical link between it and both the Southland station and the C1 cycling commuter link. The bridge needs to be wide enough to accommodate both uses and I support the IAC's finding that the Cheltenham Surface and Tunnel Plan should be modified to show a wider northern entry to the pedestrian and cycle bridge over Bay Road.

Monash SRL station. The IAC found that "assessment of cycle flows along Normanby Road and pedestrian flows into Monash University beyond Normanby Road should be undertaken to inform the need for works within the campus, the location of the station entry (option A) and design of Normanby Road/Scenic Boulevard/Howleys Road intersection."⁴⁰ I support this intent being included in EPR T8.

Burwood SRL station. The IAC found that "the project should be expanded to include an upgrade to the Gardiners Creek Trail on the north side of Burwood Highway within the Project boundary."⁴¹ The IAC heard

³⁹ IAC Report 1, p. 231.

⁴⁰ IAC Report 1, p. 225.

⁴¹ IAC Report 1, p. 229.

that the path slopes steeply at its juncture with Burwood Highway, the steepness of the slope is not compliant with relevant standards and the upgrade is expected to be within the project boundary, which extends approximately 40 metres north of Burwood Highway. I support the IAC's finding that this upgrade is necessary and should be included in the project.

Box Hill SRL Station. The IAC made a finding in relation to the Box Hill SRL station that "connections to both the Box Hill to Ringwood C1 strategic cycling corridor and Box Hill to Hawthorn C2 strategic cycling corridor should be included as part of the Project."⁴² In response to Whitehorse City Council's submission, SRLA supported provision of cycle infrastructure along Linsley Street to join the Box Hill to Ringwood path. I recommend that a connection to the Box Hill to Ringwood C1 strategic cycling corridor should be included in the project. However, in relation to the connection to the Box Hill to Hawthorn C2 strategic cycling corridor, the IAC noted delivery of this link is complex and may require land acquisition, utility relocation and rail disruption. Given these complexities, I consider that the delivery of the connection to the C2 strategic cycling corridor is best delivered through a precinct planning process, subject to consultation with stakeholders and the community. I recommend the Department of Transport and SRLA further progress planning for this cycling connection.

Glen Waverley SRL Station specific issues

The project allows for a future underground connection to the existing Glen Waverley Station, but this is not proposed as part of the project, nor is undergrounding or lowering the existing station and its associated rail lines. Monash City Council submitted that lowering the existing rail line and station has been a long-held policy of council to facilitate the construction of a 'ring road' by extending Myrtle Street northwards across the existing rail line. I do not consider that it has been demonstrated that the lowering of the existing rail line and station is needed to achieve the transport objectives of the project at this time and I note that the project is suitably 'future proofed' to not preclude it from being delivered in the future.

The project proposes to close Coleman Parade between Myrtle Street and Kingsway to create a pedestrian plaza that would connect the Glen Waverley SRL station with the existing bus interchange, the rail station and the activity centre to the north. During construction, Coleman Parade, Glendale Street and Montclair Avenue are proposed to be closed for the duration of the main construction works (6 years).⁴³

The closure of Coleman Parade during construction and its permanent closure during operation was predicted to result in higher levels of vehicle traffic using the Kingsway shopping and dining strip. While SRLA's transport witness gave evidence that the increase in traffic would be modest and within the functional capacity of the road, Monash City Council was concerned that this increase in traffic would impact on the amenity of Kingsway⁴⁴ in a manner that is in conflict with the Council's strategic planning vision.⁴⁵

SRLA's transport witness gave evidence that measures could be implemented to manage demand or pursue demand decreases along Kingsway for instance, a phasing adjustment at the Coleman Parade Kingsway intersection, attenuation devices to maintain a slow speed environment and/or an increase to the intersection capacity at the Springvale Road intersection.⁴⁶ These mitigations could be implemented ahead of and/or during the construction phase. In addition, SRLA's transport witness recommended that the location of pick-up and drop-off parking be reviewed during detailed design due to traffic generation effects.⁴⁷

⁴² IAC Report 1, p. 233.

⁴³ Traffic and Transport Impact Assessment p. 224.

⁴⁴ Tabled document 345.

⁴⁵ Tabled document 294, p. 14.

⁴⁶ Tabled document 345, p. 52.

⁴⁷ Tabled document 345, pp. 54-55.

The IAC considered that the closure of Coleman Parade would come at the disbenefit of the Kingsway area and bus route 737, and that Kingsway would need a significant redesign to cater for the increase in traffic.

In regard to the construction impacts, I support the IAC's finding in principle that "construction should seek to minimise the duration of the closure of Coleman Parade and maintain at least some traffic flow whenever possible."⁴⁸ The construction period will be lengthy and I expect SRLA's contractors will seek to minimise closures of Coleman Parade during construction where there is benefit in doing so. I support in principle the IAC's recommended revision to T3 that would require construction management plans to be developed to minimise as far as practicable the time needed to temporarily or partially close roads and paths, but subject also to consideration of whether the plans would be consistent with the TMP and its objective to minimise disruption.

In regard to the operations phase, the IAC found that Coleman Parade should not be permanently closed as part of the project. It considered that pedestrian connection across Coleman Parade could be facilitated both at-grade or underground without permanently closing the road and these options should be further investigated prior to a commitment to close Coleman Parade to vehicle traffic. It also considered that future precinct planning will need to consider the whole of the activity centre and determine how best to manage vehicle and pedestrian demands to ensure a safe and accessible pedestrian environment for traders and users. In my assessment, the optimum means to deliver the urban design and pedestrian connectivity vision for the Glen Waverley SRL Station whilst minimising traffic impacts on Kingsway, is still to be determined. I note that the operational phase of SRL is some way off. I consider that the detailed design phase is the appropriate time to examine pedestrian connection and fine tune mitigation measures that could be implemented to address local transport effects. I therefore recommend that the surface and tunnel plan for the Glen Waverley SRL station be amended to show that the closure of Coleman Parade is indicative only, and for further consideration at the time of the preparation of the UDLP. When the UDLP for Glen Waverley is submitted for the Minister for Planning's approval under the SCO14 Incorporated Document, I expect that it will either propose that Coleman Parade remain open in some form, and/or it will be accompanied by additional transport assessment which further examines the implications of closing Coleman Parade and proposes traffic mitigation measures for Kingsway.

The project construction site at Glen Waverley will result in the need to replace over 300 parking spaces. It is understood that these parking spaces service the Kingsway shopping area and loss of parking would in turn impact on these traders. The IAC agreed with SRLA's transport witness that further assessment is required to determine the ultimate location of the replaced car park to best meet the needs of the activity centre. I support this finding and the IAC's recommended amendments to EPR B5.

I note the Department of Transport's contention that "Ultimately, the department considers that the precinct planning process for Glen Waverley represents an obvious and appropriate opportunity to consider the future urban structure of the Glen Waverley Activity Centre, including what changes, if any, should be made to associated transport infrastructure."⁴⁹ I expect SRLA and the Department of Transport will progress the surface level transport planning for the Glen Waverley precinct as further detailed planning for the project and precinct planning progresses.

Clayton SRL Station specific issues

The project proposes to close the Carinish Road western approach to the Clayton Road intersection to create a public realm and pedestrian zone to connect the Clayton SRL station to the existing Clayton Station and the broader activity centre to the north. A paid pedestrian connection between the SRL station and the existing station elevated platform would also be provided via travellators/lifts and an elevated

⁴⁸ IAC Report 1, p. 227

⁴⁹ Tabled document 759, p. 4.

walkway. During construction, Carinish Road would be closed between Clayton Link Road and Clayton Road.

The IAC heard concerns that the redistribution of traffic due to the closure of Carinish Road during construction and operation could impact on the amenity of local residential streets around the Clayton SRL station. The IAC found that this road closure would have significant impacts on accessibility of the area and create convoluted access arrangements to reach and depart the SRL station by car. The IAC did not support the closure of Carinish Road.

SRLA's transport witness advised the IAC that modelling showed there would be sufficient capacity on local roads for traffic to be diverted around the SRL station, noting the EES showed that traffic will increase on Madeleine Street, Shandean Avenue and Prince Charles Street. Some traffic would also be diverted from the area to Wellington Road.

Monash City Council agreed there are many benefits to the permanent closure of Carinish Road, although raised concerns about its closure if significant traffic impacts cannot be mitigated. SRLA in reply agreed that there would be benefit in exploring alternate access arrangement into and out of the station precinct and SRLA undertook preliminary investigations of various options.⁵⁰ Of the options investigated, a right turn at Shandean Avenue to Clayton Road was considered potentially feasible and worthy of further investigation. SRLA proposed to investigate this as part of the design development process.

In regard to the construction phase, the IAC found that "a temporary closure of Carinish Road is required to construct the pedestrian access adit, but the design and construction method should seek to minimise duration of that closure."⁵¹ I support the IAC's recommended revision to EPR T3 that would require construction management plans to be developed to minimise as far as practicable the time needed to temporarily or partially close roads and paths. I also note the IAC's observation that shifting the station box slightly north could reduce the length of time that Carinish Road would need to be closed during construction and this opportunity should be investigated to minimise local impacts. This is a matter that SRLA should consider.

In regard to the operation phase, I share the IAC's concerns about unresolved transport network arrangements and traffic impacts in the Clayton SRL station surrounds. In my assessment, the optimum means to deliver the urban design vision for the Clayton SRL station and functional road network arrangements is still to be determined. I consider that the detailed design phase is the appropriate time to investigate alternate access arrangements and fine tune the design to address local transport effects. I therefore recommend that the surface and tunnel plan for the Clayton SRL station be amended to show that the closure of Coleman Parade is indicative only and for further consideration at the time of the Urban Design and Landscape Plan. The transport network arrangements in the Clayton SRL station surrounds will need to be further examined and resolved during detailed design and any related future precinct planning. When the UDLF for Clayton is submitted for the Minister for Planning's approval under the SCO14 Incorporated Document, I expect that it will be accompanied by a transport assessment which addresses the optimum arrangements for access to the SRL station as well as any changes or mitigation measures to surrounding local roads.

Heatherton Stabling Facility specific issues

A key transport impact of the Heatherton Stabling Facility is the closure of Old Dandenong Road and the changes to local accessibility for the Heatherton community. The IAC heard from residents that Old Dandenong Road is commonly used to access the Elder Street South underpass, which provides a connection under the Dingley Bypass for residents to reach local shopping facilities in Clarinda. The IAC

⁵⁰ Tabled document 712, pp. 8-10.

⁵¹ IAC Report, p. 223.

noted that a five-minute, one-way journey to the local shop will become a 10-minute journey, and this will add to other impacts on this community resulting from the project.

The IAC found that “to minimise the increase in travel time, a local alternative turning facility should be provided to replace the lost right turn movement from Old Dandenong Road into Kingston Road. This should be provided prior to the closure of Old Dandenong Road.”⁵²

SRLA tabled traffic engineering assessments indicating that the provision of a right turn at the Dingley Bypass and Kingston Road intersection (northwest to west movement) could reduce traffic performance on the Dingley Bypass, a major strategic road connection in Melbourne’s southeast. SRLA’s transport witness considered that the level of investment would not be warranted given the low volume of traffic using this right turn and the extent of change required to accommodate it. Kingston City Council sought the retention of Old Dandenong Road or a new U-turn facility on Kingston Road to replace the lost right turn movement and minimise traffic impacts on residents.

I support the IAC’s finding in principle, but I note that there is uncertainty associated with the location and the feasibility of a local U-turn facility. I recommend that opportunities be identified to address reduced connectivity created by the closure of Old Dandenong Road, appropriately informed by a traffic assessment, and that a reasonably practicable approach be implemented to mitigate effects on the Heatherton community. I recommend a revision to EPR T4 should be made accordingly.

The IAC also heard that there would be an increase in trucks on Kingston Road associated with the project. This increase could heighten pedestrian safety concerns on Kingston Road, and traffic experts agreed that the pedestrian network would benefit from a crossing near Pietro Road, to help connect the shared use path networks and improve access to bus stops on Kingston Road. I support the IAC’s finding that a pedestrian crossing should be provided on Kingston Road to mitigate construction impacts and improve safety for pedestrians and public transport users.

The IAC considered the accident history of Kingston Road and the safety implications of additional construction access points for the stabling facility site. The IAC concluded that additional heavy vehicle movements during construction will have “a significant effect on road safety in the vicinity of the site.”⁵³ The IAC also heard that the current road width is not sufficient to be marked as four lanes given the very high volume of trucks and use of the road by B-double trucks.

The IAC’s finding that “Kingston Road should be widened to four lanes outside the stabling facility to mitigate construction traffic impacts and improve road safety”⁵⁴ appears to have merit however I note that this proposal has not been subject to traffic assessment or consideration by traffic experts. Widening of this road could also potentially give rise to other undesirable impacts. Hence, in response to recommendations of the IAC, I recommend that EPR T3 direct that a traffic assessment be undertaken and that road upgrades, or other mitigations, be evaluated on their ability to improve road safety performance on Kingston Road. The option to utilise the stabling facility frontage along Kingston Road to widen the road should be part of this analysis but I note that expectations about appropriate landscaped visual buffers would also need to be taken into account. I recommend amending EPR T3 to make specific reference to this evaluation.

Assessment

It is my assessment that to deliver this significant investment in public transport infrastructure that is of benefit to the state, there will be adverse effects on the transport network that will need to be carefully managed.

⁵² IAC Report 1, p. 217

⁵³ IAC Report 1, p. 219.

⁵⁴ IAC Report 1, p. 220.

Further, it is my assessment that:

- the adverse transport effects can be acceptably managed through the PSA, EMF, EPRs, UDS and UDLs with amendments as recommended in this assessment; and
- further detailed transport assessment and design refinements will occur during the detailed design phase and precinct planning where appropriate, to further optimise the delivery of competing functional objectives, including those related to connectivity, walkability and accessibility, when the project opens in 2035. The EPRs and UDS will provide sound guidance to deliver these objectives during the detailed design phase.

My responses to the IAC's recommendations on transport effects are as follows.

- I agree with the intent of the findings of the IAC in relation to the following, but further analysis and consultation will need to be undertaken as to the feasibility and form of the following:
 - widen Kingston Road to a four-lane road along the full frontage of the site, prior to using access gates on Kingston Road; and
 - provide a permanent local alternative to accommodate the right turn demand from Old Dandenong Road north approach into Kingston Road, prior to the closure of Old Dandenong Road, that minimises the increase in travel time.
- Further work is needed during detailed design to optimise the quantity and locations of pick-up and drop-off parking and bus interchanges. I support the IAC's finding that owing to the unresolved nature of these elements, they should be removed from the surface and tunnel plans. The EPRs and UDS will provide an appropriate framework to guide their resolution.
- Further work is needed during detailed design to consider whether the permanent closures of Carinish Road at the Clayton SRL station and Coleman Parade at the Glen Waverley SRL station represents the optimal transport network arrangements in these precincts. I recommend that the surface and tunnel plans are revised for these locations noting that the closure of these roads is indicative and to be further considered.
- I support all other recommendations made by the IAC in relation to the traffic and transport EPRs, the surface and tunnel plans and the UDS as it pertains to traffic and transport matters.
- I encourage the Department of Transport and SRLA to progress planning for the paid connections in Box Hill, the bus interchange at Box Hill and needed improvements to cycling connections in precincts, particularly at Cheltenham, Burwood and Box Hill to ensure that mode shift to cycling is achieved.

6.2 Noise and vibration

Noise and vibration effects are addressed in Chapters NO and VI and Technical Appendices C.1, C.2, S.1 and S.2 of the EES and in Chapter 6 of the IAC Report. SRLA proposed 16 EPRs to deal with noise and vibration. Five of these, plus two new EPRs, have been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise air quality, noise and vibration effects on the amenity and health of nearby residents and local communities and protect sensitive infrastructure.

Assessment context

Overview

Noise can be one of the most pervasive impacts from large-scale construction projects in built-up areas. The impact of changes in the noise environment differs according to the proximity of noise sources to sensitive receivers; the vulnerability of those receivers; the timing, frequency and duration of the works; and the character of the noise and vibration emissions. Impacts can include reduced amenity, nuisance, sleep disturbance and impacts on mental health and wellbeing. Noise may be experienced by receivers

near the project as airborne noise or ground-borne noise. The project will generate noise and vibration during construction and operation as summarised below.

The key sources of airborne noise during construction will be construction activities at surface-level locations, including the excavated station boxes, the stabling facility and tunnel portals, Emergency Support Facility and Burwood substation. There would also be short-term noise emissions from ground improvement works in Kingston and Monash local government areas to stabilise soils prior to excavating tunnel cross passages. Ground-borne noise and vibration may be caused by construction equipment such as tunnel boring machines, hydraulic hammers and rollers.

During operation, the key airborne noise sources are activities at the stabling facility, trains operating on the mainline rail between tunnel portals at the stabling facility, and noise from fixed infrastructure and ventilation fans at SRL stations and the tunnel portals. Ground-borne noise and vibration from trains moving through the tunnels may be experienced by people above the alignment.

Relevant legislation and standards

The duties under the Environment Protection Act apply to the project, including the general environmental duty and the requirement that a person must not emit an unreasonable noise, or permit an unreasonable noise to be emitted, from a non-residential premise.⁵⁵

The general environmental duty was described in Section 3.3 Relevantly for noise, the state of knowledge to inform what is 'reasonably practicable' includes the Environment Reference Standard made under the Environment Protection Act and EPA guidelines.

The key standards and guidance that apply or have been adopted for managing the noise and vibration impacts of this project are as follows.

- Construction noise:
 - EPA publication 1834 Civil construction, building and demolition guide.
- Operation noise:
 - fixed plant – EPA publication 1826.4 Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues (the Noise Protocol); and
 - train operation – Victoria's Passenger Rail Infrastructure Noise Policy (PRINP).
- Vibration and ground-borne noise:
 - human comfort – British Standard BS6472:2008, Guide to evaluation of human exposure to vibration in buildings (vibration sources other than blasting);
 - damage to buildings and infrastructure – British Standard BS7385-2:1993, Evaluation and measurement for vibration in buildings, guide to damage levels from ground-borne vibration; and
 - damage to buildings and infrastructure – German Standard DIN4150-3:2016, *Structural vibration part 3: effects of vibration on structures*.

The proposed EPRs for noise and vibration are based on these standards and guidance. Construction noise and vibration is to be managed in accordance with the construction noise and vibration management plan required by EPR NV3 and informed by EPRs:

- NV1, which sets out a framework for minimising construction noise and vibration impacts to sensitive receivers;
- NV2, which provides a framework for minimising out of hours construction works and their impacts;
- NV4, which includes reference levels for non-residential noise sensitive receivers;

⁵⁵ Environment Protection Act, s 166.

- NV5 and NV7, which include vibration reference levels for protection of infrastructure such as utility assets and structures;
- HH4, which sets out monitoring and management of potential vibration impacts on heritage places;
- NV6, NV8 and NV9, which set out reference levels for ground-borne noise and vibration impacts on amenity;
- NV10, which sets out noise reference levels for sensitive research facilities;
- NV11, which requires the construction noise and vibration management plan and all practicable management measures to be informed by further modelling and monitoring; and
- NV15, which sets out reference levels for vibration-sensitive equipment such as laboratory equipment.

Noise and vibration impacts from project operations are to be managed in accordance with the following EPRs:

- NV5 and NV7, which provide for protection of utility assets and structures from vibration;
- NV10, which provides for protection of sensitive research facilities from operational noise and vibration;
- NV11, which provides for modelling, monitoring and reporting of noise and vibration;
- NV12, which sets out investigation thresholds for airborne rail noise;
- NV13 and NV14, which set out ground-borne noise and vibration reference levels;
- NV15, which sets out reference levels for vibration-sensitive equipment; and
- NV16, which relates to noise from the stabling facility, SRL stations and fixed plant.

Discussion

Construction airborne noise

The project is to be constructed in an urbanised setting with residential and mixed-use land uses, where existing noise consists of road and rail traffic noise, as well as commercial and industrial noise. At times, construction noise is predicted to be above relevant standards after all reasonably practicable measures have been applied on-site to minimise noise and vibration at the source. Where this is the case, off-site measures will be applied in accordance with SRLA's residential support guidelines for the project. Given the location of the project and the generally long duration of construction works (six to eight years), construction noise is a key source of potential impact for this project. Construction noise levels during normal working hours are expected to exceed the reference levels in the residential support guidelines for triggering off-site mitigation measures at receivers generally within a few hundred metres of the works. Exceedances would be most likely during site establishment works for short, intermittent periods of several weeks and would reduce after about four months as works move deeper into the excavated sites.

Some residents and business owners will experience these effects more than others due to their proximity to the works, such as residents living adjacent to the construction of the Box Hill SRL station.

EPA Publication 1834 provides quantitative criteria for works on Sundays, public holidays and during the evening and night periods, but does not specify criteria for normal working hours (i.e. 7am to 6pm). The guide seeks that works are kept to normal working hours and that noise and vibration be minimised as far as possible in all situations. However, low-noise impact works, managed-impact works and unavoidable works may occur outside these hours.

There was considerable discussion during the IAC hearing about the utility of including reference levels in the EPRs and whether they were required in the context of the general environmental duty. The EPA submitted that it did not support specifying 'acceptable' construction noise levels and that the general environmental duty requires proponents to take a proactive approach to minimising noise. In response to questions from the IAC and councils, SRLA's noise expert witnesses had no objection to publishing

construction noise benchmarks in the EPRs, but also considered the general environmental duty alone would suffice.

The IAC was concerned about the lack of specified benchmark levels for in the EPRs. Although it disagreed with quantitative levels, the EPA said quantifiable levels may be used in certain circumstances; however, they should not be used as acceptable levels one can pollute up to, but rather as reference levels 'above which the risk of harm increases.'⁵⁶ The IAC questioned how a contractor can decide whether there is a risk of harm in the absence of specified reference levels. The IAC also heard from the noise expert giving evidence on behalf of Kingston City Council, Whitehorse City Council, and Deakin University that the EPRs should capture all relevant requirements rather than referencing other documents.⁵⁷ The IAC recommended the inclusion of the reference levels proposed by the councils, and noted that the levels proposed are consistent with those for the Metro Tunnel Project and North East Link Project.

I support the IAC's recommendation to include reference levels in EPR NV1, subject to minor changes for greater clarity around their role, not as hard limits, or as 'acceptable' levels to which to emit noise up to, but as reference levels above which there is an increased risk of harm, and noting that the general environmental duty applies in addition to the reference levels being specified, with effect that noise should be driven down below the reference levels where reasonably practicable. The inclusion of reference levels will assist SRLA and its contractors to more clearly understand the potential risk of harm from construction noise. I acknowledge that the general environmental duty will ultimately drive the management of construction noise and vibration but, as we are in the early days of its application, I support reference levels for SRL East to provide comfort to residential communities that impacts will be managed consistent with recent major projects (at a minimum). I note that the table notes in EPR NV1 seek to make it clear that the reference levels are not intended to be compliance levels, but I am concerned that it would be possible to interpret or understand the recommended wording within the table as suggesting that they are. Therefore, I recommend changes to EPR NV1 to remove this potential ambiguity and clarify they are not intended to be hard limits or levels to emit noise up to. I note that reference levels are also captured in SRLA's residential support guidelines as trigger levels for off-site mitigation measures and I support this approach.

I support the IAC's recommendation to include the reference levels proposed by council in EPR NV1 for weekend/evening works, subject to the following change: amend the wording to make them consistent with EPA Publication 1834 (i.e. background +10dB(A) for the first 18 months and background +5dB(A) after 18 months).

I note that the IAC's recommended drafting of EPR NV1 specified a reference level of background +5dB(A) from the commencement of construction for weekend/evening works, whereas the noise levels in Table 4.3 of EPA publication 1834 are background +10dB(A) for the first 18 months and background +5dB(A) after 18 months for weekend/evening works. Whitehorse City Council submitted that a table of maximum noise reference levels to be prescribed by the construction noise vibration management plan required by EPR NV3 should be included in EPR NV1 for several reasons, including because it would assist members of the public to understand what was applicable⁵⁸ and also sought that NV1 and the residential support guidelines should both have a background +5dB(A) level at all times⁵⁹. As noted above, I agree that a table of reference levels should be included in EPR NV1, and I consider that the reference levels in the EPRs and the residential support guidelines should be the same. Noting that the IAC recommended version of EPR NV2 refers to the levels in EPA publication 1834 for weekend/evening periods, and that the IAC's proposed residential support guidelines also contain the noise levels from EPA publication 1834 for weekend/evening

⁵⁶ Tabled document 434, p. 18.

⁵⁷ As noted by the IAC, IAC Report 1, p. 60.

⁵⁸ Tabled document 471, pp. 58-59.

⁵⁹ Tabled document 749, p. 54 and tabled document 753, p. 8.

periods, I recommend changes to EPR NV1 to ensure the reference levels for weekend/evening works are consistent with those in EPA publication 1834.

Councils and other submitters requested access to real-time construction noise monitoring data. SRLA advised that this data is collected to inform contractors about construction noise that needs management and was concerned that publishing this data could be misleading as it would not be verified in real-time. The IAC supported its publication with appropriate disclaimers and explanations for residents and felt that the risks of misinterpretation could be limited by appropriate communication between contractors and communities and agreed with Whitehorse City Council that it would aid transparency and accountability for managing impacts during construction.

The IAC recommended changes to EPR NV3 to require publication of real time construction noise monitoring data on a publicly available project website supported by an explanation of data limitations. I support this for a trial period of twelve months for the independent environmental auditor to assess its utility in assisting the community.

Construction noise at Box Hill SRL Station

Construction of the Box Hill SRL Station will involve extensive excavation works in close proximity to a number of high-density residential dwellings that will require additional mitigation measures relative to other sites.

Whitehorse City Council recommended broadening the off-site mitigation measures proposed in SRLA's residential support guidelines, including offering acoustic treatment, alternative accommodation and voluntary acquisition. SRLA advised that acoustic decking between Elland Avenue and Irving Avenue was reasonably practicable and could be provided progressively during excavation, providing noise attenuation of up to 10 dB(A).

1 Elland Avenue, Box Hill is a multistorey building with apartments and a hotel that abuts the Box Hill SRL Station construction site. Nineteen submitters from this building requested acquisition of their properties due to potential loss of amenity. The IAC supported a voluntary acquisition scheme for affected residents of 1 Elland Avenue as it found that the noise impacts in this area would be significant for a long time before the addition of decking. More broadly too, the IAC recommended a new EPR SC7 to provide for a voluntary acquisition scheme for residential properties with the potential to experience significant amenity impacts. Section 6.8 discusses the IAC recommendation relating to voluntary acquisition (EPR SC7) and my response. Businesses that are not acquired will also be impacted by noise from construction. Section 6.5 discusses the IAC recommendation relating to voluntary acquisition of businesses (EPR B8) and my response. In summary, I support a voluntary acquisition scheme, which I expect will mitigate noise impacts to affected receivers in Box Hill.

It is also the case that the general environmental duty will apply to noise emissions at Box Hill, with the effect that noise will be required to be reduced so far as reasonably practicable.

Uniting AgeWell aged care facility is located along the northern boundary of the construction site in the Box Hill Gardens. SRLA proposed a new EPR SC6 to provide a framework for minimising disruption and amenity impacts on residents of the aged care facility. The IAC supported the new EPR, which I also support. Implementation of this framework, in consultation with this stakeholder and the involvement of an independent aged-care specialist, can manage impacts to acceptable levels. I also support the intent of the IAC's recommended changes to EPR SC6 to provide a buffer of at least 10 metres between the construction boundary in Box Hill Gardens and the Uniting AgeWell southern fence line.

I am satisfied that the most significant noise impacts at Box Hill during construction will be temporary and that, with effective implementation of the proposed EPRs modified in line with this assessment, construction noise impacts at Box Hill can be managed to within acceptable levels.

Construction ground-borne noise and vibration

Ground-borne noise and vibration can impact amenity and personal comfort, the structural integrity of buildings and utilities or interfere with the operation of vibration-sensitive equipment associated with Monash University, Deakin University, health facilities, CSIRO Clayton and the Australian Synchrotron site. The EES predicted that ground-borne noise and vibration impacts to structures, heritage buildings, utilities and sensitive equipment is not expected. The EES predicted vibration and ground-borne noise from the tunnel boring machines (TBMs) would meet amenity-based guidelines unless these works were undertaken at night. If such night works were required and approved, the TBM could affect amenity at about 40 dwellings along the alignment. Effects at these properties were predicted to last up to 5 days and could exceed the EPR NV8 night-time ground-borne noise amenity guideline of 35dB(A). Management would be undertaken in accordance with SRLA's residential support guidelines.

Site establishment and ground improvement works at SRL stations and the stabling facility could generate perceptible vibration and noticeable ground-borne noise at some dwellings, if approved as unavoidable evening or night works. Short-term amenity disturbance is also predicted at properties across the tunnel alignment if cross passage works are undertaken during the evening or night (if approved as unavoidable works). Impacts would be managed in accordance with the EPRs and SRLA's residential support guidelines. While vibration impacts from construction may be perceptible at some properties, I am satisfied that this will be short-term and generally manageable through EPRs NV5-NV10, NV15 and HH4 and the residential support guidelines.

I also note the agreement between Monash University and SRLA, dealt with at Section 5.2 above.

Operational airborne noise

The key potential sources of airborne noise during operation of the project are rail noise from trains on the mainline rail between tunnel portals at the stabling facility, train and rail management and maintenance at the stabling facility and noise from fixed infrastructure and ventilation fans at SRL stations and the tunnel portals. Airborne noise from train operation in the tunnels will not be discernible as the ground around tunnels provides a barrier to airborne noise transmission.

The EES predicted that airborne noise during operation would mostly be experienced near the stabling facility. Key noise sources at the stabling facility include trains on the above-ground mainline track, train maintenance, a wheel lathe, a test tack, train and bio wash, the tunnel ventilation system fans at the two portals and the substation.

Airborne rail noise from the mainline track was predicted to be below the investigation thresholds in the PRINP for a new rail corridor. Noise from fixed plant was also assessed to be below the relevant noise limits in the Environment Protection Regulations for unreasonable noise, including for all plant at the stabling facility.

Despite these predictions, submitters were concerned about the new noise sources at the stabling facility. SRLA's noise expert gave evidence that rail noise would be heard primarily at dwellings south of Kingston Road. If external PRINP thresholds are not met during operation, then internal thresholds are proposed in EPR NV12. The IAC accepted the recommendations of SRLA's noise peer reviewer for internal noise criteria, which lowered each of the internal noise criteria by 5dB(A). I support this, noting that the lower criteria are likely to be met by achieving the external PRINP criteria, but that they provide additional protection should the external PRINP levels not be met.

There was no dispute among experts during the IAC hearing that operational noise from fixed plant and trains within the stabling facility could meet the noise limits in the Environment Protection Regulations. The IAC Report suggested that in accordance with the general environmental duty, further mitigation measures should be applied at the stabling facility even though the noise limits are predicted to be met. Kingston City Council's noise expert recommended a cumulative assessment of above ground train noise

and other operations noise from the facility and the IAC agreed. I support the IAC's view that noise from the stabling facility should be minimised so far as reasonably practicable, in line with the general environmental duty, and I support the recommendation for a new EPR NV17 requiring a cumulative assessment to inform the mitigation measures at the site.

Operational ground-borne noise and vibration

Trains moving through railway tunnels may be experienced by people above and close to the alignment as ground-borne noise or vibration. Sensitivity to ground-borne noise is higher in the evening and night-time when ambient noise levels are at their lowest and when residents are likely to be sleeping. The potential for impacts differs according to geology, depth of cover above the tunnels and track design. By incorporating high-attenuation and very-high attenuation track form into the design, no operational ground-borne noise and vibration impacts are expected.

Based on the evidence presented in the hearing, the IAC found that the criteria in the EPRs NV13 and NV14 for ground-borne noise and vibration should be made mandatory. I support these changes to these EPRs, noting that the operational ground-borne noise and vibration evidence at the hearing shared the IAC's position.

The IAC also proposed a new EPR NV18 to create contingency measures including voluntary acquisition for non-compliant or unexpected ground-borne noise and vibration during operations. I support the addition of this new EPR. While I agree that the inclusion of mandatory targets in EPRs NV13 and NV14 is the most effective way to achieve compliance by driving track design to prevent non-compliance, EPR NV18 would mitigate the potential effects in the case of unexpected and non-compliant impacts during operation of the project. I note that the proposed EPR NV18 refers to voluntary acquisition and I propose minor changes to the EPR to refer to the voluntary acquisition scheme required by EPR SC7.

Deakin University's noise expert sought a higher attenuation track form to mitigate risks for sensitive equipment at Deakin University. The IAC found that the track form near Deakin had been designed appropriately to minimise impacts from ground-borne noise and vibration as the track alignment is currently located below sporting fields and there is no evidence of any changes for future land uses. I support this finding.

Residential support guidelines

As with other recent major urban transport projects, noise and vibration is a key issue, as evidenced by the number of proposed noise and vibration EPRs. In addition, SRLA has developed residential support guidelines that would trigger off-site actions to reduce the severity of impacts experienced by residential receivers. In line with the general environmental duty, these actions would be offered after all reasonably practicable on-site measures have been implemented to minimise noise and vibration at the source. Off-site measures in the guidelines include offers of respite, acoustic treatment of buildings and consultation with the community.

The IAC heard some discussion that the guidelines had been informed by similar guidelines used in relation to the Metro Tunnel Project and found that there was no evidence of any community consultation to investigate the success or otherwise of those measures. The IAC recommended that implementation of the residential support guidelines be continually monitored for effectiveness and community acceptance and modified as necessary. I support this recommendation.

The IAC agreed with submitters that recommending that residents wear earplugs in their own home is not reasonable, particularly given construction will span many years in some locations. I agree with the IAC's recommendation that all reference to ear plugs as a mitigation measure should be removed from the guidelines. Whilst the IAC considered noise cancelling headphones may have some benefits over earplugs, it nonetheless also considered that use of headphones would also be of limited utility. I accept this finding.

Assessment

It is my assessment that:

- the EES assessment of noise and vibration impacts of the project was adequate, subject to validation modelling required by EPR NV11 to inform the construction noise and vibration management plan and detailed design; and
- noise and vibration impacts will be experienced by all receivers near construction sites, but the compliance and management framework provided by a combination of the relevant duties under the Environment Protection Act, the EPRs and the residential support guidelines (as modified in line with my recommendation in this assessment), will ensure construction and operation impacts can be effectively managed.

My specific recommendations and responses to the IAC's recommendations on noise and vibration effects are as follows:

- EPR NV1 should be amended as follows:
 - normal working hours - amend the wording to clarify the role of the reference levels as informing the risk of harm; and
 - evening/weekend - amend the wording for consistency with EPA Publication 1834 (i.e. background +10dB(A) for first 18 months and background +5dB(A) after 18 months).
- Amend the proposed changes to EPR NV3 requiring real-time construction noise monitoring data be made publicly available for a trial period of twelve months for the independent environmental auditor to assess its utility in assisting the community;
- Amend new EPR NV18 to include a reference to the voluntary acquisition scheme required by EPR SC7; and
- I support all other recommendations made by the IAC in relation to the noise and vibration EPRs and the residential support guidelines.

6.3 Air quality

Air quality effects are addressed in Chapter AQ and Technical Appendices B.1 and B.2 of the EES and in Chapter 6.2 of the IAC Report. SRLA has proposed two EPRs to deal with air quality and both of these have been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise air quality, noise and vibration effects on the amenity and health of nearby residents and local communities and protect sensitive infrastructure.

Assessment context

Most of the air emissions associated with the project will be generated during project construction. Surface works associated with demolition, earthworks, excavation and spoil management at each of the construction sites have the potential to generate dust (particulates). Depending on the physical size and composition of dust particles, dust emissions can generate health and amenity impacts.

Excavation of contaminated soil has the potential to generate dust, including dust containing contaminants, and odour emissions and affect amenity and human health. During operations air will be discharged from the tunnel ventilation system through vents and portals and may contain small amounts of dust particles from train wheels, brakes or maintenance works in the tunnels.

As noted in Section 5.2, the general environmental duty requires that any person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste

must minimise those risks, so far as reasonably practicable.⁶⁰ In relation to air quality, this involves demonstrating that the risks of harm to human health or the environment from air emissions associated with the project have been avoided or eliminated so far as reasonably practicable. Where it is not reasonably practicable to eliminate risks of harm to human health or the environment, the risks must be reduced so far as reasonably practicable.⁶¹ The Environment Reference Standard, made under the Environment Protection Act, sets out the environmental values, indicators and objectives of the ambient air environment.

Discussion

The key air quality impacts examined by the EES relate to the generation of dust and odour emissions during project construction and their potential to affect the health and amenity of nearby sensitive receivers. Air quality modelling was conducted as a part of the EES to predict how the project will impact on receivers (in combination with background concentrations of emissions). The EES also considered the potential for discharges from the tunnel ventilation system to impact on air quality.

Air quality modelling was also used to predict how the project will contribute to background concentrations of dust emissions during construction. Based on the information contained in the EES and presented to the IAC, I am satisfied that the air quality modelling presented was fit for purpose.

Construction

Dust emissions

Construction of the project will generate dust for many years. These dust emissions have the potential to generate health and amenity effects for nearby residents and business owners. Some residents and business owners will experience effects more than others due to their proximity to the works such as residents living adjacent to the construction of the Box Hill SRL station. With some additional mitigation measures at Box Hill and at the Heatherton Stabling Facility, I am satisfied that the effects of dust can be adequately managed by the EMF.

Construction of the Box Hill SRL station will involve extensive excavation works in close proximity to a number of high-density residential dwellings. Due to this, additional mitigation measures are required at Box Hill compared to other sites, to manage dust emissions. The EES indicates that these may include partial decking over the station box excavation and construction of a shed over the stockpile. The IAC expressed concern that decking over the station box could only be applied once excavation works reached 10 metres. I share this concern. It noted that this would represent approximately half of the full depth of excavation adjacent to 1 Elland Avenue, the closest high-density residential building to these works.

While the IAC was satisfied that dust mitigation measures proposed in Box Hill were acceptable, the higher risk profile of this area influenced its recommendation that a voluntary acquisition scheme be introduced for residential properties (EPR SC7). I agree with the IAC that introduction of a voluntary acquisition scheme is warranted where residents have the potential to experience significant effects on amenity over an extended period of time. To this end, I support the intent of EPR SC7 but consider that defined criteria would need to be satisfied, for residential properties to be eligible for voluntary acquisition and that this should be made clear. Section 6.8 (social and community) discusses the IAC's recommendation further and my response.

Implementation of a responsive and timely process for resolving community complaints during construction of the project will be critical to building community confidence in the controls to manage dust and other potential amenity effects. The IAC recommend changes to EPR EMF4 to include additional protocols for responding to amenity related community complaints. I support this recommendation as it

⁶⁰ Environment Protection Act, s 25(1).

⁶¹ Environment Protection Act, s 6.

will assist in improving transparency and ensuring that community complaints are responded to in a timely manner.

Excavation of contaminated soil

The EES predicted that buried waste contaminated with hydrocarbons is likely to be encountered during construction at Cheltenham, from the former Highett Gasworks. There is also potential to encounter contaminated soil at the Heatherton stabling facility site, as it was formerly a quarry and landfill, and is also in close proximity to other closed landfills.

Excavation of hydrocarbon-contaminated materials at the Cheltenham construction site and potentially contaminated soil at the Heatherton Stabling Facility could lead to problematic odour and dust emissions. These emissions have the potential to generate health and amenity effects for nearby residents and will require careful management.

Construction of the Cheltenham SRL station has the potential to generate odour and dust emissions, including dust containing contaminants, and affect the amenity and health of nearby sensitive receivers. The EES predicts that with mitigation measures in place, communities living in proximity to the Cheltenham SRL Station may notice odour when soil contaminated with hydrocarbons is being excavated. It also found that there is a low risk to human health from odour and from contaminated soil that could become bound to dust emissions during construction of the Cheltenham SRL station.

The IAC expressed concern about some of the mitigation measures proposed by SRLA to manage dust and odour emissions during excavation at the Cheltenham site, noting that certain measures such as staff monitoring were more reactive than proactive. The IAC found that odours can be controlled during construction at the Cheltenham site provided further investigations are performed and a more comprehensive suite of measures is implemented, including potentially a cover tent with its associated collected air treatment.

The IAC recommended a new EPR (EPR C7) to require suitable air cover and treatment controls during excavation works associated with the former gasworks waste fill at Cheltenham. I support the IAC's recommendation. The known contamination associated with the former Highett Gasworks site and proximity of nearby sensitive receivers including Southland shopping centre necessitates additional mitigation to eliminate or reduce potential effects on human health in line with the general environmental duty. Section 6.9 provides further discussion on EPR C7 and my response.

Residents living in proximity to the Heatherton Stabling Facility may also experience odour when earthworks are occurring at this site at the same time as at nearby closed and operating landfills, particularly during windy conditions. The EES found that there is a low risk to human health from odour generated during construction works at this site.

I acknowledge concerns raised in MTTY's submission over the existing management of dust at the Lantrak site and the lived experience of residents in close proximity who report being affected by nuisance dust and concerned about effects on their health. I also acknowledge concerns raised by MTTY in relation to what they perceive as a lack of regulatory oversight and response to community complaints to date about dust management at the Lantrak site.

The IAC raised concerns about the human health impact assessment prepared as a part of the EES. In particular, it expressed concern about the lack of baseline health studies considering the local population in proximity to the stabling facility and the impact of dust from past landfill and mining activities. While I agree that such information would have been useful, as noted in the human health impact assessment limited health information is available at a community or suburb level and this is a limitation for any human health impact assessment.

The IAC recommended a new EPR (EPR C8) which requires that a quantitative human health risk assessment be prepared with a focus on construction of the Heatherton Stabling Facility. I support the intent of this recommendation. In particular, I agree that revised construction dust exposure modelling is warranted once the results of further site contamination and spoil investigations are available for the stabling facility. Section 6.9 provides further discussion of the IAC's recommendation to prepare a human health risk assessment and my response.

Vehicle emissions

Vehicle emissions will be generated during construction, particularly heavy vehicle movements. As heavy vehicle movements are expected to represent a small proportion of the existing traffic, no noticeable increase in vehicle emissions is anticipated from the project.

Air quality monitoring

Construction contractors collect real-time air quality data to trigger dust control measures. Submitters to the IAC, including Monash and Whitehorse City Councils submitted that providing real time publicly accessible air quality monitoring data during project construction would assist in improving transparency and help to reassure the community. The IAC recommended changes to EPR AQ1 to require that real time publicly accessible air quality monitoring data be made available on a project website supported by an explanation of data limitations. It also recommended that verified monthly air quality monitoring data be made publicly available on a monthly basis (EPR AQ1 and AQ2). I support the publication of real time construction air quality monitoring data for a trial period of twelve months for the independent environmental auditor to assess its utility in assisting the community.

Operations

SRLA's air quality expert witness indicated that potential air quality effects during project operations would be associated with the tunnel ventilation system and that additional analysis of these emissions would be required during detailed design.

The tunnels will carry electric trains which generate few emissions. The EES indicates that there is a low probability of air quality impacts from operation of the tunnel ventilation system. While air discharged from the vents may contain small amounts of dust particles the EES predicts that this will only represent an incremental increase compared to background air quality during normal or congested operations.

I acknowledge concerns raised in submissions from MTTY and other community members that dust from the tunnel ventilation system could affect the amenity of nearby residents, potentially staining balconies and window surfaces and other outdoor areas. Some residents in Heatherton already have lived experience of being affected by nuisance dust.

The IAC did not comment on the design of the tunnel ventilation system or its potential to affect air quality. In its submission, the EPA stated that it considers that the tunnel ventilation emissions are low and not classified as a prescribed development activity or prescribed operating activity that would require a licence for air emissions.⁶²

Based on the information presented to the IAC and contained in the EES I am generally satisfied that the tunnel ventilation system can be designed to avoid and minimise air quality impacts.

⁶² Tabled document 434, p. 23.

Assessment

It is my assessment that:

- the implementation of the EPRs relating to air quality, consistent with the recommendations of this assessment, will adequately manage potential air quality impacts during construction and operation;
- amend the proposed changes to EPR AQ1 and AQ2 requiring real-time air monitoring data be made publicly available for a trial period of twelve months for the independent environmental auditor to assess its utility in assisting the community;
- I support the IAC's recommend changes to EPR EMF4 to include additional protocols for responding to amenity related community complaints as it will assist in improving transparency and ensure that community complaints are responded to in a timely manner; and
- I support all other recommendations made by the IAC in relation to the air quality EPRs.

6.4 Electromagnetic interference

EMI effects are addressed in Chapter EMI, Technical Appendices H.1 and H.2 of the EES and Chapter 6.3 of the IAC Report. SRLA has proposed EPRs EMI1A to EMI3 to deal with Electro-Magnetic Interference. The IAC supported the EPRs proposed by SRLA with only minor changes to wording.

Evaluation objective

Avoid or minimise air quality, noise and vibration effects on the amenity and health of nearby residents and local communities and protect sensitive infrastructure.

Assessment context

Electromagnetic emissions will be generated by the project both during construction and operation. The project has been designed to minimise EMI during operation through design and equipment choices. Electro-magnetic emissions generated by the project will have no adverse impacts on human health.

There could be potential EMI impacts on sensitive equipment at Monash University and at other sensitive receivers. The agreement between Monash University and SRLA, and my observations about it, are set out in Section 5.2 above.

MTTY requested, and SRLA accepted, that an independent expert would resolve any disputes regarding the appropriateness of environmental specifications. This addition has been incorporated into the 'Day 4' version of EPR EMI1.⁶³

Discussion

The equipment which may be susceptible to EMI includes medical equipment, scientific facilities and audio recording equipment. Monash University had been identified as an area of high sensitivity however, Monash University and SRLA reached an agreement which removed the concerns of Monash University, as noted above.

A confidential sensitive receiver was identified by SRLA as being at risk of EMI impact. This receiver's details are confidential and the receiver made no submission to the IAC. SRLA provided information to the IAC and based on this information the IAC found that EMI impacts to this receiver will be appropriately mitigated and/or managed.

I support the IAC's finding that potential EMI impacts to sensitive equipment will be appropriately mitigated and managed by the EMI EPRs. I support the IAC's recommended EMI EPRs in principle with wording to be revised as discussed in Section 5.2.

⁶³ Tabled document 796.

Assessment

It is my assessment that potential EMI impacts to sensitive equipment will be appropriately mitigated and managed by the EMI EPRs with revisions as recommended in Section 5.2.

6.5 Business and retail

Business and retail effects are addressed in Chapter BR and Technical Appendices E1 and E2 of the EES and in Chapter 8 of the IAC Report. SRLA has proposed seven EPRs to deal with business and retail effects. Four of these EPRs have been the subject of recommendations by the IAC and two new EPRs (B8 and B9) have been recommended by the IAC.

Evaluation objective

Avoid or minimise adverse effects on businesses include upon their functionality, access to services and facilities provided by businesses and on the retail economic environment.

Assessment context

The project proposes to construct above ground stations at six locations, most of which are within established activity centres. Land within these centres will be acquired and existing buildings demolished to allow for the construction of the stations. It is the nature of these types of projects that stations should ideally be located in the centre of established activity centres, to allow future users to easily access these centres. However, to construct the stations, high-value and high-profile land within the centre of the activity centres is needed. The high value nature of the land required usually means that the land is already occupied by businesses that are subsequently displaced. Projects of this nature also typically have long construction phases, which means a long period of construction impacts, such as amenity and access issues, to these centres and to the businesses that remain within the centre.

There is no ideal construction outcome that would entirely mitigate these adverse impacts and so the project must seek to manage the impacts as sensitively as possible. Once the project is in operation there will be significant benefits that will improve the long-term attractiveness and viability of the activity centres that surround the proposed train stations.

All of the sites will be adversely impacted during construction with varying levels of impact between planned commencement in 2022 until planned completion in 2035. The EES states that the project will acquire 150 commercial properties across nine sites, and 72 (48%) of the acquired commercial properties will be located in Box Hill.

Key adverse business impacts created by the project are:

- property acquisition and the need for business relocation; and
- loss of viability of businesses during construction due to impacts such as amenity and access issues.

Impacts on the businesses during construction will include amenity impacts, loss of customers and visitors to the activity centres due to loss of car parking or their reduced attractiveness, road closures, constrained access for both visitors and deliveries and other disruptions. These construction impacts will be particularly impactful in Box Hill, Glen Waverley and Clayton.

Discussion

The ongoing operation of the project will have significant positive impacts on the impacted activity centres, but during the long construction phase there will be significant adverse impacts on business in these activity centres. These impacts relate to business displacement, property acquisition, amenity and access impacts of construction and potential impacts on businesses that remain within the activity centres.

SRLA has proposed EPRs and support guidelines, in the form of the business support guidelines and the business and residential relocation support guidelines, to mitigate and manage the impacts of the project on business. There is no ideal method to fully mitigate the impacts of the construction phase, but I consider that the project will achieve an acceptable level of mitigation and will provide appropriate management of impacts through the EPRs and support guidelines.

I support the IAC's finding that the project will have significant positive impacts on businesses during the project's operation and that adverse impacts of construction can be mitigated and managed to a satisfactory level. I support the recommendations made by the IAC in principle, with some amendments that I detail below.

Cheltenham SRL Station

Four commercial properties will be acquired at the Cheltenham SRL station. Submitters raised concerns about disruption to remaining businesses during construction, including to Southland shopping centre, the location of proposed linkages between Southland and the Cheltenham SRL Station and a lack of clarity around property acquisition. I support the IAC's finding that the relevant EPRs and support guidelines will effectively manage any business impacts at Cheltenham.

Heatherton Stabling Facility

Seven commercial properties will be acquired at the stabling facility. Some submitters expressed concerns that the Clarinda shopping centre would be adversely impacted by the closure of Old Dandenong Road. I support the IAC's finding that there will be no adverse impacts on the Clarinda shopping centre from the project.

Clayton SRL Station

Twenty-three commercial properties will be acquired at the Clayton SRL station, with 24 associated businesses displaced. Submitters were concerned about locating suitable replacement sites for displaced businesses to stay within the centre due to the current low vacancy rates and that there will be significant amenity and access impacts associated with construction on remaining businesses, especially those to the north of Carinish Road. This could render some of those businesses unviable.

I accept that there will potentially be a limited number of suitable replacement sites for businesses to relocate within the centre. There is no ideal outcome that will entirely mitigate adverse impacts of the project on the Clayton Activity Centre. I am satisfied that the EES accurately identifies the impacts on the Clayton Activity Centre and that the recommended EPRs, business support guidelines and business and residential relocation support guidelines will manage and mitigate these adverse impacts to an acceptable level.

Monash SRL Station

Thirty-three commercial properties are proposed to be acquired at the Monash SRL station.

As noted above, Monash University and SRLA came to an agreement during the IAC hearing.⁶⁴ Monash Community Family Cooperative Childcare, which is associated with the university, made its own submission that has not been withdrawn.

One submission raised the siting of the Monash SRL station and expressed concern about potential impacts on the research capabilities of the University, which may cause reputational and financial impacts for the Monash National Employment and Innovation Cluster.

⁶⁴ Technical Note 38 (tabled document 479).

The EES also considered issues related to the uplift in land value around the station. This uplift in land value could result in land use change from industrial land uses to higher yield land uses such as retail or commercial uses which would be detrimental for the National Employment and Innovation Cluster. Loss of industrial land across Melbourne is an ongoing concern. The importance of the Monash National Employment and Innovation Cluster is recognised by Plan Melbourne and by the Melbourne Industrial and Commercial Land Use Plan.

I support the IAC's finding that there will be positive impacts on business around the Monash SRL Station, that the potential adverse impacts around the Monash SRL Station, to Monash University and to the Monash National Employment and Innovation Cluster are acceptable and that the recommended EPRs, business support guidelines and business and residential relocation support guidelines will appropriately manage and mitigate concerns.

Glen Waverley SRL Station

Business impacts from construction of the Glen Waverley SRL Station on the Glen Waverley Activity Centre are mainly related to the loss of car parking facilities, amenity and access impacts and business acquisition and relocation. Four commercial properties are proposed to be acquired, with 24 associated businesses proposed to be displaced.

The project will see the removal of approximately 400 existing car parking spaces from the Glendale Street car park to the west of the Kingsway shopping and dining precinct, with SRLA proposing replacement car parking north of the train station and north-west of the bus interchange. Submitters were concerned about the accessibility to the proposed replacement car parking. Local businesses rely on access to adequate car parking facilities. I support the IAC's recommended changes to EPR B5, as discussed in Section 6.1, which includes ensuring that Monash City Council is consulted on replacement car parking solutions.

Section 6.1 above discusses the transport and traffic arrangements for Glen Waverley, and I am satisfied that the arrangements proposed will acceptably mitigate business impacts for Glen Waverley, including for the Kingsway traders, acknowledging that management of traffic along Kingsway is of importance.

Submitters expressed concern that the business EPRs and the business support guidelines were not sufficiently clear and transparent about the support available to businesses. Monash City Council recommended an additional EPR for an employee assistance strategy. As discussed below, I recommend that an employee assistance strategy be incorporated into the EPRs.

I support the IAC's recommended changes to the EPRs to support the ongoing viability of the Glen Waverley Activity Centre. I am satisfied that the EPRs will appropriately manage and mitigate potential adverse business impacts at Glen Waverley.

Box Hill SRL Station

The Box Hill Metropolitan Activity Centre will face significant disruption from the construction of the project. Seventy-two commercial properties will be acquired from the heart of Box Hill and 50 to 60 associated businesses will be displaced. Amenity impacts and access constraints caused by construction activity over a lengthy construction period may also result in loss of business viability for those businesses that remain.

Some submitters expressed concerns that the loss of a significant number of businesses could lead to lasting impacts on the current culture of Box Hill, as well as the loss of the traditional town centre. Many of the businesses to be impacted in Box Hill provide specialist services for the Asian community (for example chemists with Chinese language skills to service customers)⁶⁵. The unique cultural identity and character of businesses in Box Hill attracts customers to the area.

⁶⁵SRL East EES, technical appendix E.1, table 4.2.

Submitters also identified the impacts of lost employment opportunities for the existing employees of impacted businesses. Some submitters were concerned about the transparency and clarity of the property acquisition process, compensation arrangements and the effectiveness of the proposed EPRs, business support guidelines and business and residential relocation support guidelines.

Submitters outlined a need for greater support for businesses remaining in Box Hill that will be significantly impacted by construction. Whitehorse City Council proposed bespoke support for the activity centre.

Submitters outlined that displaced businesses will potentially find it difficult to relocate and stay within the activity centre as there is limited available commercial property.

Remaining businesses are also expected to suffer cumulative impacts from a planned major redevelopment of Box Hill Central (Vicinity Centres), including significant demolition and replacement of buildings, concurrently with the construction of the project.

There will be significant disruption to businesses at Box Hill and, unfortunately, there is no outcome that will entirely mitigate the adverse business impacts of the project at Box Hill. Whilst this is unfortunate, I support the IAC's finding that the adverse impacts of construction have been identified and that they will be managed appropriately, so far as is possible. It is my assessment that the recommended EPRs, business support guidelines and business and residential relocation support guidelines will acceptably manage and mitigate potential adverse impacts.

APH Holding's property at 925-927 Whitehorse Road has planning permission for a 19-storey hotel development that is consistent with state and local planning policy. The site was identified for acquisition in the EES and its ultimate use will be determined as part of the future precinct planning process. The IAC identified that the "...site is immediately adjoining a site intended for above ground station buildings, with the possibility a very small portion of the hotel site will be impacted by station development."⁶⁶ The IAC recommended that SRLA review whether this site to determine whether it can be excluded from the project land and the SCO14 "...in light of the permit issued for its use and development for a hotel and other uses."⁶⁷ SRLA has identified this land as being required for construction but at this stage has not clearly indicated why the land is required. I support this IAC recommendation as if the land is found to not be required for construction it could be removed from the project boundary. SRLA can address this recommendation via the PSA process.

Certainty, clarity and tailored support

Multiple submitters expressed concerns in relation to a lack of certainty and clarity regarding property acquisition processes and timing and support measures. Uncertainty creates stress for business owners, employees and communities and it should be minimised so far as is possible.

The IAC found that SRLA should seek to expedite discussions with affected landowners about timing and the nature of acquisition and relocation. This would help to reduce uncertainty and stress on landowners and businesses. I support the IAC's finding and I recommend that SRLA seek to have these conversations as early as possible with all affected landowners.

I support the IAC's recommendation that the councils be consulted regularly to inform management of business impacts and that remaining nearby businesses are surveyed annually to refine and maximise the effectiveness of support measures.

⁶⁶ IAC Report 1, p. 89.

⁶⁷ IAC Report 1, p. 94.

I support the IAC's finding that bespoke case management consultation packages should be prepared for the Box Hill, Clayton and Glen Waverley SRL station areas, to case manage the business and retail impacts.⁶⁸ This is discussed further below.

I also support the IAC's recommended revision to EPR B2 to identify that support to displaced businesses may include language, financial, accounting and management assistance as appropriate (as well as the engagement of professional advisory and marketing services).

Furthermore, I support the inclusion of financial services and relocation assistance in localised business disruption mitigation plans as potential support measures for businesses remaining within impacted activity centres. Businesses that are not displaced by the project may choose to relocate within the centres due to the impact of the project and should be given assistance as appropriate. I have recommended that the words 'as reasonably appropriate' be added to the IAC's recommended EPR B3.

I support the IAC's recommended changes to the business support guidelines, with some revisions for clarity, as follows:

- clarify support measures that will be funded by SRLA or the contractor;
- require earlier preparation of business plans if deemed appropriate;
- require monitoring of business activity before construction commences, including surveys against which to compare construction impacts; and
- require that SRLA or its contractor support businesses to prepare a financial baseline before construction commences, where the business in question agrees to that measure.

There are different business impacts on the activity centres with the most adverse business impacts being on Box Hill, Glen Waverley and Clayton. I support the IAC's recommendations regarding bespoke case management, in the form of bespoke case management consultation packages and a dedicated business liaison manager for the Box Hill, Clayton and Glen Waverley station areas. I also support the implementation of localised business disruption mitigation plans as provided for in EPR B3.

COVID 19

A number of submitters expressed concerns that the impacts of the COVID-19 pandemic on businesses had not been adequately considered. The pandemic has significantly impacted businesses and activity centres and it is unclear to what extent impacts will continue. I find that it is important to deal with businesses and employees affected by the project with sensitivity, but it is not appropriate for the project to manage impacts of the pandemic as well as those stemming from the project.

Voluntary acquisition

I support the addition of an EPR that requires preparation of a voluntary business and commercial acquisition plan. The EES and the information made available during the IAC hearing have established that there will be significant construction impacts on some businesses remaining within the Clayton, Glen Waverley and Box Hill Activity Centres that could make some businesses unviable.

The IAC suggested that issues that may be considered in drafting guidance on voluntary acquisition may include distance from adverse source/impacts, special needs or circumstances (such as health, disability or other personal circumstances), length of construction time, cumulative impacts and access constraints.

I recommend that the new EPR B8, as recommended for inclusion by the IAC, include guidance about eligibility for voluntary acquisition. This EPR should clarify that eligibility for voluntary acquisition of commercial property will be linked to the impact of the project on the business' viability. I support the IAC's suggested criteria and recommend including criteria to determine the scale of impact of the project, including impacts of construction on amenity and access, cumulative impacts of SRL and other concurrent

⁶⁸ IAC Report 1, pp. 91, 93.

construction and any ongoing access and visibility constraints created by the project. I also recommend that the plan accommodate appropriate time for businesses to relocate prior to construction. I encourage SRLA to develop this scheme quickly to provide certainty to businesses on their eligibility for voluntary acquisition.

Employee assistance strategy

I support the new EPR B9 recommended for inclusion by the IAC, which requires an employee assistance strategy for businesses closing or relocating. Employees will be affected by displacement of businesses and potentially reduced staffing needs in the Clayton, Glen Waverley and Box Hill Activity Centres.

Business and residential relocation support guidelines

Subject to my recommendations at Section 6.8, I support the IAC's finding that the business and residential relocation support guidelines as proposed by SRLA should be supported with changes to ensure that the guidelines are consistent with the recommended EPR B4.

Business support guidelines

I support the IAC's recommended changes to the business support guidelines, with some revisions for clarity, as set out above.

Assessment

It is my assessment that:

- SRLA has acceptably reduced the project's likely impacts on businesses and the business EPRs and support guidelines, with some revisions in line with this assessment, will appropriately mitigate and manage the adverse impacts on business;
- I support the IAC's recommended business EPRs, with some revisions to provide more clarity and guidance, as discussed above; and
- I support the IAC's recommended changes to the business support guidelines with some revisions as set out above.

6.6 Urban design, visual impacts and landscape

Urban design is addressed in Chapter DSC and Attachment B (UDS), and Attachment B.1 of the EES. Landscape and visual impacts are addressed in Chapter LV and Technical Appendices O.1 and O.2, and Attachment G of the EES and in Chapter 11 of the IAC Report. SRLA has proposed seven EPRs to deal with urban design, visual impacts and landscape and two of these have been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise adverse effects on landscape, visual amenity, open space, recreational and public realm values and capitalise on opportunities to enhance these values.

Assessment context

The landscape and visual impacts of the project will be associated with works above ground, and these will be more evident during construction than operation. The introduction of temporary and permanent project infrastructure will constrain views and access and cause the loss of existing and planned open space at the project sites along the corridor.

New station buildings, the emergency support buildings and the stabling facility rail infrastructure, sheds and buildings will be new visual elements at project sites. Following completion of the project the project impacts will decline and be moderated by maturing landscape and evolving built form within the precincts.

The project's urban design will be optimised and its landscape and visual impacts mitigated through the application of EPRs and an approved UDS and public open space framework to inform the detailed design. SRLA and its contractors will propose the detailed design in UDLPs and public open space management plans. These plans will be informed by consultation with the Urban Design Advisory Panel and Public Open Space Expert Panel. This governance approach builds on those governance approaches applied to other major infrastructure projects including the Metro Tunnel Project, the North East Link Project and the Level Crossing Removal Program.

Discussion

The construction of above ground station buildings at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill, the emergency support facility, and the stabling facility at Heatherton will have landscape and visual impacts during construction for people in nearby houses, businesses, streets and public spaces. Visual and landscape changes will continue during project operation due to the new project infrastructure. However, quality urban design that is sensitive to the surrounding context will mitigate these impacts and will be critical at SRL station sites for the project to deliver improved liveability outcomes both during construction and upon project completion.

I accept that the project will have ongoing visual, landscape and social impacts due to the reduction of existing and planned open spaces at Cheltenham, Clayton, Burwood, Box Hill and the stabling facility. I am satisfied that these can be sufficiently mitigated through replacement open space sites and landscaping of remaining sites.

The IAC recommended changes to the EPRs, UDS and public open space framework to clarify or address the sufficiency of measures identified during the inquiry. I am satisfied that these changes will support quality urban design and minimise potential landscape and visual impacts, as discussed further below.

Landscape and visual impact assessment

The EES assessed the potential landscape and visual impacts of the project for all sites during construction and operation both during the day and night.

The IAC noted that although SRLA provided reasonably detailed surface and tunnel plans for the station sites, it did not provide a similar level of detail for the stabling facility. I agree that more detailed plans for the stabling facility would have assisted a more thorough assessment by the IAC and stakeholders of the impacts. Despite this shortcoming, I am satisfied that the landscape and visual impact assessment within the EES provided the requisite information for the consideration of these impacts from the project.

As I have noted above, the construction of above ground station and other buildings will have visual impacts in the respective locations along the corridor. I am satisfied that these buildings will not be inconsistent with the nature of built form change normally experienced in activity centres across Melbourne. I agree with the IAC that the key landscape and visual impacts of the project will be associated with the temporary and permanent loss of existing and future open space. The proponent submitted and the IAC agreed that loss of open space could be mitigated and that visual and landscape impacts would be addressed through implementation of the UDS and public open space framework. I note the landscape and visual impacts of the project and am satisfied these impacts are acceptable and can be adequately mitigated through application of the relevant EPRs, UDS and public open space framework.

Urban design strategy and EPRs

The IAC was satisfied that the UDS will provide the necessary guidance for the assessment and delivery of the project to a high standard of design.

I consider the draft UDS establishes high quality ambition, principles and design direction to enable integrated and context responsive designs for the overall project and its individual project sites. I support

the refinements to the UDS recommended by the IAC including updating place-specific requirements diagrams to ensure they are consistent with the surface and tunnel plans.

Urban Design Advisory Panel

I have already dealt with the Urban Design Advisory Panel in Section 5.3 above and supported the IAC's recommendation for council representation on the Panel.

Cheltenham SRL Station

The project will result in temporary and permanent loss of open space from the Sir William Fry Reserve including 4.37 hectares during construction and 1.14 hectares following project completion and during operation. SRLA would mitigate impacts through replacement open space as required under public open space framework. Kingston City Council submitted that the former Highett Gasworks site would be a suitable location for this.

The IAC supported the proposed site for the Cheltenham SRL station and recognised that the loss of open space here was a significant impact, particularly during construction, recommending that replacement space be provided at the former Highett Gasworks and that this be referenced in the public open space framework. I support this recommendation and the provision of replacement open space prior to construction to reduce impacts from its loss from Sir William Fry Reserve.

I have identified the landscape and visual impacts of the project in this location and understand their significance. I am satisfied that these impacts are acceptable and can be further mitigated by the proposed controls for the project.

The IAC found that the station location was acceptable and that the surface and tunnel plans and UDS provide sufficient direction for the future design of the precinct. The construction of the station within the parkland will result in changes to the landscape and urban setting. I consider that the urban design issues described for the station site can be managed through the preparation of the UDLPs and that these will enhance the presentation, amenity and function of the environment surrounding Cheltenham SRL Station during construction and upon completion of the project. I am satisfied that urban design impacts are acceptable and can be sufficiently mitigated.

In particular, Kingston City Council advanced an 'advocacy design' in the IAC hearing, for Cheltenham, which included many aspects that it would be desirable to consider further in the detailed development of the UDLPs. The IAC considered that these aspects would be addressed through the UDLPs and future precinct planning, and it was satisfied that this could occur under the proponent's concept, subject to the recommended changes to the surface and tunnel plan it discussed. I agree that this is a desirable approach.

Stabling facility

I have dealt with the Stabling Facility in Section 4.3 above. I also deal with specific aspects of the public open space replacement for this site in Section 6.7 below.

In terms of visual and landscape issues for the stabling facility, I consider that prioritising minimisation of off-site impacts for surrounding open spaces, residences and roadways is of particular importance. I am satisfied that minimising the development footprint of the stabling facility and establishing comprehensively vegetated and landscaped buffers along all boundaries, along with other proposed measures, will sufficiently address visual and other impacts caused during construction and operation. I agree that commencement of landscape and other works should proceed as early as possible around the stabling facility to minimise visual impacts. I consider that EPR LV3 and LV4 will satisfactorily manage construction and operation lighting at the stabling facility.

The IAC supported Kingston City Council's submission to consider the inclusion of discrete green roof structures. I accept that the consideration of green roof treatments may contribute to managing visual or

other environmental impacts and I support this IAC recommendation, although I do also note that it is not immediately apparent to me how views from outside the site of the roofs of the buildings would be achieved given the proposed buffer treatments.

I have identified the landscape and visual impacts of permanent project infrastructure in this location and recognise that it will result in a changed landscape. I am satisfied that these impacts are acceptable and that they can be sufficiently mitigated through the project controls including the EPRs and UDS as amended by this assessment.

Clayton SRL Station

The project will result in temporary (approximately six years) and permanent loss of open space from the Remembrance Gardens including 0.2 hectares (54% of the total area) during construction and 0.04 hectares at project completion. Construction within these gardens will cause significant disruption and amenity impacts. Once the new station entrance in the gardens is operating, the secluded character of this open space will be permanently altered to one with high levels of pedestrian movement and activity.

SRLA would mitigate the significant impacts through replacement open space under the public open space framework. Monash City Council submitted that replacement open space should be found to make up for the loss during and after construction. The IAC agreed, finding that the gardens should be treated as being permanently lost in the public open space framework and replacement open space should be provided within an area in close proximity of the station prior to commencement of construction, in addition to the gardens being reinstated consistent with the UDS.

I have identified that the occupation of the Remembrance Gardens during construction, and changes in its use to a busy new station entrance during operation, will have landscape, visual and urban design impacts. I support the IAC's recommendation that replacement open space be found nearby to account for that lost during and post construction. I am satisfied that the impacts are acceptable and can be managed through the public open space framework and Public Open Space Expert Panel. I also consider that the project as outlined in the surface and tunnel plans and through the considered application of the UDS, will provide benefits to the Clayton SRL Station precinct through enhanced streetscapes, improved access, urban activation and greening, and creation of opportunities for integrated and sustainable developments.

Burwood SRL Station

Crossing Burwood Highway could present challenges for users of the Burwood SRL Station. The IAC was presented with different opinions about the most appropriate way to cross the road, each with positive or negative aspects. SRLA supported the option of a pedestrian overpass, as did other stakeholders while Whitehorse City Council preferred an underpass. Some submitters sought specific changes to improve access to destinations on the north side of Burwood Road.

The IAC found that a well-designed pedestrian overpass can provide a safe, convenient and effective crossing of Burwood Highway, and supported the additional requirements included in Technical Note 15 and the Day 4 version of the UDS to guide the design process. I recognise the arguments for and against the different approaches for safely crossing a wide arterial road such as Burwood Highway. I support the IAC's conclusion that a well-designed pedestrian overpass will provide a safe, convenient and effective crossing of Burwood Highway.

I note the urban design and visual impacts of a footbridge in this location. I am satisfied that those impacts are acceptable and can be appropriately mitigated through detailed design.

The naturalisation of Gardiners Creek is proposed within the project land and is addressed in various EPRs and the UDS. Whitehorse City Council and submitters recognised these works as improving the project's landscape and visual amenity and sought their extension further southward as part of the project. The IAC considered that extension of naturalisation works could be considered as part of future precinct planning.

In principle, I support extending these works as they will improve the environment and amenity of the creek corridor and the wider precinct but agree that it is best dealt with through future precinct planning.

The project will result in the permanent loss of part of Sinnott Street Reserve whilst offsetting this through additional open space along Gardiners Creek created from the existing industrial site. Existing vegetation will be removed from the reserve and along Gardiners Creek for construction of the project. I understand the landscape and visual amenity impacts in this location. I am satisfied that these impacts are acceptable and can be appropriately mitigated by the UDS, public open space framework and relevant EPRs.

I am satisfied that upon completion the project will also deliver benefits to the precinct through enhanced urban activation, access, greening of new public spaces, environmental improvements to Gardiners Creek and integrated development opportunities.

Box Hill SRL Station

The project will have significant impacts in the Box Hill Activity Centre, as well as Box Hill Gardens, including temporary loss of open space, removal of buildings, removal of trees and vegetation, and realignment of roadways. These will impact Box Hill's urban design and landscape by altering its appearance and function during construction and permanently upon completion of the project. The changes to the existing character of Box Hill's traditional town centre, in particular, will be noticeable and will represent a significant new shaping of the centre of Box Hill.

Whitehorse City Council and submitters sought detailed design changes to what they considered were areas of concern within the surface and tunnel plans. The IAC supported many of these changes and found that they can be addressed during detailed design. I am satisfied that these suggested changes can be appropriately addressed through the UDLPs and precinct planning processes.

Beyond this, in terms of ensuring high quality replacement spaces and buildings, I consider that the project as outlined in the surface and tunnel plans and through the considered application of the UDS, will provide a high quality station and benefits to the precinct through enhanced streetscapes, improved access, urban activation and greening, and creation of opportunities for integrated and sustainable developments, in a re-enlivening of Box Hill. I expect that the Department of Transport will have regard to the recommendations made elsewhere in this assessment in relation to paid area connections and the need for attention to be given to the existing Box Hill bus interchange. I also expect that SRLA will consider the heritage issues set out elsewhere in this assessment, and work closely with other stakeholders, including the Council and significant landowners in Box Hill, to ensure that detailed design for the project and associated precinct planning will work hand in hand to optimise the future urban design for Box Hill.

Approximately 25% of Box Hill Gardens, at their eastern end, is required for construction and as already mentioned above this area will interface on its northern boundary with adjacent sensitive receivers at Uniting AgeWell. The occupation of the park and its impacts are estimated to take up to, or beyond, a decade. I have identified the impacts on Box Hill Gardens, and I consider that prioritising their minimisation during the design process is particularly important.

I support the IAC's findings that:

- the significant construction impacts on the Box Hill Gardens warrant the provision of replacement open space of at least 1 hectare prior to the commencement of construction (as I noted in Section 6.7, SRLA's 1.6 kilometre radius is a sufficient distance within which to find adequate replacement open space;
- the project should provide a minimum 10-metre wide buffer between the construction area and the Uniting AgeWell boundary; and
- EPR LV6 be augmented to include the interface with the northern boundary of the Box Hill Gardens construction site.

I am satisfied that the relevant EPRs, UDS and public open space framework, as amended pursuant to this assessment, provide the necessary framework for the mitigation of landscape and visual amenity impacts at the Box Hill Gardens.

Assessment

It is my assessment the project will have significant landscape and visual impacts, particularly at key interfaces, but these impacts will not be unacceptable, if managed appropriately.

Further, it is my assessment that:

- The landscape and visual assessment in the EES and submissions and evidence before the IAC appropriately identified the types, distribution and scale of visual impacts that may result from the project; and
- the project landscape and visual impacts, can be appropriately managed and mitigated during the detailed design process through the PSA, the EMF and EPRs, the UDS and UDLPs and the public open space framework, with amendments as recommended in this assessment.

My responses to the IAC's recommendations on landscape and visual effects are as follows:

- I support the inclusion of a council representative on the Urban Design Advisory Panel for matters within that council's municipality;
- EPR LV7 should be amended to include consideration of green roof structures for discrete elements of the stabling facility;
- EPR LV6 should be amended to include the interface with northern boundary of Box Hill Gardens construction site; and
- I support all other recommendations made by the IAC in relation to amendments to the landscape and visual EPRs, the UDS and public open space framework as those documents pertain to landscape and visual matters.

6.7 Land use planning and open space

Land use planning effects and open space effects are addressed in Chapter LUP and LV and Technical Appendices N.1 and N.2 of the EES and in Chapter 12 of the IAC Report, and in Chapter LV and Technical Appendices O.1 and O.2 of the EES and in Chapter 11 of the IAC Report.

SRLA has proposed five EPRs to deal with the land use implications. LUP4 and LUP5 have been the subject of recommendations by the IAC to deal with open space and tunnel infrastructure protection issues.

Evaluation objective

Achieve integration with adjoining land uses, minimise displacement of land use activities and key infrastructure and resolve inconsistencies with strategic land use plans.

Avoid or minimise adverse effects on landscape, visual amenity, open space, recreational and public realm values and capitalise on opportunities to enhance these values.

Assessment context

The project's land use impacts are above ground during construction and operation of the six stations, stabling facility, and emergency support facility. The land use impacts from the project's tunnel components are limited to requiring protection from surface development that threatens the integrity of the tunnels.

The project's land use benefits are the integration of transport, in strategic locations such as activity centres and employment and education nodes, to deliver key state transport and land use objectives and policies.

The main adverse land use impacts from the project are the displacement of existing land uses, such as residential, commercial, industrial, transport and public open space, both during construction and, in some instances, permanently. The land uses surrounding the project land will also experience a changed and more intensive land use at the project sites during construction and once the facilities are operational.

The project requires a large amount of land temporarily and permanently. This requires land acquisition comprising up to 312 commercial, residential and public properties and a permanent loss of public open space at the Sir William Fry Reserve in Cheltenham and Sinnott Street Reserve in Burwood, as well as the loss of proposed public open space at the Delta landfill site in Heatherton as part of the Chain of Parks. The temporary occupation of public roads and open space is also significant with some occupations lasting the entire construction period of 5 to 10 years. The permanent loss and temporary occupation of many properties and open space is unavoidable for a project of this scale, especially when seeking to locate stations and facilities in existing activity centres and urban areas.

Discussion

The EES has detailed the land use and open space impacts and proposed mitigation of the impacts. Key mechanisms for mitigating land use effects and open space loss through construction and operations are through an EMF and EPRs.

The draft PSA, including the incorporated documents, will facilitate the project and require the Minister for Planning's approval of a range of secondary approval documentation, such as the surface and tunnel plans and others that form part of the project mitigations, as outlined and assessed in Section 5.2 of this assessment.

Important components of the land use and open space mitigations are set out in the UDS and public open space framework, as well as the subsequent site-specific UDLPs and public open space management plans to be prepared and in some instances approved to the Minister for Planning's satisfaction. These are prepared with oversight from the Urban Design Advisory Panel and Public Open Space Expert Panel, which are recommended to include councils, as discussed in Section 5.3 of this assessment.

Chapter 4 of my assessment details some matters relevant to the Heatherton Stabling Facility and open space. Below I discuss and make further recommendations about land use, including open space, in relation to land use integration, land use impacts across the project sites, replacement of open space and the surface and tunnel plans.

Integration with land uses

The project will reshape the city and can be expected to change the form and function of land use around the newly formed or expanded transport hubs. These changes will be enhanced by precinct planning as discussed in Chapter 4.

The project is intended to change the city to provide significant benefits which have also been discussed in Chapter 4. The main land use benefits of the project are new stations in key activity centres, employment, health and education areas across Melbourne's south-eastern and eastern middle ring suburbs that make it easier for people to get to jobs, services and each other.

I am satisfied that this is an integrated transport and land use project that will deliver on several key state transport and land use objectives and policies, including the objectives of the Transport Integration Act and the broad planning objectives and policies underpinning Plan Melbourne, which is also supported by the creation of the SRL Ministerial Guidelines, and Parliament's support through the Suburban Rail Loop Act. The location of the SRL stations as well as the project control planning framework will ensure that appropriate integration occurs. In relation to alignment with strategic land use plans, I consider that state level policy supports the project. Where local land use plans are not consistent with the project, this is because their creation precedes the project. Once the project has been approved they will need to be

revised in order to allow for the project and any change in direction that is desirable given the existence of the project.

The project will result in land use transformation in some areas in order to embed and integrate the project. The changes to the existing land use patterns will be significant. For some land the changes will result in complete land acquisition, the loss of some open space, business impacts short and long term and amenity impacts. These have been identified in the EES and considered as part of the IAC process.

The assessment of these impacts will need to be weighed against other relevant factors in the assessment of whether to approve the proposal under the Planning and Environment Act. In that statutory context, which arises after this assessment, the Minister for Planning will be required to apply the principles of integrated decision making under the Planning and Environment Act. This assessment informs that decision making. I note that the IAC, in providing its advice on the planning framework, acknowledged the net community benefit of the project⁶⁹ These are matters will be considered by the Minister for Planning when making a decision under the Planning and Environment Act.

Project site identification and project land

The SRLA appropriately identified the land required for acquisition and temporary occupation to facilitate project construction and arrangement of the project infrastructure, subject to my recommendations in Section 6.5 about particular sites in Box Hill. The project land supports the delivery of amenity, mobility, connectivity and functionality improvements to activity centres where SRL stations are proposed. The proposed treatment of the project land also retains development potential in and around SRL station facilities.

In relation to the Alex Fraser site, submissions were made that the project boundary should not align with the entire site, but rather, should be limited to align more closely with the underground tunnel infrastructure. This submission was made because of concerns that the site could be used for broad project activities, in particular the handling of spoil. Elsewhere I have accepted the IAC's recommendation to limit the receipt of gasworks contaminated spoil on other project sites, and I consider this deals with that particular concern. I also note that SRLA advised the IAC that the project boundary should continue to take in the whole of the Alex Fraser site, because there may be a requirement for ground stabilisation works on that site and flexibility is required (for further detail see Technical Note 52, tabled document 785). I invite SRLA to provide further information to the Minister for Planning at the PSA stage, to outline the nature of the anticipated project facilitation works for that site, so that the Minister for Planning can further consider the appropriate project boundary for that site.

Land use impacts

I am satisfied that the extent of potential land use environmental effects during construction and operation has been adequately identified and assessed, and measures identified to minimise and avoid impacts, subject to my recommendations as set out in this assessment.

The project EPRs, such as EPR LUP1, include the requirement to minimise the project footprint to the greatest extent practicable, to minimise impacts on existing land uses, and to avoid unnecessary disruption to surrounding land uses.

I generally agree with the IAC's findings in relation to land use and infrastructure project wide and in relation to the station sites and facilities,⁷⁰ as discussed below. The open space impacts and replacement is discussed in the following section.

⁶⁹ IAC Report 1, p. 241.

⁷⁰ IAC Report 1, Chapter 12.

Cheltenham land use impacts relate to lost public open space and loss of commercial properties which will be acquired for the project. However, the SRL station is well located to capture complementary land use and connectivity benefits from the nearby Metro station and Southland retail precinct. I support the IAC's findings for Cheltenham.⁷¹

Heatherton Stabling Facility land use impacts have been discussed in Chapter 4 of this assessment and below in relation to public open space. In particular, I acknowledge the significant change of proposed land use for this site, and the fact of it being Green Wedge Zone land.

Clayton land use impacts are predominately related to a section of commercial properties which will be acquired for the project, impact to open space, and the impact to the functioning of the activity centre during construction. I support the IAC's findings for Clayton.⁷²

Monash land use impacts are predominately related to the loss of commercial properties which will be acquired for the project and impacts during construction. However, importantly the station will support access and public transport connection to Monash University and the Monash National Employment and Innovation Cluster. I support the IAC's findings for Monash.⁷³

Glen Waverley land use impacts results in the loss of carparking which will be acquired for the project, and the impact to the functioning of the activity centre during construction and operation. I support the IAC's findings for Glen Waverley.⁷⁴

Burwood land use impacts results in the loss of commercial properties and open space, which will be acquired for the project and impacts during construction. However, importantly the station will support access and rail transport connection to Deakin University and other education facilities. I support the IAC's findings for Burwood.⁷⁵

Box Hill land use impacts are significant and are the consequence of the large extent of commercial and residential properties which will be acquired for the project, and the impact to the functioning and short-term redevelopment of the core of the activity centre during construction, and surrounding properties. I support the IAC's findings for Box Hill and acknowledge that the success of the project in Box Hill relies on detailed planning issues that should be further considered during the UDLP and precinct planning processes.⁷⁶ I also agree with the IAC that "detailed changes to the Box Hill Surface and Tunnel Plan sought by Whitehorse and other submitters should be further considered during the UDLP and precinct planning processes and following the further assessment of which heritage places in Whitehorse might be retained."⁷⁷

I consider that SRLA has proposed a suitable framework for delivering the project and, where possible, mitigating land use impacts across project sites and facilities. Unfortunately, not all impacts can be mitigated with a project of this nature and scale that seeks to achieve a transport network involving significant changes and changed amenity around the SRL stations and facilities sites.

I am satisfied that the EMF and EPRs, along with other measures outlined in supporting documents and guidelines and the draft PSA documentation, appropriately and as far as possible mitigate these impacts. My recommendations and summary of the PSA documentation is provided at Section 5.1.

I am satisfied that amenity, connection and land use interface issues at project sites can be adequately resolved during detailed design and preparation and approval of the UDLPs. Also importantly, as

⁷¹ IAC Report 1, p. 143.

⁷² IAC Report 1, p. 150.

⁷³ IAC Report 1, p. 152.

⁷⁴ IAC Report 1, p. 152.

⁷⁵ IAC Report 1, p. 154.

⁷⁶ IAC Report 1, p. 155.

⁷⁷ IAC Report 1, p. 155.

mentioned above, some of the matters raised by councils and submitters about the future redevelopment around the SRL stations and facilities should be further considered during the detailed design phases and preparation of the UDLPs and precinct planning process.

Replacement of open space

The EES demonstrated and the IAC found that the project's impacts on open space due to above ground works during construction and operation would be significant. The loss of public open space, both temporarily and permanently, has associated land use, social and environmental effects. I agree with the IAC that the replacement of open space is an important mitigation of the project's land use impacts.

I consider that the EES process, including the submissions and IAC hearing, identified and assessed the open space impacts of the project and has provided a suitable framework for mitigating open space impacts, subject to my recommendations which are generally supportive of the IAC's recommendations.

I agree with the IAC's findings that the long-term loss (over 18 months) and permanent loss of open space is a significant impact that can be mitigated by the provision of replacement open space and the relocation of recreational facilities.

SRLA's proposed EPR LUP4 addresses replacement of open space requirements including the development and implementation of the public open space framework, which is also required under the draft SCO14 Incorporated Document, and the preparation of public open space management plans.

The IAC recommended changes to EPR LUP4 and the SCO14 Incorporated Document. I consider that EPR LUP4, subject to the IAC's and my recommended changes, will ensure that open space impacts can be mitigated. In addition, approval of the public open space framework by the Minister for Planning, as recommended by the IAC and included in SCO14, will ensure oversight of open space mitigation outcomes.

As set out in the previous section, the temporary and permanent loss of open space will occur at:

- Cheltenham – Sir William Fry Reserve, Highett;
- Heatherton Stabling Facility – planned public open space as part of the Chain of Parks concept;
- Clayton – Remembrance Gardens;
- Burwood – Sinnott Street Reserve and Gardiners Creek Reserve; and
- Box Hill – Box Hill Gardens and Whitehorse Road Linear Reserve.

As set out in the previous section, I agree with the IAC's findings that the permanent loss of open space at the Sir William Fry Reserve is a significant impact that can be mitigated by the provision of replacement open space and the relocation of facilities including a skate park and basketball facility. As stated above, I agree with the IAC's recommendations including that the public open space framework refer to the former Highett Gasworks site as an appropriate candidate for replacement open space.

The previous section also sets out my findings in relation to Clayton and Burwood. In addition, I note that at Burwood there will be no net loss of public open space, and an improved outcome through the proposed naturalisation of the creek and pedestrian and cycling upgrades. I agree with the IAC's finding that there is sufficient nearby open space available so that the temporary loss of open space does not need to be offset. In addition to further naturalisation of the creek being considered in the preparation of the UDLP and precinct planning, the provision of an additional pedestrian and cycling crossing over the creek could also be considered

The Heatherton Stabling Facility will see a former quarry and now landfill site being replaced with the stabling facility. In contrast, the strategic planning for the site had identified the potential future use to be active recreational public open space, as part of the Chain of Parks.

As has been addressed in Section 4.3, I support the stabling facility in this location. However, the loss of the potential for it to be transformed into a future open space is significant. In addition to the IAC recommendations, I also have recommended that the public open space management plan prepared in

relation to the Heatherton Stabling Facility is submitted for the Minister for Planning's approval. The implementation and delivery of the optimal offsetting solution will require flexibility. As part of the process that will follow this assessment I expect that how the framework refers to this site may be refined. In terms of timing, the intention should be to deliver the open space prior to the operation of the stabling facility.

At Box Hill, the land will be returned and restored after project construction. I agree with the IAC's findings that the construction impacts on the gardens are significant and that replacement open space should be provided. However, I do not agree that replacement open space should be restricted to within a 1-kilometre radius of the gardens. I consider that SRLA's proposed 1.6-kilometre radius provides suitable accessibility and additional flexibility to find alternative open space areas given the challenges of finding new open space in this suburban area. I do recommend that SRLA seek to replace lost open space as close to the garden and project as possible and note that this is an outcome sought from the public open space framework.

As stated above, I agree with the IAC's findings that a link to the gardens should be provided between the Uniting Age Well facility and the project construction areas discussed in Sections 6.6 and 6.9 of this assessment and expressed in a new EPR SC6. I agree with the IAC's findings that the public open space framework should also include a reference to the Whitehorse Road Linear Reserve in the summary table, so that any loss or replacement can be included in project open space considerations.

Surface and tunnel plans

Changes to the surface and tunnel plans in relation to land use definitions, project area inclusions and traffic were raised during the hearing and in the IAC recommendations.

Submitters expressed concern about how to interpret the areas identified as 'site subject to future precinct planning process' on the surface and tunnel plans. The IAC recommended that the legend reference for these sites on the surface and tunnel plans be amended to 'site subject to future precinct planning process, including possible additions to the public realm, community facilities and pick up/drop off spaces' to provide more flexibility about possible future land uses.⁷⁸

SRLA has been transparent that these sites are not defined as building footprints and would be available after construction to contribute to the future land use mix.⁷⁹ Any future development of these sites will be scrutinised through the application of the interim land use guidelines, preparation of UDLPs with oversight from the Urban Design Advisory Panel (including the councils) and public exhibition of the plans prior to approval, as well as through the future precinct planning process.

I accept the IAC's recommendations about the changes of detail on the surface and tunnel plans, to provide flexibility for future land uses. This also includes recommendations related to traffic and transport, as outlined in Section 6.1 of this report.

The IAC also stated that high density development in support of the stations would be a positive and justifiable outcome, but there needs to be flexibility. I agree and consider the surface and tunnel plans, even with recommended reduced detail, will still provide adequate detail of the land use arrangement for the station infrastructure. They will provide a general framework to guide detailed design and the preparation of the site specific UDLPs, and to inform the future precinct planning process.

Overall, subject to my recommendations, I am satisfied that the project's ultimate design will integrate with adjoining land uses, minimise displacement of land use activities and key infrastructure and resolve any inconsistencies with strategic land use plans, as much as possible. I am also satisfied that the impacts to public open space can be minimised and that the project provides opportunities to enhance these spaces.

⁷⁸ IAC Report 1, p. 152.

⁷⁹ Technical Note 18 and tabled document 775 at paragraph 52.

Assessment

It is my assessment that:

- the land use and open space impacts have been properly identified and assessed;
- the land use and open space impacts mitigations can be managed through the SCO14 and SCO15 Incorporated Documents, EMF, EPRs, UDLPs, public open space management plans and the detailed design phases of the project;
- I support the IAC's modification to EPR LUP4;
- I support the IAC's addition of EPR LUP5;
- I support the IAC's modification to the surface and tunnel plans to amend the legend reference and remove the proposed bus interchange and pick-up and drop-off details from the plans;
- I recommend that the surface and tunnel plans be amended to include the option for Carinish Road at the Clayton SRL station and Coleman Parade at the Glen Waverley SRL station to remain open;
- I recommend that the SCO14 Incorporated Document and EPR LUP4 are modified so that a public open space management plan prepared in relation to the Heatherton Stabling Facility is submitted for the Minister for Planning's approval; and
- I support all other recommendations made by the IAC in relation to the land use planning EPRs.

6.8 Social and community

Social and community effects are addressed in Chapter SO and Technical Appendices P.1 and P.2 of the EES and in Chapter 13 of the IAC Report. SRLA has proposed six EPRs to deal with Social and Community effects and five of these have been the subject of recommendations by the IAC. The IAC also proposed an additional EPR (EPR SC7) for the management of social and community effects.

Evaluation objective

Avoid or minimise adverse effects on the community near the project, including with regard to community cohesion, access to services and facilities and health impacts and capitalise on opportunities to enhance benefits for communities.

Assessment context

Communities in proximity to project construction works have the potential to experience localised social effects associated with:

- acquisition of residential properties, businesses and community facilities;
- changes in amenity from project-induced noise, vibration, dust and visual changes;
- displacement of open space and recreational areas; and
- changed access and traffic conditions.

During project operation there will be significant social benefits from the project overall, but some communities will also experience adverse social effects relating to for example, the permanent loss of open space.

SRLA proposes to acquire 152 residential properties to allow for the construction and operation of the project. 108 of these properties are located in Box Hill and will be acquired to allow for construction and operation of the SRL station at Box Hill. An additional 150 commercial properties and eight community facilities will also be acquired across the project area to allow for project construction and operation. Community facilities to be acquired include Monash Community Family Cooperative, an early learning and childcare service, and Monash City Church of Christ. Monash Community Family Cooperative is used by Monash University staff and students and residents of the surrounding area. Monash City Church of Christ provides church services and a range of social services to the Glen Waverly community, including vulnerable members of the community. A residential college of Monash University, Normanby House, will

also be acquired resulting in the loss of 100 student housing places on campus. In Box Hill, over 60 businesses, many of which provide specialist services to the local Asian community, a medical centre, two chemists and a number of banking services will also be displaced.

Project construction will create a major disruption for residents, workers, students and others who visit the project area due to changed traffic conditions and access. Some residents will also experience changes in amenity over many years, particularly from increased noise levels. Vulnerable members of the community, including residents of the Uniting AgeWell aged care facility will be particularly sensitive to changes in amenity. The aged care facility is located directly north of Box Hill Gardens and residents currently enjoy views onto Box Hill Gardens and direct access to the gardens.

During project construction, the quantity and quality of open space available for public use in parts of the project area will be diminished. The southern extent of Sir William Fry Reserve will be temporarily occupied during project construction as will approximately 24.9% of Box Hill Gardens. Some open space areas, such as parts of Sir William Fry Reserve and Box Hill Gardens, will also be subject to changed amenity. Other open space areas such as Sinnott Street Reserve and Remembrance Gardens will be permanently occupied, resulting in a permanent displacement of passive and, in some cases, active recreation. The planned open space on the Delta former landfill site in Kingston will be lost due to the Heatherton Stabling Facility.

Once operational, the project will deliver a range of social benefits for communities living, working and studying in proximity to the SRL stations and more broadly across Melbourne. Local communities will benefit from improved access to work, educational and community facilities through services provided by SRL East. More broadly, public transport users will benefit from improved travel times and connectivity. The project will assist in improving liveability and provide the impetus for land use change around the new stations and along the connecting railway lines as well as reduced traffic congestion.

I acknowledge that the project will generate both social benefits and adverse social effects. The IAC also considered these competing issues.

Discussion

Adverse social effects generated by the project will mainly be experienced during construction for local communities living and working in proximity to project works. These include effects on wellbeing and liveability and a loss of sense of place and cultural connection. As is often the case with social effects, communities and individuals will not experience these effects in the same way. Social effects are likely to be particularly significant in Box Hill due to the proximity of construction works to residences and the number of residences and businesses to be acquired. Residents living in proximity to the stabling facility may also experience adverse social effects due to the siting of the stabling facility on the former landfill site, without any local community benefits.

Cumulative social effects may be experienced in communities along the project alignment from existing and ongoing construction works associated with other projects in these areas. Cumulative social effects may also be associated with future precinct planning processes around the SRL stations and land within the station sites subject to future precinct planning processes. The IAC notes that local communities in Box Hill could experience cumulative social effects as there are a range of other developments in the area including the potential future construction of SRL North. To better manage these effects, the IAC has recommended additional mitigation measures in locations such as Box Hill. These recommendations and my response are discussed further below.

Acquisition of residential properties, businesses and community facilities

The acquisition of residences, businesses and community facilities has the potential to generate a range of social effects for directly affected residents, business owners and operators, and local communities who access these services and facilities. The IAC Report discusses the major disruption that residents affected

by property acquisition are likely to experience along with a sense of loss and, in some cases, inability or reticence to move to another similar location. Directly affected residents, business owners, operators and employees may also experience heightened levels of stress and uncertainty due to the acquisition. Users of community facilities affected by acquisition such as the Monash Community Family Cooperative and Monash City Church of Christ will also experience disruption and potentially a loss of community connection.

I acknowledge the concerns and fears expressed in submissions to the IAC from residents and expressed to a lesser extent by business owners directly affected by acquisition. The early purchase of dwellings, community facilities and businesses, as provided for in the business and residential relocation support guidelines, will play an important role in mitigating these effects. However, for some directly affected residents, businesses and users of community facilities, effects on wellbeing will still be considerable.

I acknowledge the important role that the Box Hill shopping area plays for many local residents in terms of the range of services it provides, and the cultural and community linkages residents have with it. I also acknowledge comments made by Whitehorse City Council's expert witness Dr Stubbs that economic impacts can have social and community effects, including effects on cultural connection.

While the EES assessed the social effects for residents and business owners with properties subject to acquisition, the intangible effects associated with a loss of sense of place and cultural connection to the Box Hill shopping area would have benefited from a more detailed assessment and greater discussion in the EES.

I agree with the IAC finding that once operational, the project will provide significant benefits to Box Hill. However, there is a need to carefully and sensitively manage direct impacts associated with a loss of community facilities, dwellings and businesses in the short to medium term. The social effects of acquisition are likely to be particularly significant for affected residents and businesses owners and employees in Box Hill due to the number of residences and businesses to be acquired. I also acknowledge that some residents and business owners affected by acquisition may find it challenging to move to another similar location. It will be important for SRLA to consider these issues when assessing the effects of dislocation and displacement on individuals and families to determine the level of support and engagement required through the business and residential relocation support guidelines.

I consider that the mitigation measures proposed, including the business and residential relocation support guidelines and relocation support available to community facilities via EPR SC5, will assist in minimising the effects of acquisition on residents, business owners and users of community facilities across the project area. I also consider that it will be important for SRLA to review the effectiveness of the support measures outlined in the support guidelines. To this end I have included a recommendation to conduct follow-up surveys with residents to assess the effectiveness of the measures outlined in the support guidelines so that these measures can be adapted by SRLA as required. This aligns with a similar recommendation by the IAC for the business and residential support guidelines.

I agree with the IAC's new EPR B9 that requires an employee assistance strategy, in that this strategy will provide support to employees who may be experiencing uncertainty and effects on wellbeing due to businesses being affected by property acquisition. Section 6.5 of this assessment discusses the IAC's recommendations to provide additional support to businesses and employees affected by acquisition and my response.

Changes in amenity

Changes in amenity over an extended construction period of up to eight or nine years has the potential to generate a range of social effects including effects on wellbeing and liveability of homes and neighbourhoods of directly affected residents. Key changes in amenity during construction will relate to increases in dust and noise emissions and changes to visual amenity, traffic and access. Residents who are

home much of the day and are vulnerable, such as the elderly, are likely to be particularly sensitive to these effects.

I acknowledge the significant concerns raised in submissions to the IAC from Uniting AgeWell and by Whitehorse City Council's expert witness Dr Stubbs on the potential for residents of Uniting AgeWell to experience social effects from changes in amenity during project construction. The existing vulnerability of these residents and their proximity to noise generating works, dust and visual amenity changes over an extended period requires careful management. I also acknowledge concerns raised in a submission to the IAC on behalf of a number of unit owners at 1 Elland Avenue about a loss of acoustic and visual amenity over an extended period due to construction of the SRL station at Box Hill as well as other construction impacts.

The various on-site mitigation measures discussed elsewhere in this assessment to be employed to minimise changes in amenity and reduce the risks of harm to human health will be important to mitigating these social effects. Off-site mitigation measures relating to noise and vibration, as detailed in the business support guidelines and residential support guidelines, will only be applied after all reasonably practicable on-site measures have been implemented at the source. I consider that the landscape and visual EPRs such as LV7, which relates to enhancing screening for the stabling facility, and the UDS will also assist in minimising landscape and visual amenity effects for residents. I agree with the IAC's suggested amendments to the business support guidelines and residential support guidelines, including to conduct follow-up surveys with residents to assess the effectiveness of mitigation measures. These recommendations and my response are discussed further in Sections 6.2 (noise) and 6.6 (visual).

Due to the proximity of some residents to construction works and/or their heightened levels of vulnerability, I consider that in certain cases additional tailored mitigation measures and management controls are required. For instance, elderly residents of Uniting AgeWell will be particularly sensitive to changes in amenity but only able to access some of the off-site mitigation measures provided for in the residential support guidelines, such as double glazing.

I agree with the IAC that SRLA's inclusion of a new EPR SC6 to better manage potential social effects on residents of Uniting AgeWell is appropriate, if not imperative. I also support the intent of the IAC's recommended changes to EPR SC6 to provide for a buffer of at least 10 metres between the construction boundary in Box Hill Gardens and the Uniting AgeWell southern fence line. The IAC proposed this buffer to provide for a safe pedestrian access to the Box Hill Gardens for all park users as well as an amenity buffer for Uniting AgeWell residents. I consider that additional changes to EPR SC6 are needed to further mitigate the potential for amenity and public safety effects in this area. I recommend installing appropriate lighting along the pedestrian accessway between Uniting AgeWell and Box Hill Gardens in a manner that minimises light spill into Uniting AgeWell and planting and maintaining trees or large shrubs along the construction site fence line consistent with EPR LV1.

The IAC recommended a new EPR SC7 to provide for a voluntary acquisition scheme for residential properties with the potential to experience significant amenity impacts. The IAC also found that the residents of 1 Elland Avenue should be offered voluntary acquisition. I support the intent of EPR SC7 but consider that it is important that the EPR clarifies that the voluntary residential acquisition plan will include defined criteria that inform whether residences are eligible for voluntary acquisition. Voluntary acquisition of 1 Elland Avenue will be considered against the same defined criteria. As outlined in Section 6.5, the IAC suggested a number of issues that may be considered in drafting guidance on voluntary acquisition which I support.

The amended EPR SC7 reflects that defined criteria will guide the selection of properties eligible for inclusion in the voluntary acquisition scheme.

I encourage SRLA to develop the voluntary residential acquisition plan quickly to provide certainty to residents on their eligibility for voluntary acquisition. It will also be important that the voluntary residential

acquisition plan allows appropriate time for residents to relocate prior to construction commencing. Section 6.5 discusses the IAC recommendation relating to voluntary acquisition of businesses (EPR B8) and my response.

Displacement of open space

As has been set out above, the project will temporarily and in some cases permanently displace open space areas during construction and operation. Changes in amenity associated with construction works will also affect community use of some open space. Open spaces contribute to the health and wellbeing of communities. They are highly valued by communities for active and passive recreation, community events and gatherings and contribute to sense of place and the liveability of neighbourhoods.

Councils raised concerns at the hearing over the loss of open space areas in their municipalities and sought changes to the public open space framework. I acknowledge that the loss of these open space areas will be keenly felt by local residents and in some cases the broader community. The loss of these areas will also be challenging to offset, particularly as it will be important to provide comparable sites near areas to be lost. Sir William Fry Reserve for example, is highly valued by local communities for its recreational infrastructure. I acknowledge concerns raised in Kingston City Council's submission over the displacement of recreational infrastructure including a skate park and basketball half-court and the potential for project construction to disrupt public events in the park. I also acknowledge concerns raised by Whitehorse City Council over the loss of open space in Box Hill Gardens, the changed amenity of other parts of the gardens and the acquisition of Sinnott Street Reserve. In the case of Box Hill Gardens, these changes would affect use and enjoyment of the park during the prolonged construction period. Occupation of part of Sinnott Street Reserve and Remembrance Gardens would permanently affect the use of these areas. Whitehorse City Council also raised concerns over pedestrian access to Box Hill Gardens being affected, particularly for residents of Uniting AgeWell.

The public open space framework commits SRLA to mitigating impacts on passive, active and planned public open space associated with construction and operation. The IAC suggested changes to the public open space framework and EPR SC3 to further minimise impacts on public open space and recreational infrastructure. I agree with these changes. I also support the IAC's recommended changes to EPR SC4, to require that contractors ensure they are aware of key public and private events prior to construction, to plan construction around them and minimise disruption to those events. I consider that a further change to this EPR is needed to require that the contractor keep up to date with key events throughout construction, and work to plan construction around them and minimise disruption to those events. As outlined, I also support the IAC's recommended changes to EPR SC6 to provide access between the construction boundary in Box Hill Gardens and the Uniting AgeWell southern fence line because it will serve as a noise, dust and visual buffer to the works and a pedestrian link to the Box Hill Gardens. Section 6.7 discusses the IAC's recommended changes to EPR LUP4, which relates to the development and implementation of the public open space framework, and my response.

A number of community submissions to the IAC, including from MTTY, expressed concern over the proposed location of the Heatherton Stabling Facility on a site that had been identified for public open space and recreational facilities as part of the Chain of Parks. I acknowledge these concerns and the disappointment expressed by members of the local community over the loss of the future use of this area for open space and recreation. I agree with the IAC finding that the use of this site as a stabling facility will result in unavoidable social effects on the local community. I also agree with the IAC that further design of the stabling facility, such as enhancing visual screening and identifying and acquiring alternative open space to contribute to the Chain of Parks should minimise these effects. Sections 6.6 (visual) and 6.7 (land use planning) discuss the IAC's recommendations on the design of the stabling facility and my response.

Changed access and traffic conditions

During construction, access and traffic conditions will change, particularly in and around each project construction site. These changes will create inconvenience and disruption over a prolonged period and, in some areas, affect liveability and community connection. Changes in access and traffic conditions can also affect community perceptions of safety. While the IAC did not consider these effects in detail, I am confident that the proposed mitigation measures and EPRs to be adopted (including EPRs T3, T4 and T5) will appropriately minimise these effects. Section 6.2 discusses the IAC recommendations on transport and traffic and my response.

During operation, there will be social effects from permanent changes in traffic conditions. For instance, residents will no longer be able to turn right into Elder Street south from Old Dandenong Road because it will be closed. The IAC heard evidence from Kingston City Council's expert witness Mr Johnson that this could add five minutes to the journey for residents living west of the Heatherton Stabling Facility travelling to Clarinda Shopping Centre. I acknowledge the concerns raised by MTTY and other submitters about this reduced access and associated inconvenience. I also acknowledge the important role that local shopping centres play in creating community connection.

The closure of Carinish Road and Coleman Parade also have the potential to create inconvenience and access and amenity-related affects for local residents and businesses. Section 6.1 discusses the IAC recommendations on transport and traffic and my response.

Once operational, communities will benefit from new and upgraded project infrastructure including new train stations and associated train services and improved bus, walking and cycling infrastructure. Improved access and connectivity will make a positive contribution to liveability in affected communities.

Communication and stakeholder engagement

Maintaining communication and engagement with affected communities during construction of the project will be important for mitigating social effects. Communities along the project alignment are culturally and linguistically diverse, particularly in Glen Waverley and Box Hill where for many residents English is not their first language. This necessitates tailored communication and engagement about the project that is responsive to the needs of the community. I support the IAC's recommended changes to EPR SC2 to require communications and stakeholder engagement plans to be written in plain English and in different languages.

The IAC concluded that, subject to its recommendations and recognising some significant social and community effects, particularly relating to the stabling facility and Box Hill, these effects do not preclude the project being approved or the evaluation objective being met. I agree with this conclusion. I am satisfied that following implementation of the IAC's and my recommendations, the social effects will be acceptably managed.

Assessment

It is my assessment that:

- the project will cause social effects, including some that will be significant, but on balance these effects can be acceptably managed through the EPRs, as modified in accordance with my assessment;
- the tailored EPRs, including EPR SC6 and LV7, with changes recommended by the IAC and in my assessment will be critical to managing social effects in Box Hill and near the stabling facility;
- the project will deliver substantial community benefits, but these will not be realised until the project is in operation;

- implementation of a voluntary acquisition scheme is appropriate for residential properties with the potential to experience significant amenity changes in line with the IAC's recommended EPR SC7, where defined criteria are satisfied; and
- I support all other recommendations made by the IAC in relation to the social and community EPRs.

6.9 Contaminated land and spoil management

Contaminated land effects and spoil management are addressed in Chapter CL, Technical Appendices F.1, F.2, F.3 and F.4 of the EES and in Chapter 9 of the IAC Report. SRLA has proposed six EPRs to deal with contaminated land. Two of these have been the subject of recommendations by the IAC. The IAC has proposed two new EPRs.

Evaluation objective

Avoid adverse environmental effects resulting from the disturbance and handling of contaminated or acid forming material and minimise spoil generation, maximise reuse and manage spoil in accordance with best practice principles.

Assessment context

The project will generate approximately 3.5 million cubic metres of spoil during construction. Works will encounter contaminated land at Cheltenham SRL station and the stabling facility and during construction of the rail tunnels and cross passages to the south of Clayton. There is potential for migration of landfill gases associated with landfill leachate in this area. Ground improvement works at the stabling facility may also mobilise landfill gases.

Contaminated land is generally limited to the southern portion of the project (i.e. Cheltenham, Heatherton and Clayton) and is associated with former industrial facilities, existing and former landfills and the geology, which contains sediments that may be acid-forming and may contain naturally high levels of arsenic. Tunnel spoil from this area could have relatively high levels of contaminants. The geology in the more northern project locations has acid rock properties and potential for naturally high metals and inorganics. There is also a former landfill at Bennettswood Reserve near Burwood SRL station.

Drawdown-induced migration of contaminants and landfill gas is an issue for excavation of the station boxes, cross passages and portals where dewatering will be required; whereas construction of the rail tunnel with a TBM will effectively seal the excavations as the TBM progresses. Ground improvement works at the stabling facility involving surcharging may cause hazardous gases to move laterally toward residential areas adjacent to the site.

There is some uncertainty about the level of existing contamination at the stabling facility and the human health risk posed by contaminated dust generated by excavation of the station box at the Cheltenham construction site.

The project must manage contaminated land in accordance with the duties, obligations and requirements imposed by the Environment Protection Act, including:

- the general environmental duty;
- the duty to manage contaminated land (to minimise risks of harm to human health and environment so far as reasonably practicable);
- the duty to notify the EPA of contaminated land;
- the duty to take action to respond to harm caused by a pollution incident;
- the duty to notify the EPA of a notifiable incident;
- duties relating to industrial waste; and
- duties relating to priority waste.

During construction, contaminated land will be managed in accordance with a contaminated land management plan required by EPR C2 and with the following EPRs:

- EPR C1, requiring further baseline investigation, monitoring and reporting to inform detailed design and environmental management;
- EPR C3, requiring a spoil management plan;
- EPR C4, requiring a hazardous ground gases management plan;
- EPR C6, requiring a potential acid sulfate soil and rock management plan;
- New EPR C7 requiring construction phase air emission control and treatment at Cheltenham; and
- New EPR C8 requiring updated human health risk assessment for the stabling facility.

All management plans are required to be developed in consultation with the EPA.

During the operation of the project, monitoring and management of contamination issues are required by EPR C5, as part of the operational environmental management plan for the project.

Discussion

The construction of SRL East will disturb contaminated land and groundwater, especially south of Clayton, with additional management measures required during construction of Cheltenham SRL station, the stabling facility and the tunnels south of the Clayton SRL station. The project will generate large volumes of spoil of which nearly one third is predicted to be prescribed waste requiring careful management and disposal.

Submitters raised concerns about contamination at Cheltenham SRL station, contamination at the stabling facility, migration of contaminated groundwater plumes or landfill gas, spoil management and the human health risk assessment for the EES. I discuss these matters below.

Cheltenham SRL Station

A 3.5 m thick layer of contaminated fill will be excavated for the station box at Cheltenham. About 20% of the total excavated spoil from the site will be gasworks waste. There is potential for contaminated emissions to air, causing amenity and health risks. The management and disposal of contaminated spoil from the Cheltenham SRL station site needs to address: odours and contaminated dust and potential effects on local residents and users of the Southland Shopping Centre; and groundwater quality and contamination, including polycyclic aromatic hydrocarbons, metals, cyanide identified in fill.

Kingston City Council acknowledged there were options to manage potential groundwater plume migration, but were critical that the EPRs did not include this. The potential use of a tent or shed to control dust, odour and noise emissions from the construction site was also the subject of detailed consideration in the hearing and by the IAC. The IAC observed that a tent or enclosed shed with a single air emissions discharge point and air treatment/scrubbing would represent best practice and recommended that this level of dust control be adopted.

The IAC was concerned that the air transport modelling for dust that informed the human health risk assessment was not sufficiently conservative and the risk to the public may be greater than predicted. The IAC found that the proposed EPRs were not sufficient and recommended a new EPR C7 for air capture and treatment to address the potential risks. I support the IAC's recommendation. Given the quantity of contaminated material to be excavated from the site, the contaminants involved, the associated uncertainty regarding human health risk and the proximity of Southland Shopping Centre, I support the addition of EPR C7 to require suitable air cover and treatment controls during excavation of the station box to reduce the risks of harm to human health.

Stabling facility

Construction works at the stabling facility will disturb moderately contaminated fill and landfill leachate in the shallow groundwater. Additional mitigation measures are required to protect human health and the environment, including nearby residences to the west and south of the site.

The IAC identified the following key issues to be resolved in relation to contaminated land at the stabling facility:

- current site soil contamination presence and potential for disturbance of contaminated soils;
- potential sources of project tunnel and generated spoil and potential use of the site for temporary spoil storage (including gasworks waste excavated from Cheltenham); and
- risk of increased landfill gas exposure from construction surcharging and dewatering.⁸⁰

The degree of contamination at the stabling facility is uncertain. The site was a former quarry and has been operating for over a decade as a 'clean fill' landfill. The nearby former Henry Street landfill to the north and the former Ball Road landfill to the west could be sources of contamination at the stabling facility site. The IAC considered that the investigation of contamination at the stabling facility to understand the risks was limited and that further investigations may discover a greater degree of contamination. It also observed that site investigations have continued at the site since the EES was exhibited.

The IAC raised concerns about the human health impact assessment prepared as a part of the EES. In particular, it expressed concern about the lack of baseline health studies for the local population near the stabling facility site and their potential sensitivity to dust impacts due to prolonged dust exposure from nearby landfill and mining activities. While I agree that such information would have been useful, as noted in the human health impact assessment, limited health information is available at a community or suburb level, and this is a limitation for any human health impact assessment generally. To deal with the remaining uncertainty about potential human health impacts, the IAC proposed a new EPR C8 for a peer-reviewed quantitative human health risk assessment to inform the final selection of mitigation measures, which considers additional investigations for contaminated fill and groundwater and landfill gas. I support this recommendation. In particular, I agree that the human health risk assessment should be informed by updated contamination and spoil investigations and revised dust exposure modelling and by dust exposure baselining for the local area (EPR C8 points 1a to 1c). While I understand the IAC's intention to require specific consideration of local health baselines (EPR C8 point 1d), I am concerned about how this would be achieved in practice given the limited health information available at this level of detail and considering data confidentiality concerns. This is a matter that may benefit from further discussion between Kingston City Council and SRLA and I recommend changes to EPR C8 be considered which would require SRLA to work with council to identify local health baseline data for the assessment, to the extent practicable. Further consideration should also be given to the requirement in EPR C8 for review and approval by a suitably qualified and experienced human health risk assessment professional. While I understand the intent, consideration should be given to more specific language in the EPR to define who that might be, whether it be an individual or a group that comprises a number of specific skills operating collaboratively. I recommend that consideration of these changes be developed in consultation with and to the satisfaction of the EPA.

Surcharging for ground improvement works at the stabling facility site may lead to lateral migration of landfill gases, including methane and carbon dioxide, toward residential areas adjacent to the site. Contingency measures may be required to collect and treat intercepted landfill gases to prevent migration. The IAC recommended an amendment to EPR C4 to require landfill gas to be managed in accordance with the EPA Publication 788.3: Siting, design, operation and rehabilitation of landfills. I support this inclusion within EPR C4.

⁸⁰ IAC Report 1, p. 103.

In response to concerns about the potential use of the stabling facility for storage of contaminated waste, the IAC recommended changes to EPR C3 to prohibit the temporary storage or placement of prescribed waste from Cheltenham SRL station at other project sites (including the stabling facility). I support these changes subject to some minor modifications for improved clarity.

With the above amendments to the EPRs, and the proposed EPR C2 requiring a contingency and unexpected finds plan as part of the contaminated land management plan, I am comfortable that the impacts will be manageable at this site even if the level of contamination is found to be higher than predicted by the EES.

Landfill gas during tunnel construction

The section of tunnel between the stabling facility and Clayton SRL station passes several landfills and is likely to disturb subsurface areas previously impacted by landfill leachate and landfill gas. The EPA was concerned about the risks from landfills in this area. Migration of landfill gas is a potential health and safety risk to the community.

Investigations into landfill gas risk in this area have continued since the EES was exhibited and supplementary information was tabled during the IAC hearing. The EPA agreed with the updated risk appraisal and was satisfied that the proposed EPRs sufficiently addressed the risks identified.

The IAC was satisfied that the risks are suitably addressed by the reference design and the EMF. The IAC accepted that the risk of gases entering the tunnels or cross passages was suitably addressed by plans to monitor and mitigate landfill gas migration, as captured by proposed EPRs GW1, GW2, GW3 and C4. I support the findings of the IAC and am comfortable that the risk of landfill gas migration will be suitably managed across the project by the proposed EPRs.

Spoil management

Nearly a third of the estimated 3.5 million cubic metres of excavated spoil for the project is projected to be prescribed waste, 26% acid sulfate soil and rock and 3.4% contaminated waste mostly from Cheltenham. Prescribed waste typically requires disposal at a licensed treatment facility. SRLA proposes to reuse spoil wherever possible and to dispose of any excess spoil to existing licensed facilities.

The IAC found that there is a lack of detail, evaluation and efficacy with elements of SRLA's proposed spoil management strategy.⁸¹ The EPA also considered that the spoil management strategy was low on detail and that capacity available for disposing waste spoil needed greater appraisal given the demand from other major projects; however, the EPA was ultimately satisfied that its spoil management issues had been addressed through changes to the EMF. Kingston City Council raised concerns in relation to a perceived lack of detail in how spoil from the project will be dealt with, and called for a supplementary EES for spoil management, including addressing temporary spoil treatment and storage, measures to minimise risk to human health and the environment and suitable off-site receipt facilities.

The IAC recommended changes to EPR C3 to require EPA review and formal acceptance of an updated, peer-reviewed spoil management strategy, spoil management framework and all spoil management plans. I support these changes to EPR C3 in relation to the spoil management strategy and spoil management plans and agree that the spoil management strategy should be peer-reviewed for consideration by the EPA. The requirement for an updated spoil management strategy at EPR C3 will ensure that SRLA and the EPA are required to revise and approve (respectively) the strategy regarding the potential offsite capacity for waste spoil (considering cumulative effects of other projects) prior to spoil management plans being developed by the contractor. I also support the requirement in EPR C3 to require EPA review and approval of the spoil management plans. I note the proposed changes to EPR C3 referred to a spoil management framework that had not been proposed for the project and I propose changes to EPR C3 to remove any

⁸¹ IAC Report 1, p. 108.

reference to a spoil management framework. I consider these amendments will acceptably mitigate the potential environmental effects of spoil from the project.

Kingston City Council and the EPA considered the EES lacked clarity about potential use of various project sites to manage spoil from other project areas. About a third of total project spoil is expected to pass through the stabling facility from the TBMs. SRLA's closing submission stated there is no intention to process contaminated spoil at the stabling facility. In response to submitter concerns, the IAC recommended changes to EPR C3 to explicitly state that contaminated spoil from SRL Cheltenham station cannot be stored or processed at the stabling facility. Given the community concern about contaminated spoil and the availability of other established sites to receive waste, I support this recommendation subject to minor changes for improved clarity and I note this is consistent with SRLA's proposed approach.

Only small quantities of spoil contaminated with per- and polyfluoroalkyl substances are expected to be generated. Kingston City Council was concerned about whether there were adequate facilities available for disposal. The IAC expressed concern that if material with high concentrations of per- and polyfluoroalkyl substances were discovered during construction, there may not be an available facility in Victoria for its disposal, combined with this being the responsibility of the contractor. The IAC found that SRLA and its future contractors will need to work in 'lock-step' through the approvals process for spoil management.⁸² I am satisfied that the proposed EPRs C1 and C3 will ensure this occurs through requirements for ongoing investigations to inform environmental management and EPA involvement during development of spoil management plans. I am comfortable that waste spoil can be dealt with by the EPRs, amended in accordance with my recommendations.

Assessment

It is my assessment that the EES was adequate to identify the risks for most of the project area and to inform preliminary waste classification estimates for the reference design, and I note that soil and groundwater contamination investigations and waste classification is ongoing and will continue in accordance with EPR C1.

I support the new EPR C8 for a human health risk assessment for the stabling facility, subject to the changes discussed above to incorporate local health baseline data to the extent practicable and to require the assessment to be developed in consultation with and to the satisfaction of the EPA.

I support changes to EPR C3 to require EPA review and acceptance of an updated, peer-reviewed spoil management strategy that includes more detailed appraisal of potential capacity for waste spoil and to require EPA review and acceptance of the spoil management plans, subject to removing any reference to a spoil management framework.

It is my assessment that the framework provided by the duties imposed by the Environment Protection Act and by the EMF, including the EPRs, will provide for appropriate management of spoil, contamination and landfill gas impacts.

I support all other recommendations made by the IAC in relation to the contaminated land EPRs.

6.10 Surface water

Surface water effects are addressed in Chapter SW, Technical Appendices Q.1 and Q.2 of the EES and in Chapter 14 of the IAC Report. SRLA has proposed 10 EPRs to deal with surface water and two of these have been the subject of recommendations by the IAC.

⁸² IAC Report 1, p. 108.

Evaluation objective

Avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments and on land stability.

Assessment context

The EES investigated flooding, water quality and flow regime that have the potential to be impacted as a result of the project. The increase in site surface impervious area, and subsequent changes in runoff and drainage efficiency have the potential to result in the increased transport of pollutants to receiving waters within and downstream of the project. Surface water quality may also be affected through storage and handling of hazardous materials and mobilisation of sediment or contaminants.

Construction activities have the potential to modify surface water flows and increase flood risk at the construction sites, tunnels, tunnel portals and surrounding flood prone areas.

The IAC considered the key issues to be stormwater modelling for project sites and the integration of water sensitive urban design features, particularly at Sir William Fry Reserve at Cheltenham and Box Hill Gardens.

Discussion

Flood risk

According to the EES, project works such as site establishment and construction have the potential to impact the behaviour of floodwaters around the proposed project sites. The prediction of flood levels relied on hydraulic modelling. The IAC concluded that the EES and related follow-up studies during the IAC hearing provided adequate assessment of potential flood impacts to inform the project and potential mitigation measures. The IAC also noted that further modelling across a broader range of storm intensities and durations is planned during detailed design, as required by Melbourne Water guidelines.

In Burwood, the UDS includes the naturalisation of the concrete channel waterway and other landscaping improvements on the eastern side of Gardiners Creek. The IAC found that the potential flood impacts of this proposed naturalisation can be managed through recommended mitigation measures in the EPRs. I agree that site landscaping and building works will appropriately mitigate this potential flood risk in line with EPR SW8. I also note that Whitehorse City Council and other submitters support the proposed naturalisation and I believe that this will result in enhanced and improved amenity for the local Burwood community.

Water quality

The EES stated that alteration of water quality or flow regime in water catchments could occur due to stormwater or contaminated surface water runoff, leaks and spills, or accidental release from treatment or storage infrastructure or discharge of wastewater. Surface water impacts need to be minimised and managed in accordance with the Environment Protection Act, including the general environmental duty. The IAC also noted that the Environment Reference Standard plays a role under the Environment Protection Act and recommended this be included in EPR SW1, to address impacts during construction (i.e. to meet stormwater objectives). I support this recommendation as it provides a clear benchmark for monitoring and reporting on water quality.

During the IAC hearing there was criticism of the SRLA's approach to stormwater drainage at Cheltenham and of the lack of integrated water management concepts incorporated into the project. The IAC highlighted the need for SRLA to work closely with Kingston City Council to incorporate best practice for both integrated water management and water sensitive urban design at Cheltenham and the nearby Sir William Fry Reserve. I support the IAC's findings and recommend that SRLA work closely with relevant councils during the detailed design process, in line with EPR SW9, to improve environmental outcomes for the local community.

The IAC found that “In designing for water quality end-point treatment from the various sites, both existing and proposed new water treatment measures must be designed for all surface water flows through these sites (i.e. not just designing for water flow differential, based on any increase to impervious site surface area).”⁸³ The IAC recommended changes to EPR SW5 to require that modelling be included in the stormwater management plan, and to ensure that modelling of water quality treatment accounts for all site surface water flows (not just incremental flows, based solely on the change to impervious site area from the project). I support these recommendations as an appropriate way to demonstrate that runoff water quality will meet EPA requirements as outlined in EPA Publication 1739.1.

I am thus satisfied that surface water impacts can be appropriately mitigated and managed through the EPRs.

Assessment

It is my assessment that the potential impacts of the project on surface water are not likely to be significant and can be minimised, mitigated or addressed in an acceptable way through application of the surface water EPRs, as amended in accordance with the IAC’s recommendations and this assessment, particularly through appropriate consultation during the detailed design phase.

6.11 Groundwater

Groundwater effects are addressed in Chapter GW, Technical Appendices K.1 and K.2 of the EES and in Chapter 14 of the IAC Report. SRLA has proposed six EPRs to deal with groundwater effects and one of these has been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments and on land stability.

Assessment context

The groundwater table is less than 30m below ground level across most of the tunnel alignment and construction works will intercept groundwater across all project components. The groundwater table may be lowered due to water seeping into excavations and structures during construction and operation until such time as the excavations are ‘tanked’ (i.e. sealed). Lowering of groundwater levels would decrease further from the excavations.

Groundwater drawdown can reduce groundwater availability for groundwater users, including bore users and groundwater dependent ecosystems (e.g. vegetation, creeks or wetlands). Drawdown can also reduce groundwater quality by causing migration of contaminated groundwater plumes into previously unaffected areas, releasing landfill gases from landfill leachate or by exposing acid generating materials to oxygen. Inflows to excavations may contain contaminated or acidic groundwater, requiring treatment and disposal.

There are more groundwater users in the southern section of the alignment where bore users and groundwater dependent ecosystems access higher quality groundwater that moves freely in sandy clays and sand. Potential groundwater dependent ecosystems are also located near the alignment, including at Gardiners Creek and Damper Creek near the Burwood SRL station.

The EES identified areas of groundwater contamination near the alignment, including the former Highett Gasworks site near the Cheltenham SRL station and current and former landfills near the stabling facility site. Construction of the project is likely to encounter contaminated groundwater and to generate acidic groundwater conditions between the Cheltenham and Clayton SRL stations.

⁸³ IAC Report 1, p. 187.

The proposed mitigation measures focus on minimising groundwater inflows, including use of a TBM for tunnel construction, and using diaphragm walls and secant piles walls for excavations.

Groundwater impacts must be managed in accordance with the Environment Protection Act, including the general environmental duty.

Discussion

The construction of the project will lower the groundwater table around the station boxes and the eastern tunnel portal for up to five years post-construction (once excavations are fully sealed). Following 'tanking', groundwater is expected to return to near-normal levels. The use of a TBM for tunnel construction will effectively seal the tunnels as the TBM progresses, minimising groundwater inflow.

Submitters raised concerns about the groundwater impact assessment method, potential impacts on existing groundwater users and groundwater dependent ecosystems, migration of contaminated plumes and disposal of excess groundwater. I discuss these matters below.

Assessment method

The IAC heard considerable evidence on the EES investigations and the adequacy of the groundwater model. The IAC found that the modelling undertaken for the EES was suitable to assess potential impacts and evaluate the effectiveness of mitigation measures and that sufficient data was collected to inform the assessment. The IAC also noted that EPR GW2 requires further investigations and monitoring data to be used to refine groundwater models and management measures. I am comfortable that where uncertainty exists in the assessment undertaken to-date, the EPRs provide a framework to inform ongoing refinements to the assessment, during detailed design and construction, to ensure impacts are appropriately avoided and minimised.

Impacts on groundwater availability

The IAC heard from Kingston City Council that there are a lot of groundwater bores around the proposed Cheltenham SRL station and the stabling facility (over 1,000 in Kingston and Bayside local government areas) that could be affected by groundwater drawdown. Kingston City Council was concerned about the criteria used to assess drawdown effects on groundwater extraction bores. The IAC concluded that EPR GW3 suitably addresses these concerns. I am satisfied that the framework provided by EPR GW1, which requires the project design to minimise groundwater drawdown, will appropriately manage the impacts of groundwater drawdown on groundwater availability. In addition, GW3 includes mitigation measures in the case of unexpected drawdown at groundwater wells.

Kingston Heath Golf Club (KHGC), located to the south of the stabling facility, is a major groundwater user in the area. Kingston Heath Golf Club was concerned about the potential impacts on the golf club if the proposed EPRs failed to effectively minimise impacts. Kingston Heath Golf Club and SRLA's expert witnesses agreed in conclave that major groundwater users should be consulted during development of the groundwater management plan (EPR GW3), to extend groundwater monitoring to five years post-construction and to make groundwater monitoring data publicly available at least annually. The IAC was satisfied the concerns of Kingston Heath Golf Club could be suitably addressed by EPRs GW1, GW2, GW3 and GW5, subject to the following two changes to EPR GW5:

- extend the duration of groundwater monitoring from two years to five years following the completion of tanking of underground structures, or until the independent environmental auditor verifies that groundwater levels have recovered; and
- require at least annual publication of groundwater monitoring data along with associated explanations of its limitations, including data reports related to groundwater contamination testing.

I support the IAC's recommended changes to EPR GW5.

The EES identified potential groundwater dependent ecosystems to the east and to the west of the proposed Burwood SRL station associated with Gardiners Creek and Damper Creek. Kingston City Council advised that many groundwater dependent ecosystems are associated with the shallow groundwater system in the southern part of the project area. I note that effects on these ecosystems will be minimised through implementation of EPRs GW3 and GW5, which contain monitoring requirements to assess the impacts of reduced groundwater contribution to groundwater dependent ecosystems and to maintain the quantity and quality of groundwater contribution to them.

Impacts on groundwater quality

Kingston City Council noted the southern project area has many known contaminated sites that could be leaching into groundwater, including the former Highett Gasworks site near the Cheltenham SRL station and existing or former landfills around the stabling facility. Kingston City Council was concerned that the project could mobilise contaminated groundwater plumes. The IAC Report noted that the EES sets out that the monitoring, modelling, design measures and plans required by EPRs GW1, GW2, GW3 and GW5 would suitably control the risk of migration from contaminated sites. The EPA made recommendations regarding contamination and groundwater, which were implemented by SRLA in the Day 4 EPRs.⁸⁴ I agree with the IAC's assessment that impacts on groundwater quality and the potential risks to human health and the environment will be adequately identified and managed through EPRs GW1 to GW6. The risks associated with acid sulfate soils and rock will be managed through implementation of EPRs GW1 and GW5 and the acid sulfate soil and rock management plan in EPR C6.

Groundwater disposal

Excess groundwater that flows into excavations during construction will require disposal. Disposal will occur in accordance with the groundwater disposal strategy required by EPR GW4, including a requirement for approval of disposal from the relevant water authority. The groundwater disposal strategy will be developed in consultation with water authorities to be consistent with the EPA waste management regulations.

Assessment

It is my assessment that:

- The impact assessment in the EES was adequate to understand potential groundwater impacts and to evaluate mitigation measures. Remaining uncertainty associated with the modelling will be addressed through implementation of the EPRs, including the requirements in EPR GW2 for further investigation and modelling;
- The potential groundwater level impacts will be minimised through design, as required by EPR GW1 and the management measures required by the groundwater management plan (EPR GW3);
- The potential groundwater quality impacts will be minimised through design, as informed by modelling and ongoing monitoring. The risks to human health and the environment will be minimised in accordance with the general environmental duty through implementation of the EPRs for groundwater and land contamination (EPRs C1-C6);
- I support the IAC's recommended changes to EPR GW5 subject to minor changes to clarify the role of DELWP; and
- I support all other recommendations made by the IAC in relation to the groundwater EPRs.

⁸⁴ Tabled document 796.

6.12 Land stability

Ground movement effects are addressed in Chapter GM and Technical Appendices J.1 and J.2 of the EES and in Chapter 14 of the IAC Report. SRLA has proposed four EPRs (GM1 to GM4) to deal with ground movement and land stability and one of these has been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments and on land stability.

Assessment context

Ground movement may occur during construction works, including tunnel boring and excavation works, or through settlement of sediments due to groundwater drawdown. Ground movement can result in damage to assets like buildings, infrastructure and utilities in the vicinity of the project.

The EES assessed the existing geological and hydrogeological conditions along the project alignment and identified existing assets such as buildings (including heritage-listed structures), utilities and infrastructure that could be impacted by ground movement during construction. The ground movement impact assessment identified a ground movement 'zone of influence', within which ground movement could lead to impacts on existing assets and assessed the potential for impacts within this zone of influence. Assets particularly vulnerable to ground movement within this zone are arterial roads, buildings and landfills.

Discussion

The EES predicts some moderate impacts to roads in the southern portion of the project. Ground movement effects on roads would be temporary, progressing over a year or so close to station excavations (i.e. Nepean Highway, Normanby Road and Clayton Road) and over about a month at roads affected by tunnelling or cross passages (i.e. Kingston Road, Dingley Bypass, Clayton Road and Waverley Road). The EES predicts negligible ground movement for most of the approximately 2,250 buildings within the zone of influence for ground movement and minor impacts to some buildings near the SRL stations at Glen Waverley, Burwood and Box Hill, the stabling facility and the emergency support facility. A minor rating reflects potential for cosmetic damage that could be readily repaired.

Some submitters were concerned about how damage to buildings and assets will be measured and monitored and the process and responsibility for repairs (including the need for independence), requests for pre-construction and post-construction condition surveys, the assessment methods and the duration of monitoring pre- and post-construction. The IAC acknowledged further consultation with asset owners during detailed design is expected and is accounted for in EPRs GM1 and GM2. I agree and am comfortable that EPR GM2 provides a sound framework for condition surveys of assets and that EPR GM4 makes it clear that the proponent is responsible for repair works.

Monash University was concerned about ground movement and suggested the potential risks could be decreased by altering the proposed tunnel alignment. I note this was subsequently agreed to by the proponent.

Kingston City Council raised concerns about the potential effects on landfills, particularly near the stabling facility. The IAC heard that predicted ground movements were within the strain capacity for clay-based or geomembrane landfill liners. The residual risk associated with ground movement impacts on landfill liners would be addressed by EPR GM1, which would require updated assessments of impacts during detailed design including the need to review predicted movements related to landfill liners. I consider that minor changes to EPR GM3 are warranted to ensure that acceptability criteria for landfill liners are considered in the ground movement plans.

The EPRs require geological and groundwater models to inform detailed design and construction techniques (EPR GM1), pre- and post-construction asset condition surveys (EPR GM2), ground movement plans (EPR GM3) and, if required, remediation and repair work to any damage resulting from the project (EPR GM4).

The IAC agreed that the proposed EPRs will provide acceptable asset protection and risk coverage in relation to ‘damage to properties that might arise from being in the vicinity of the tunnels or stations’ and that they will suitably address potential impacts through detailed design, construction, and post-construction.⁸⁵ The IAC found that the EPRs also provide adequate protection for heritage structures. I support the IAC’s findings and note that the framework provided by the EPRs for managing ground movement impacts is similar to other large tunnelling projects in Melbourne.

The IAC recommended minor changes to EPR GM1 to review and revise the geology and groundwater models as new information becomes available. I support those changes, subject to minor editorial updates for clarity.

The IAC also heard submissions about the introduction of planning permit triggers to protect project infrastructure from development near the project alignment, in relation to potential effects from ground movement. The IAC considered that the planning referral triggers provide suitable criteria (including the number of building levels and depth of excavation) to determine whether a future development within the SCO15 requires assessment by the referral authority. SRLA proposed changes to the SCO15 Incorporated Document in response to submissions. The changes limit the types of works that trigger referral under SCO15 to only include proposed alterations that would change a building’s overall mass, require modifications to its foundations or involve excavations. The IAC found that SRLA’s proposed changes were acceptable and supported SLRA’s proposed final version of the SCO15 Incorporated Document contained in tabled document 790. I support the intent of these changes, noting however that the draft PSA can still be updated should any further amendments be required.

Assessment

It is my assessment that the ground movement effects from the project have been assessed adequately and that the potential impacts from project-related ground movement are acceptable with adequate environmental management through the EPRs.

I support the IAC’s recommendations regarding the ground movement EPRs, subject to some minor changes to EPR GM1 (edits for clarity), EPR GM2 (to ensure all potentially affected assets are listed in the asset condition database) and EPR GM3 (to ensure that ground movement acceptability criteria are considered for landfills).

6.13 Aboriginal cultural heritage

Aboriginal cultural heritage effects are addressed in Chapter ACH, Technical Appendix A.1 of the EES and in Chapter 5 of the IAC Report. SRLA has proposed one EPR to address Aboriginal cultural heritage effects and requirements in the UDS to facilitate the expression of Aboriginal cultural values into the final physical form of the project.

Evaluation objective

Avoid or minimise adverse effects on Aboriginal and historical cultural heritage values and maximise opportunities to appropriately complement and preserve these values.

⁸⁵ IAC Report 1, p. 201.

Assessment context

The project is within the boundaries of two registered Aboriginal parties (RAPs). The northern section of the project occurs within Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation's (WWCHAC) boundary and the southern portion of the project falls within the Bunurong Land Council Aboriginal Corporation (BLCAC) responsibility. The boundary for these RAPs is located midway along the tunnelling between Monash and Glen Waverly SRL stations.

The majority of tunnelling works is proposed to occur in bedrock at depths within geological formations that are very likely to predate Aboriginal occupation of the landscape. Therefore, EES technical investigations prioritised the consideration of potential effects on Aboriginal cultural heritage on surface construction works and surface impacts of TBMs.

EES investigations identified two Aboriginal places near the proposed tunnel section between Cheltenham and the stabling facility, near the Dingley Bypass area and Burwood SRL station. Low density artifact scatters were found at these places and are now listed in the Victorian Aboriginal Heritage Register.

Since the EES was published, SRLA has progressed complex assessments in line with the Aboriginal Heritage Act and to the satisfaction of WWCHAC and BLCAC. As noted at the IAC hearing, two additional finds of Aboriginal cultural material (stone artefacts) were made during these investigations. The first was found in a disturbed context within the gardens at Normanby House at the Monash SRL station. The second was found undisturbed in excavations at the Heatherton Stabling Facility site.

Potential impacts to Aboriginal places, Aboriginal cultural heritage and management of these impacts are to be largely addressed through two cultural heritage management plans (CHMPs) to be approved by WWCHAC and BLCAC under the Aboriginal Heritage Act.

Discussion

The IAC concluded that the project's likely impacts on Aboriginal cultural heritage values can be adequately addressed through the implementation of the approved CHMPs. I agree with the IAC's findings.

Aboriginal cultural themes document

Beyond the CHMP, the IAC noted SRLA's intent to embed Aboriginal cultural heritage values into the design of the project through implementation of the UDS and further engagement with traditional owners. The UDS provides direction that the "design must seek and provide opportunities to represent the knowledge, insights and Connections to Country of the Traditional Owners who continue to be custodians of the land via a meaningful, authentic and collaborative process."⁸⁶

The UDS includes references to Aboriginal cultural heritage across several project-wide requirements. The IAC heard that SRLA has commenced discussion with the BLCAC and WWCHAC on the preparation of an Aboriginal cultural themes document, the purpose of which is to record tangible and intangible Aboriginal cultural values to inform design at each of the SRL East stations. I support this approach to achieving these aspirations set out in the UDS. Noting there is an opportunity for this cultural values assessment to also inform the heritage interpretation strategy referred to in EPR HH8, I recommend that the EPR HH8 be amended to reflect this.

It is my expectation that SRLA will appropriately resource RAPs and/or traditional owners so that they can meaningfully participate in this process.

Traditional owner engagement on future design and planning processes

A number of submitters advocated for additional involvement of traditional owners, particularly in relation to Burwood SRL station and the naturalisation of the Gardiners Creek corridor. The UDS includes

⁸⁶ Tabled document 797, Day 4 UDS, p. 58.

requirements (BUW3 and BUW5) for integrating Aboriginal cultural values and themes and facilitating participation of the WWCHAC. The IAC was satisfied that these requirements would provide suitable opportunities for engagement with the traditional owners on matters relating to the Gardiners Creek corridor. I also support this approach.

Consultation with traditional owners on urban design landscape plans

I acknowledge SRLA's clear intent to work collaboratively with the WWCHAC and the BLCAC and I expect that SRLA will continue this engagement during project design and delivery.

Section 4.6.11 of the SCO14 Incorporated Document highlights the parties who should be provided with the UDLP for consultation prior to submission to the Minister for Planning for approval. I recommend this be amended to include traditional owners, WWCHAC and BLCAC. It is appropriate that traditional owners be provided with an opportunity to comment on the UDLPs alongside other relevant government agencies. The UDLPs will include a design response to a variety of factors, including the cultural values assessment. Consequently, traditional owners should be engaged as any other government partner would as part of this process.

Assessment

It is my assessment that:

- the likely impacts on Aboriginal cultural heritage values from the project can be adequately managed and that the implementation of the two CHMPs under the Aboriginal Heritage Act is an appropriate mechanism for doing so;
- traditional owners need to be consulted in the preparation of UDLPs and during the public comments period. Section 4.6.11 of the SCO14 Incorporated Document should be altered to explicitly require consultation with traditional owners, including WWCHAC and BLCAC;
- EPR HH8 should be amended to include consideration of the Aboriginal cultural themes document when preparing the heritage interpretation strategy; and
- active engagement with traditional owners should continue with WWCHAC and BLAC during detailed design and construction.

6.14 Historical heritage

Historical heritage effects are addressed in Chapter HH, Technical Appendices L.1 and L.2 of the EES and in Chapter 5 of the IAC Report. SRLA has proposed nine EPRs to deal with historic heritage and one of these has been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise adverse effects on Aboriginal and historic cultural heritage values and maximise opportunities to appropriately complement and preserve these values.

Assessment context

The project area features several discrete historical heritage places that may be directly impacted during construction with the demolition and/or relocation of specific assets and buildings, or indirectly through vibration and ground movement. These include heritage places listed in the Victorian Heritage Register and Victorian Heritage Inventory under the Heritage Act and in the heritage overlay in the planning schemes.

In large-scale projects such as this, there is a balance to be struck between modernising and developing new infrastructure and preserving historical and social associations communities have with places of local historical heritage value. The potential for historical heritage impacts are greatest in the Box Hill Activity Centre, where project construction will demolish buildings along Station Street and Whitehorse Road, and at the Burwood SRL station, which overlaps with the former Burwood Skyline Drive-In site.

Key historical heritage values identified by the IAC include the former Drive-In site and multiple locations in Box Hill, particularly landmarks such as the former Railway Hotel, the Colonial Gas Association building and 948 Whitehorse Road. The adequacy of the cultural heritage assessment and the EPRs, undertaking internal archival recording and the approval of the external conservation works were identified as the key issues to be resolved by the IAC.

Discussion

Overall, the IAC was satisfied that the EES assessment and overarching EPRs are appropriate and will mitigate adverse impacts to historical heritage values at risk. I support the IAC's recommended changes to the historical heritage EPRs and agree with its conclusions, as elaborated on below.

During the IAC hearing, it was mentioned that heritage overlays only require a permit for external alterations. Councils sought photographic recording of interiors for heritage places where 'original and early features' are still in existence. The IAC agreed that this can be reviewed on a case-by-case basis under EPR HH3 and there is no need to specifically require this. I accept this finding.

I support the IAC's recommendation that implementation of a heritage interpretation strategy for the former Burwood Skyline Drive-In under the amended EPRs (refer to Day 4 EPRs, tabled document 796), would adequately manage the potential impacts at Burwood, rather than retention of some of the remnant elements, as sought by Whitehorse City Council.

There was also debate about the extent to which councils would determine the 'scope of external conservation works' during consultation with contractors. The IAC found that conservation works to buildings should be approved by the relevant council and recommended EPR HH9 be amended to reflect that the scope of conservation works for specific heritage structures be approved by Whitehorse City Council, as would normally be the case under the heritage overlay and in the absence of the SCO14 Incorporated Document. I support the IAC's recommended changes to EPR HH9, to help ensure the protection of the following heritage structures in the Whitehorse Road area:

- former Railway Hotel;
- South Africa and China Memorial;
- Whitehorse Hotel Statue and Portico;
- Cr Ellingworth Commemorative Drinking Fountain; and
- three lamp post standards (if affected by works).

The IAC agreed that there was value in retaining as much of the Colonial Gas Association building as possible, and recommended changes in EPR HH9 requiring SRLA to seek to retain all or parts of the building and 948 Whitehorse Road in consultation with Whitehorse City Council. I support this recommendation.

Assessment

It is my assessment that potential impacts on heritage values are not likely to be significant with appropriate mitigation required through the recommended EPRs, as amended in line with this assessment. I support all other recommendations made by the IAC in relation to the historical heritage EPRs.

6.15 Biodiversity

Biodiversity effects are addressed in Chapter ECO and Technical Appendices G.1 and G.2 of the EES and in Chapter 7 of the IAC Report. SRLA has proposed five EPRs to deal with biodiversity effects and two of these have been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise adverse effects on vegetation (planted, remnant and regenerated), tree canopy and native terrestrial and aquatic flora and fauna.

Assessment context

The project area is in a highly modified setting that has undergone residential, commercial and industrial development. Within these urban areas, significant pockets of remnant native vegetation or areas of revegetation remain.

The project has the potential to impact flora and fauna in the form of habitat loss, lighting and noise. An estimated 0.782 hectares of native vegetation would be removed for the project, which would require offsetting. In areas of fauna habitat, artificial lighting and noise from the project has the potential to impact fauna behaviour.

Discussion

The IAC was satisfied that the assessment of biodiversity effects was appropriate and that impacts can be addressed through the future detailed design process. I agree with this finding and support the IAC's recommendation that EPR EC1 be amended to require pre-construction assessments to be conducted in consultation with the relevant the land manager and/or council.

I note that several submitters were concerned about loss of raptor habitat at the proposed stabling facility. The IAC heard that the site's size and lack of human activity provides utility for raptors and other fauna, but that the site has little remnant vegetation and biodiversity values. The IAC concluded that the EMF and requirements in the UDS that would seek to improve habitat values, including through provision of landscape buffers, would adequately mitigate ecological impacts. I agree with this assessment.

The IAC recommended that EPR EC4 be amended to apply best practice lighting design principles in accordance with Appendix A of the National Light Pollution Guidelines for Wildlife to the stabling facility. I support this recommendation as it would improve the overall habitat value of the retarding basin area at the stabling facility.

The IAC concluded that impacts on aquatic ecology will be limited and appropriately mitigated with the proposed measures in the ecology EPRs. I agree with the IAC's findings.

Assessment

It is my assessment that:

- The potential impacts on native vegetation and biodiversity values have been properly assessed and are not likely to be significant;
- I support the IAC's modification to EPR EC1 that will ensure local impacts will be assessed through the detailed design phase;
- I support the IAC's modification to EPR EC4 to protect fauna from lighting impacts in the vicinity of waterbodies at the stabling facility;
- The construction impacts on vegetation and fauna can be appropriately mitigated through the EPRs and UDS; and
- I support all other recommendations made by the IAC in relation to the ecology EPRs.

6.16 Arboriculture

Arboriculture effects are addressed in Chapter ARB, Technical Appendices D.1 and D.2 of the EES and in Chapter 7 of the IAC Report. SRLA has proposed six EPRs to deal with the removal, protection and replacement of trees and vegetation and these have all been the subject of recommendations by the IAC.

Evaluation objective

Avoid or minimise adverse effects on vegetation (planted, remnant and regenerated), tree canopy and native terrestrial and aquatic flora and fauna.

Avoid or minimise adverse effects on landscape, visual amenity, open space, recreational and public realm values and capitalise on opportunities to enhance these values.

Assessment context

Trees in the urban environment, including in parks and tree-lined streets, make an important contribution to local amenity, landscape character and sense of place.

The EES identified 146,957 square meters of tree canopy cover from approximately 3,257 trees within the project sites. The EES estimated that 49% of this canopy cover (54,948 square meters from 1,412 trees) would be affected by the project prior to mitigation measures. The project may also potentially impact a further 409 trees through indirect effects.

Including the project's initial works, the cumulative impact from the project will likely require the removal at least 72,119 square meters of canopy cover, which translates to the removal of an estimated total of 2,138 trees. During the construction period and while mitigation is still being implemented, the community will experience an extended loss of amenity. Loss of trees has the potential to increase the urban heat island effect, impact social amenity and biodiversity values and affect sense of place.

SRLA proposes to mitigate these impacts through a commitment to double tree canopy cover removed by the project by 2050. The removal, protection, planting and maintenance of trees will be undertaken in accordance with the arboriculture EPRs AR1 to AR4, and will also be guided by the ecology EPRs EC1 and EC2, landscape and visual amenity EPR LV2, the UDS and the public open space framework.

Discussion

The EES investigations relied on a mixture of satellite data and on ground assessments. The IAC heard that not all trees were assessed by a person and, in these cases, SRLA relied on remote sensing information taken from satellite data to make tree impact assessments. I agree with the IAC's view that the assessment to date was fit for purpose. Further targeted assessment is expected during the detailed design phase to confirm the amount of canopy loss, identify opportunities to retain and protect trees and determine where canopy replacement can occur.

Communities hosting SRL infrastructure will likely experience a significant loss in amenity, landscape character and a disrupted sense of place that will not be fully ameliorated until replacement plantings have suitably matured, potentially until 2050. This impact will be mitigated through the arboriculture EPRs, including early and staged plantings where possible. In the long term, impacts will be mitigated through SRLA's commitment to double tree canopy by 2050. The IAC agreed that the requirement to replace double the tree canopy area removed by the project is an appropriate commitment to mitigate impacts on vegetation, tree canopy and terrestrial flora and fauna. I support the IAC's finding in this regard.

The project has the potential to exacerbate urban heat island effects through loss of vegetation and tree canopy cover during and post construction. However, I am satisfied that the potential heat island effects will be mitigated in extent and duration through the implementation of EPR AR4 and LV1. I support the IAC's recommendation that EPR AR4 be amended to include the need to consider urban heat island effects when locating replacement plantings.

Tree inventory database

Kingston City Council's submission recommended the inclusion of a tree inventory database (EPR AR1). The submission also recommended further assessment to supplement the findings of the EES and to facilitate appropriate triage of tree removal, retention and replanting. This assessment was recommended to be incorporated into EPR AR1 and to support assessments to inform the tree removal plan (EPR AR2), tree protection plan (EPR AR3) and tree canopy replacement plan (EPR AR4).

The IAC supported the preparation of a tree inventory database but did not accept that there was a need for further assessment. I support the IAC's finding that a new EPR AR1 should direct SRLA and its contractors to maintain a tree inventory database. I also recommend revision to EPR AR1 to clarify the purpose of the tree inventory database and how it will be used, as well as the key metrics to be collected, so that the benefits of the database are realised. The key metrics of tree health, tree structure, horticultural value, arboricultural value, biodiversity value and social value should be captured as appropriate. I also recommend EPR AR1 be amended to clearly state that EPR AR1 be used to inform, alongside the UDS, tree removal plans (EPR AR2), tree retention plans (EPR AR3) and tree replacement plans (EPR AR4).

Social value of trees

Understanding the local social significance of trees is important to sense of place and it should be informed by local experience and knowledge held by land managers, including councils, who have important local insights. As such, social value should be considered as a separate factor to tree health when determining retention value.

The EES Arboricultural existing conditions report⁸⁷ determined the arboricultural value of trees using a coarse measure of significance. This measure aggregated the values of health, structure, botanical, horticultural and social significance of the trees, resulting in a low, medium and high rating. The social value of the tree was attributed by SRLA's consultants without wider consultation with the relevant council and other land managers. While this is an appropriate method for this early stage of the project, it does not provide sufficient information to inform detailed design. A more informed triage is needed for project implementation, to determine the need for a tree to be retained or removed.

It is my recommendation that SRLA capture the social significance of trees in consultation with local land managers, including councils for inclusion in the tree inventory database, along with other metrics such as tree health, structure and biodiversity values.

Cumulative impacts to tree canopy

SRLA is proposing to remove 54,948 square metres of canopy cover and the IAC heard that the project may potentially impact an additional 18,375 square meters of canopy cover through intrusion into tree protection zones. This may affect the health of the tree and ultimately result in the tree's removal. Additionally, 15,171 square meters of tree canopy will be removed for the project's initial works. This will result in a cumulative loss of 72,119 square meters of canopy cover, with another 18,375 square meters that may be lost through intrusion in the tree protection zone. The majority of impacts from initial works will occur at the proposed stabling facility, within Kingston City Council's local government area. However, the timing and extent of mitigation for initial works are subject to other planning processes. I encourage SRLA to replace lost canopy from both initial works and the project through a coordinated strategy to ensure a consistent approach to mitigations and to give the community clarity and certainty as to the level of mitigation they will receive.

Viability of canopy replacement strategy

Some submissions raised concerns about the viability of the canopy replacement strategy and the capacity for the project to replant trees in the vicinity of where they are removed. SRLA's expert witness Ms Caffin provided draft urban design drawings to demonstrate that tree canopy targets could be applied to the project in principle. However, the documents used in the analysis were preliminary drafts of plans that did not thoroughly consider the competing demands of the project that may limit the planting of trees in this area.

⁸⁷ SRL East EES technical appendix D1, Figure 4.2.

The IAC heard that it is unlikely that the project area alone can host sufficient tree plantings to meet EPR AR4. SRL station sites are impacted differently by loss of canopy cover from the project. Similarly, the new stations will likely have different capacities for hosting new plantings. SRLA's expert witness' response to the IAC's request for more information (tabled document 314) indicates that some stations are unlikely to support enough new plantings to reach tree canopy cover target. This will require a certain percentage of the tree plantings to be planted outside of the project land. The IAC heard from SRLA's expert witness that the Cheltenham SRL station could accommodate 20% of the EPR canopy cover replacement target within the project land, while Monash could accommodate 28%, Glen Waverly could accommodate 56% and Burwood SRL station could accommodate 20%. Box Hill and Clayton SRL stations could both accommodate 100% of the EPR canopy cover replacement targets within the project land.

I encourage SRLA to collaborate with councils and land managers to identify locations to host additional canopy cover and to prioritise the areas closest to the project with capacity to host plantings to ensure that communities will not be disproportionately affected by loss of amenity and/or biodiversity value provided by the current trees.

Early amenity plantings

I consider that the early planting of shrubs can also reduce amenity impacts and may give SRLA more flexibility when deciding how best to minimise the duration of amenity impacts. I recommend that EPR LV2 be amended to include vegetation in addition to trees, noting that sometimes shrubs and other plantings are better suited in specific locations. This should also be considered in implementing EPR LV5.

Assessment

It is my assessment that arboriculture effects from the project have been assessed appropriately and can be mitigated over time through the implementation of EPRs and the UDS relating to arboriculture. These take account of tree health, biodiversity value, historical value, amenity value and contribution to reducing the urban heat island effect. However, the project does not have a mechanism for understanding the local, social significance of trees, which are important contributors to sense of place.

I recommend:

- the IAC's proposed changes to EPR AR3 be adopted;
- the inclusion of social value of trees in EPR AR1;
- improved cross referencing of EPRs to ensure AR1 informs the development of plans required by EPRs AR2 and AR4;
- inclusion of the IAC's recommended wording in EPR AR4;
- update EPR LV2 to allow for early plantings of shrubs and other vegetation as well as trees.

I support all other recommendations made by the IAC in relation to the arboriculture EPRs.

In addition to my recommendations above, I also encourage SLRA to consider the following in the implementation of the project and EMF:

- consider the cumulative impacts of tree removal associated with the project and initial works in the tree canopy replacement plan required via EPR AR4 and align tree replacement efforts for both; and
- consider how public open space replacement might also deliver equitable replanting so that communities are not disproportionately affected by loss of amenity due to reduced tree cover.

6.17 Greenhouse gas emissions and resource efficiency

Greenhouse gas emissions and resource efficiency is addressed in Chapter GG, Technical Appendix I.1 and Attachment H – Sustainability Objectives and Targets in the EES and in Chapter 10 of the IAC Report. SRLA has proposed ten EPRs to deal with greenhouse gas emissions and resource efficiency.

Evaluation objective

Avoid and minimise greenhouse gas emissions and capitalise on opportunities to reduce waste and use resources efficiently.

Assessment context

The Climate Change Act establishes the Victorian Government's commitment to net zero emissions by 2050 and embeds climate change considerations into government decision making.

The EES and the IAC considered the sources and quantities of the project's greenhouse gas emissions during construction and operation.

The EES predicted the project would generate a total of 1,858,271 tonnes of greenhouse gas emissions during construction. Post-exhibition of the EES, SRLA's expert witness for greenhouse gas emissions Mr Wilkinson revised this down to 1,787,560 tonnes owing to changes in emission factors. The greatest source of emissions would be embodied carbon in construction materials (44%), followed by electricity consumption (37%) and fuel use (16%). Potential mitigation measures were identified in the EES and, if implemented, could reduce emissions from the project's construction.

The EES stated that the project's operation would have a small emissions profile given the Victorian Government's commitment to 100 per cent renewable energy for all public transport by 2025 (Victoria's Climate Change Strategy, 2021). EPR SGG7 commits the project to achieving carbon neutrality through offsetting any residual emissions.

The project would reduce Victoria's transport greenhouse gas emissions by shifting use of private vehicles to active and public transport.

SRLA described an approach to considering sustainability and climate change in the planning, design and delivery of the project via its Sustainability Objectives and Targets (October 2021). Other topics covered within the document include sustainable use of water, use of recycled and reused materials and responsible management of waste.

To meet the general environmental duty, as discussed at Section 3.3, SRLA is required to minimise the risks of harm to human health or the environment from pollution or waste, including greenhouse gas emissions, 'so far as reasonably practicable'.

Discussion

The IAC concluded that the proposed EMF and sustainability and greenhouse gas EPRs, including the sustainability objectives and targets, would provide a sound basis for greenhouse gas emission mitigation and resource efficiency over the project's lifecycle and I agree with this conclusion.

Given the scale of this project and its large greenhouse gas emissions during construction, there is a clear need to develop strategies to reduce emissions, in particular, through examination of materials, energy use and fuel use. EPRs SGG8, SGG9 and SGG10 would require the project's contractors to investigate and implement opportunities to reduce emissions from these sources.

SRLA refined the SGG EPRs during the IAC hearing to clarify the level of ambition and versions of the sustainability rating schemes adopted for the project. SRLA proposed that these rating schemes would be used to drive, verify and benchmark progress in sustainability. The IAC noted that the use of these rating schemes and the level of ambition proposed are generally considered best practice in Australia.

EPR SGG1 was also refined during the IAC hearing to include a commitment to publicly report progress against sustainability targets. I agree that public reporting is important to drive outcomes and provide transparency. I recommend that an appropriate frequency of reporting should be specified in the EPR.

Energy technologies and use of recycled and reused materials is rapidly evolving and anticipated to develop over the design and construction phases of the project. To meet the general environmental duty, greenhouse gas emission reductions should continue to be pursued over the project's life.

Assessment

It is my assessment that the proposed EPRs provide a sound basis for minimising greenhouse gas emissions and capitalising on opportunities to reduce waste and use resources efficiently, subject to a minor change to EPR SGG1. I support all other recommendations made by the IAC in relation to the sustainability and greenhouse gas EPRs.

7. Conclusions

SRL East will be the first stage of a city shaping project, but will in its own right, positively change the areas that are most directly affected by necessary interruption and change that will occur to facilitate its delivery.

This assessment has considered the environmental effects of the project.

I am satisfied that the environmental effects have been properly identified and considered. I am also satisfied that my assessment provides a proper basis for the consideration of the approvals required by the project under other legislation, including under the Planning and Environment Act.

I have been greatly assisted in this assessment by the efforts of the IAC, its report and the work of my department.

The project will involve environmental effects, including significant environmental effects, commensurate with a project of this scale and intent. The assessment reveals that those effects can be mitigated to some extent, and that even where the effects of the project cause significant disruption, there remain options to lessen the burden on those most affected.

In general terms, the project has obvious merit. I am fortified in that view by the findings of the IAC, and indeed by the positions advanced by stakeholders who were critical of some aspects of the EES or the project. I consider that none of the matters raised could or should result in the project not proceeding, but I do consider that the governance framework for the implementation of the project needs to properly address and mitigate the environmental effects, in the manner set out in the body of this assessment.

Table 2 sets out a summary of my response to the IAC's general recommendations. Appendix A sets out a summary of my response to the IAC's detailed recommendations to the EPRs. My response to the IAC's recommendations on matters not covered in the general recommendations or the EPRs is contained in the body of this assessment.

Table 2: Response to general IAC recommendations

Number	IAC recommendation	Minister's response
1	Approve the exhibited draft Planning Scheme Amendment GC197, subject to the following:	
<i>Specific Controls Overlay 14</i>		
2	Apply the Specific Controls Overlay 14 Suburban Rail Loop East Incorporated Document subject to the following:	
2a	Review the land held by APH Holdings (925-927 Whitehorse Road, Box Hill) to determine whether it can be excluded from the Project area and Specific Controls Overlay 14 in light of the permit issued for its use and development for a Hotel and other uses.	Supported
2b	Include any consequential changes to reflect the revised tunnel alignment under Monash University.	Supported
<i>Suburban Rail Loop East Environmental Management Framework</i>		
3	Apply the Suburban Rail Loop East Environmental Management Framework at Appendix A.	Supported in part – see Appendix A
<i>Surface and Tunnel Plans</i>		
4	Apply the Surface and Tunnel Plans shown in D761, D762, D763 and D764, subject to the following:	

Number	IAC recommendation	Minister's response
4a	Change the legend reference 'Site subject to future precinct planning process' to 'Site subject to future precinct planning process, including possible additions to the public realm, community facilities and PuDo spaces'.	Supported
4b	Omit locational references for pick up/drop off parking spaces and bus interchanges.	Supported
4c	Show a wider northern entry to the pedestrian and cycle bridge over Bay Road, at the Cheltenham Suburban Rail Loop Station.	Supported
4d	Include a primary pedestrian route and a cycle route across Kingston Road between Nicholas Grove and Pietro Road, at the Stabling Facility.	Supported
4e	Remove the permanent closure of Carinish Road and locate the pick up/drop off parking in an area that enables more direct access to and from Clayton Road, at the Clayton Suburban Rail Loop Station.	Supported at this stage – see Section 6.1
4f	Locate the new bus interchange at closer to the station entry, at the Monash Suburban Rail Loop Station.	Supported in principle
4g	Remove the permanent closure of Coleman Parade, at the Glen Waverley Suburban Rail Loop Station.	Supported at this stage – see Section 6.1
4h	Include a cycle path connection between the eastern end of the proposed Whitehorse Road cycle path and the Box Hill to Ringwood C1 strategic cycling corridor, at the Box Hill Suburban Rail Loop Station.	Supported in part – see Section 6.1

Suburban Rail Loop East Urban Design Strategy

5	Apply the Suburban Rail Loop East Urban Design Strategy shown in D768 and D769, subject to the following:	
5a	Include the following additional consideration under outcome SF4, 4a: i) Include green roof structures where appropriate and feasible.	Supported
5b	Modify outcome CTM4, 4d by replacing the words 'allows for a future pedestrian and cycle crossing ...' with the words 'includes, subject to the approval of the Department of Transport, a pedestrian and cycle crossing ...'.	Supported
5c	Include the following additional consideration under outcome BUW2: 2h) Improve the sections of the Gardiners Creek shared trail within the Project boundary to meet appropriate design standards	Supported
5d	Include the following additional consideration under outcome BOX5: 5h) Provide a safe and convenient connection to the Box Hill to Hawthorn C2 strategic cycling corridor and to the Box Hill to Ringwood C1 strategic cycling corridor.	Supported in part – see Section 6.1
5e	Modify Figure 16: Monash place-specific requirements to show the location of the bus interchange closer to the station entry.	Supported
5f	Update the 'place-specific requirements diagrams' to reflect the Inquiry and Advisory Committee's relevant recommendations, including recommended changes to the Surface and Tunnel Plans.	Supported in principle

Suburban Rail Loop East Public Open Space Framework

6	Apply the Public Open Space Framework at Appendix H of Report No 2, subject to the following:	
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Number	IAC recommendation	Minister's response
6a	Review the accuracy of the open space maps and open space area calculations.	Supported
6b	Include a reference to the Whitehorse Road Linear Reserve in the summary table.	Supported
<i>Business and residential support guidelines</i>		
7	Apply the business and residential support guidelines included at Appendix I of Report No 2, subject to the following:	
7a	Review and update the Business Support Guidelines to: <ul style="list-style-type: none"> - clarify support measures that will be funded by Suburban Rail Loop Authority or the contractor - provide for earlier preparation of business plans - require monitoring of business activity before construction commences, including surveys to inform the extent of construction impacts require (voluntary) offers for businesses to prepare a financial baseline before construction commences. 	Supported
<i>Specific Controls Overlay 15</i>		
8a	Apply the Specific Controls Overlay 15 Suburban Rail Loop East Infrastructure Protection Incorporated Document as shown in D790, subject to the following: Include any consequential changes to reflect the revised tunnel alignment under Monash University.	Supported



HON LILY D'AMBROSIO MP

Minister for Environment and Climate Action

05 / 08 / 2022

Appendix A Environmental performance requirements