Planning Panels Victoria

Suburban Rail Loop East

Inquiry and Advisory Committee Report 1

Environment Effects Act 1978

Planning and Environment Act 1987

23 June 2022

VICTORIA State Government

Environment Effects Act 1978

Inquiry report pursuant to section 9(1)

Planning and Environment Act 1987

Advisory Committee report pursuant to section 151

Report No. 1: Key considerations, findings and recommendations

Suburban Rail Loop East

23 June 2022

Kathy Mitchell, Chair

Michael Kirsch, Deputy Chair

Craig Barker, Member

Elizabeth Hui, Member

Kate Partenio, Member

Planning Panels Victoria

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Glossary and abbreviations

AEP	Annual Exceedance Probability
ASS	Acid sulfate soils
BRRSG	Business and Residential Relocation Support Guidelines
BSG	Business Support Guidelines
CNVMP	Construction Noise and Vibration Management Plan
CSR	Confidential sensitive receiver
CUFP	Contingency and Unexpected Finds Plan
dB	Decibels
DELWP	Department of Environment, Land, Water and Planning
DoT	Department of Transport
EAPDMP	Environmental Air Pollution and Dust Management Plan
EES	Environment Effects Statement
EMF	Environmental Management Framework
EMI	Electromagnetic Interference

EP Act	*Environment Protection Act 2017*
EPA	Environment Protection Authority Victoria
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPRs	Environment Performance Requirements
ERS	Environment Reference Standard
ESF	Emergency Support Facility
EVC	Ecological Vegetation Class
GDE	Groundwater Dependent Ecosystems
GED	General Environmental Duty
GHG	Greenhouse gas
GMP	Groundwater Monitoring Plan
GWTA	Glen Waverley Traders Association
HHRA	Human Health Risk Assessment
HO	Heritage Overlay
IAC	Suburban Rail Loop East Inquiry and Advisory Committee
IAQM	Institute of Air Quality Management
ID	Incorporated Document
IEA	Independent environmental auditor
ISO	International Organisation for Standardisation
IWMS	Integrated Water management Strategy
KHGC	Kingston Heath Golf Club
LAC Act	*Land Acquisition and Compensation Act 1986*
LDAD	Low density artefact distributions
L_{eq}	Equivalent continuous sound level
mg/L	Milligrams per litre
ML	Megalitres
M&P	Movement and Place
MM	Mitigation Measure
mmscf/d	million standard cubic feet per day
MTP	Metro Tunnel Project
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
PAH	Polycyclic Aromatic Hydrocarbon
PE Act	*Planning and Environment Act 1987*

PFAS	Per-and Polyfluoroalkyl Substances
POSEP	Public Open Space Expert Panel
POSF	Public Open Space Framework
POSMP	Public Open Space Management Plan
PPF	Planning Policy Framework
PRINP	Passenger Rail Infrastructure Noise Policy
Proponent	Suburban Rail Loop Authority
PTV	Public Transport Victoria
PuDo	Pick-up/drop-off parking spaces
PSA	Planning Scheme Amendment
RAP	Registered Aboriginal Party
RFI	Request for Further Information
RMMP	Risk Management and Monitoring Program
RSG	Residential Support Guidelines
S	Submission number
Specific Controls Overlay	Specific Controls Overlay
SCO14	Specific Controls Overlay 14
SCO15	Specific Controls Overlay 15
Scoping Requirements	Final Scoping Requirements for Suburban Rail Loop Stage One July 2021
SEL	Sound Exposure Level
SIL	Safety Integrity Level
SO_2	Sulfur dioxide
SMF	Spoil Management Framework
SMP	Spoil Management Plans
SMS	Spoil Management Study
SRL	Suburban Rail Loop
SRLA	Suburban Rail Loop Authority
TARP	Trigger Action Response Protocol
TBM	Tunnel Boring Machine
the Project	Suburban Rail Loop East project
TIA	Traffic Impact Assessment
TMLG	Transport Management Liaison Group

TMP	Traffic Management Plan
TN	Technical Note
TSA	Temporary Storage Areas
UAW	United AgeWell (aged care facility)
UDAP	Urban Design Advisory Panel
UDS	Urban Design Strategy
μg/L	Micrograms per litre
VAHR	Victorian Aboriginal Heritage Register
VCAT	Victorian Civil and Administrative Tribunal
VHI	Victorian Heritage Inventory
VPP	Victorian Planning Provisions
WASS	waste acid sulfate soil
WSUD	Water Sensitive Urban Design
WWCHAC	Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation
ZoI	Zone of Influence of ground movement (5mm vertical settlement or greater)

Executive summary and recommendations

Overview

Planning for a metropolis is complex. As a city grows, so do its infrastructure needs. When the first 'Plan for General Development' for Melbourne was released in 1929 by the Metropolitan Town Planning Commission, the extent of urban areas extended to Oakleigh, Waverley, Heidelberg, Thornbury, Essendon and Newport. As Melbourne grew, new plans were prepared, including the 1954 and 1971 plans. Major city shaping infrastructure such as Melbourne Airport, the City Rail Loop, the Tullamarine and Monash Freeways were planned for, where as time has demonstrated, the city needed support infrastructure to assist with its growth. More recently, the North East Link Freeway and the Melbourne Metro Tunnel have been planned for and are now under construction. Cities do not remain static and they need to grow to accommodate population increases.

Melbourne's main rail network was commenced in the 1850s and the radial network was developed in the 1880s as part of Melbourne's growth boom. Electrification occurred in the 1920s and it has served Melbourne well. Lines have been progressively extended and new lines added over time, all in a predominantly radial pattern. Trams and buses have supported the public transport network of Melbourne but orbital connectivity through fixed rail is missing. This is now changing.

The Suburban Rail Loop (SRL) is one of these city shaping infrastructure projects. It is a proposed new 90-kilometre rail line to connect Melbourne's metropolitan train stations from the Frankston Line in the east to the Werribee Line in the west. SRL East, the subject of the Environment Effects Statement (EES) and this inquiry, includes the construction and operation of:

- twin-bore rail tunnels between Cheltenham and Box Hill, via a Stabling Facility in Heatherton, a length of approximately 26 kilometres
- 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 in Heatherton, including tunnel dive structures and portals
- a power substation in the vicinity of the proposed Burwood Station
- an Emergency Support Facility.

The true benefits of this Project may not be evident for 20 to 30 years. However, metropolitan strategic planning is about thinking ahead and planning for the needs and benefit of future Victorians.

The remaining stages of SRL (north and west) will be subject to separate planning and approval processes.

The Suburban Rail Loop Authority (SRLA) (an independent statutory authority governed by the Suburban Rail Loop Act 2021) is the Project Proponent. The Proponent prepared the EES to provide for the integrated assessment of the Project, which was placed on public exhibition for six weeks in November and December 2021.

A combined Inquiry and Advisory Committee (the IAC) was appointed by the Minister for Planning to consider the EES, associated approvals and public submissions, and to hold a public Hearing to receive and consider evidence and submissions.

A total of 366 submissions were received in response to the public exhibition. Overwhelmingly, most written and verbal submissions provided high level support for the Project, but sought many changes to it, particularly to the environmental and planning controls.

The public Hearing was held for 39 days over 10 weeks from 28 February to 5 May 2022, during which the Proponents, five local Councils (Whitehorse, Monash, Kingston, Bayside and Manningham), the Environment Protection Authority Victoria (EPA), Department of Transport (DoT), various environment and community groups, (including Move the Train Yard and Heatherton Residents Against Inappropriate Development [Move the Train Yard]), businesses, educational institutions, water authorities and individual submitters provided evidence and submissions to the IAC.

Due to COVID-19 restrictions, the Hearing was held by video conference, and while presenting the occasional technical challenges, it enabled all parties and submitters seeking to be heard, the opportunity to present evidence and submissions to the IAC, as well as the ability to listen in and observe at any stage of the proceedings.

Context for assessment

This report provides an analysis of the exhibited EES, written submissions, evidence and further submissions, and other material provided to the IAC during the Hearing.

The IAC has prepared two reports. Report No. 1 provides the IAC's key considerations, findings and recommendations in relation to the environmental effects of the Project.

Report No. 1 has three Parts:

- Part A provides background information about the IAC process, a summary of the Project, Project rationale and alternatives, and overarching threshold issues.
- Part B provides the review and analysis of each of the environment effects of the Project under the Evaluation Objectives included in the Final Scoping Requirements for Suburban Rail Loop Stage One July 2021 (Scoping Requirements).
- Part C provides the summary and conclusions of the IAC in relation to Project implementation and its integrated assessment.

Report No. 2 provides the Appendices, including the recommended changes to various Project documents and controls, including the Environment Management Framework (EMF), draft Planning Scheme Amendment (PSA) GC197 and associated documents.

Summary of environmental effects

The IAC concludes there will be many environmental impacts due to the nature of the Project over its significant geographic area. But as most of the rail infrastructure will be underground, the majority of those effects will be concentrated at the above ground infrastructure associated with the six stations and the Stabling Facility.

For most aspects of the Project, the environmental effects can be acceptably mitigated. The Project will take up to nine years for construction and this will result in significant impacts in terms

of loss of residential housing and businesses, loss of highly valued open space, and amenity impacts such as airborne noise and dust, odour, contamination exposure, spoil movements and ongoing truck traffic and movement.

The station areas at Box Hill and Glen Waverley will be most impacted. These areas will be subject to significant disruption during the construction period and there will be loss and/or displacement of residential and business properties. For Box Hill, the temporary loss of a large part of a key open space area will be a major impact.

The area set aside for the Stabling Facility raises significant issues. That land is located in the Green Wedge Zone and has long been recognised as a future area for open space as part of the Chain of Parks in the south-east region. This land and other land in its vicinity has and continues to variously be used for quarrying, landfill and recycling of materials.

For over 20 years, the State Government and Kingston Council have planned its conversion into a series of parks for the benefit of the region and the south-east corridor more broadly. That part of this land is now proposed for the Stabling Facility has caused significant concern and distress to the local community and the many others who support the Green Wedge and Chain of Parks concept. In addition to the loss of planned open space, mitigating the various amenity and other impacts during the Stabling Facility's construction and operation will be challenging. The location of the Stabling Facility was heavily contested through submissions and evidence by Kingston Council, MTTY and many individual submitters.

The IAC concludes the loss of this site from the Chain of Parks concept can only be effectively mitigated if a replacement area is identified and a process for its acquisition is implemented. Amenity and other impacts need to be addressed through more comprehensive, prescriptive and targeted mitigation measures than those proposed in the EES. Subject to these matters being suitably addressed and the IAC's recommendations being adopted, the IAC supports the use of the site for the Stabling Facility. If these concerns are not addressed, the Proponent should continue to investigate alternative sites for the Stabling Facility.

Summary of place-based site impacts

Cheltenham Station:

Impacts can be acceptably managed, with particular issues requiring additional mitigation related to:

- Loss of part of the regionally significant Sir William Fry Reserve.
- Loss of recreational facilities.
- Potential impacts from contamination and odour from buried gasworks waste associated with the former and adjacent Highett Gasworks site.

Clayton Station:

Impacts can be acceptably managed, with particular issues requiring additional mitigation related to:

- Temporary loss and longer terms impacts on the Remembrance Gardens.
- Traffic and pedestrian management, including the treatment of Carinish Road.

Monash Station:

No particular issues that are unable to be appropriately mitigated.

Glen Waverley Station:

Impacts can be acceptably managed, with particular issues requiring additional mitigation related to:

- Loss of business and community facilities.
- Traffic, car parking and pedestrian management, including the treatment of Coleman Parade.

Burwood Station:

Impacts can be acceptably managed, with particular issues requiring additional mitigation related to:

- The treatment of public open space, historic heritage and pedestrian movement.

Box Hill Station:

Impacts can be acceptably managed, with particular issues requiring additional mitigation related to:

- Significant residential and business displacement and acquisition.
- Loss of business in the culturally significant Asian retail core.
- Temporary loss of a large part of the regionally significant Box Hill Gardens.
- Amenity impacts due to the construction area interface with the Uniting AgeWell facility.
- Traffic and pedestrian management, including public transport interchange arrangements.

Stabling Facility

Impacts can be acceptably managed, with particular issues requiring additional mitigation related to:

- Identification of a replacement area for the Chain of Parks.
- Potential impacts from dust, odour, noise and other amenity impacts.
- Traffic and movement within the general area.

Rail Tunnels

No particular issues that are unable to be appropriately mitigated.

Other support infrastructure

No particular issues that are unable to be appropriately mitigated.

Summary of findings, conclusions and recommendations

The IAC supports the Project and considers it will bring positive benefits to Melbourne and Victoria. The Project will result in a net benefit for the community of Melbourne and Victoria in delivering a new orbital rail line that has the potential to reshape the public transport model in metropolitan Melbourne.

The IAC has concerns about the location and impacts of the Stabling Facility. The loss of a planned site from the Chain of Parks concept can only be mitigated if a replacement site is identified and a process for its acquisition is established. 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.

The IAC acknowledges there will be significant impacts on some communities along the proposed rail alignment, particularly at Box Hill and Glen Waverley, and in association with the Stabling Facility, however it concludes that the broader population of Victoria will significantly benefit from this Project in the long term.

The recommendations of the IAC have focussed on the key approval and management controls, including the Specific Controls Overlay 14 Incorporated Document, the Environmental Management Framework which includes the Environmental Performance Requirements, the Urban Design Strategy and the Public Open Space Framework; as well as other recommendations to provide assistance in implementation of the Project.

Based on the reasons set out in this Report, the IAC concludes the Project should be progressed in accordance with its recommendations as set out below.

Recommendations

The IAC makes the following recommendations:

1. Approve the exhibited draft Planning Scheme Amendment GC197, subject to the following:

<u>Specific Controls Overlay 14</u>

2. Apply the Specific Controls Overlay 14 Suburban Rail Loop East Incorporated Document at Appendix F of Report No 2, 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.

2b) Include any consequential changes to reflect the revised tunnel alignment under Monash University.

<u>Suburban Rail Loop East Environmental Management Framework</u>

3. Apply the Suburban Rail Loop East Environmental Management Framework at Appendix G of Report No 2.

<u>Surface and Tunnel Plans</u>

4. Apply the Surface and Tunnel Plans shown in D761, D762, D763 and D764, subject to the following:

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*'.

4b) Omit locational references for pick up/drop off parking spaces and bus interchanges.

4c) Show a wider northern entry to the pedestrian and cycle bridge over Bay Road, at the Cheltenham Suburban Rail Loop Station.

4d) Include a primary pedestrian route and a cycle route across Kingston Road between Nicholas Grove and Pietro Road, at the Stabling Facility.

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.

4f) Locate the new bus interchange at closer to the station entry, at the Monash Suburban Rail Loop Station.

4g) Remove the permanent closure of Coleman Parade, at the Glen Waverley Suburban Rail Loop Station.

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.

<u>Suburban Rail Loop East Urban Design Strategy</u>

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.

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 …*'.

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

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.

5e) Modify Figure 16: Monash place-specific requirements to show the location of the bus interchange closer to the station entry.

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.

<u>Suburban Rail Loop East Public Open Space Framework</u>

6. Apply the Public Open Space Framework at Appendix H of Report No 2, subject to the following:

6a) Review the accuracy of the open space maps and open space area calculations.

6b) Include a reference to the Whitehorse Road Linear Reserve in the summary table.

<u>Business and Residential Support Guidelines</u>

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:

- **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.

Specific Controls Overlay 15

8. Apply the Specific Controls Overlay 15 Suburban Rail Loop East Infrastructure Protection Incorporated Document as shown in D790, subject to the following:

8a) Include any consequential changes to reflect the revised tunnel alignment under Monash University.

PART A: INTRODUCTION AND BACKGROUND

1 The inquiry process

1.1 The Inquiry, Advisory Committee and Panel

The Minister for Planning appointed a five-member Inquiry and Advisory Committee (IAC) on 14 November 2021 pursuant to section 9 of the *Environment Effects Act 1978* (EE Act) and section 151 of the *Planning and Environment Act 1987* (PE Act) to inquire into and report on the proposed 26-kilometre Suburban Rail Loop (SRL) East Section from Cheltenham to Box Hill (the Project).

The Minister for Planning signed Terms of Reference for the IAC on 7 November 2021 (Appendix A of Report No. 2).

The IAC comprises:

- Ms Kathy Mitchell AM, Chair
- Mr Michael Kirsch, Deputy Chair
- Mr Craig Barker, Member
- Ms Elizabeth Hui, Member
- Ms Kate Partenio, Member.

Consistent with Clause 54 of the Terms of Reference, the IAC was assisted by:

- Ms Hayley Becker, Manager Major Projects, Planning Panels Victoria (PPV)
- Ms Georgia Thomas, Project Officer, PPV.

Consistent with Clause 55 of the Terms of Reference, the IAC retained the services of Mr Peter O'Farrell of Counsel (Victorian Bar) as Counsel assisting.

The Project proponent is the Suburban Rail Loop Authority (SRLA).

This is Report No. 1 of the IAC.

1.2 The IAC's role

1.2.1 Terms of Reference

Clause 6 of the Terms of Reference require the IAC as the Inquiry to:

a. review the environment effects statement (EES), including technical appendices other exhibited documents and relevant submissions received in relation to the EES; and

b. having regard to the evaluation objectives in the EES scoping requirements and relevant policy and legislation, investigate and consider

   i. the potential environmental effects of the project;

   ii. the significance and acceptability of the potential environmental effects of the project;

   iii. the appropriateness and effectiveness of proposed environmental mitigation or management measures for the project;

   iv. potential design alternatives or additional environmental mitigation and management measures it considers feasible and effective to avoid, mitigate or manage environmental effects of the project or offer beneficial outcomes;

   v. relevant conditions, controls and requirements that could form part of the approvals for the project; and

   vi. all submissions made to the IAC in relation to any matter relevant to the IAC's investigation or consideration of the environmental effect of the project.

Clause 7 notes that in its role as an Advisory Committee, the IAC is to:

a. review the draft PSA including incorporated documents, that have been prepared to facilitate the Project, along with any relevant submissions received in relation to the draft PSA; and

b. having regard to relevant policy and legislation and the matters specified below, consider

   i. all relevant submissions made to the IAC in relation to the draft PSA; and

   ii. whether the draft PSA contains provisions and controls that are an appropriate means by which to facilitate and implement the project; and

   iii. any changes to the draft PSA it considers necessary.

Clause 24 of the Terms of Reference notes the Project may require other statutory approvals and/or consents, as outlined in the EES, including:

a. an approved Cultural Heritage Management Plan under the Aboriginal Heritage Act 2006;
b. a permit to remove listed flora under the Flora and Fauna Guarantee Act 1988;
c. an authority to take or disturb wildlife under the Wildlife Act 1975;
d. approvals and licences for works on waterways, to construct a groundwater bore and to extract groundwater under the Water Act 1989;
e. an amendment to a pipeline licence under the Pipelines Act 2005;
f. consents, permits or exemptions under the Heritage Act 2017; and
g. consent for works on freeways and arterial roads declared under the Road Management Act 2004.

Clause 43 requires the IAC in its capacity as an inquiry to produce a written report containing its findings and recommendations, as relevant to the matters set out in Clause 6, on:

a. the environmental effects of the project;
b. the significance and acceptability of the potential environmental effects of the project;
c. the appropriateness and effectiveness of proposed environmental mitigation or management measures for the project;
d. any potential design alternatives or additional environmental mitigation and management measures that it considers feasible and effective to avoid, mitigate or manage adverse environmental effects or offer beneficial outcomes having regard to relevant legislation, policy and the evaluation objectives in the EES scoping requirements;
e. any conditions that may be lawfully imposed on any approval for the project that it considers necessary to avoid, mitigate or manage the environmental effects of the project having regard to legislation, policy and the evaluation objectives in the EES scoping requirements.

Clause 44 requires the IAC in its capacity as an advisory committee to produce a written report containing its advice, as relevant to the matters set out in Clause 7, as to whether the draft Planning Scheme Amendment (PSA) GC197 is an appropriate means by which to facilitate and implement the Project and any recommended modifications to the draft PSA.

The IAC provides its consolidated response to the Terms of Reference in Chapter 17.2.

1.2.2 Scoping Requirements

The Minister for Planning issued the public works order and the EES scoping requirements for the Project on 1 July 2021 which identified the matters to be addressed in the Suburban Rail Loop Stage One, July 2021 (as it was known then).

In setting out the matters to be addressed in the EES, the scoping requirements highlighted specific and key issues, including:

- general approach
- content and style
- project description
- urban design strategy
- project development and alternatives
  - alternatives considered in the design process
  - assessment method used for developing and selecting preferred alternatives
  - evaluation of the environmental effects of the alternatives
  - basis for selecting the proposed reference project
- applicable legislation, policies and strategies
- evaluation objectives
- environmental management framework (EMF).

In setting out the assessment of environmental effects, evaluation objectives, key issues, existing environment, likely effects, mitigation measures and performance criteria were articulated for:

- transport and traffic management
- amenity and environmental quality
- business and retail
- landscape, visual, recreational values and built form
- land use planning and infrastructure
- social, community and public health
- contaminated land and spoil management
- surface water, groundwater and land stability
- aboriginal cultural and historic heritage
- biodiversity and arboriculture
- greenhouse gas emissions and resource efficiency.

1.3 Exhibition and submissions

The EES was exhibited for 30 business days from 5 November to 16 December 2021.

Clause 25 of the Terms of Reference provided for submissions to be lodged through the Engage Victoria website and collected by Planning Panels Victoria. A total of 366 submissions were received, of which 6 were late. Three submissions were withdrawn before the Hearing commenced.

1.4 Hearings

The Directions Hearing was held via video conference on 28 January 2022 and approximately 170 people participated in or viewed this. At the Directions Hearing, the IAC introduced itself and its team, explained its role, made various declarations, discussed exhibition and submission issues, and discussed various directions in relation to the Hearing dates, site inspections, experts and cross examination, and the public availability of tabled documents.

The IAC formally tabled its Request for Information (RFI) report at the Directions Hearing pursuant to Clause 35 of the Terms of Reference [1].

[1] Document (D) 35

The recording of the Directions Hearing was made available on the Engage Victoria website on 29 January 2022.

The main Hearing was held via video conference over 39 days between 28 February and 5 May 2022. Five of these days ran with two concurrent sessions, resulting in a total of 44 hearing day sessions. Typically, between 70 to 150 people participated in or viewed the Hearing each day. Daily recordings of the Hearing were made available on the Engage Victoria website, generally on the following business day. The Hearing participants (that is, those who made submissions [with some calling expert evidence] and presented to the IAC), are shown in Appendix C of Report No. 2.

All documents and materials tabled during the IAC process were assigned a document number, recorded on the IAC's document list, and published on the Engage Victoria website generally within one business day of being provided.

Additionally, the IAC requested Monash and Whitehorse Councils provide D800 post-hearing.

The list of the 800 tabled documents is provided in Appendix D of Report No. 2.

1.5 Site inspections

The IAC members undertook various unaccompanied inspections prior to the Hearing, including the sites listed in D58.

An accompanied inspection of the Pakenham East Train Stabling Facility was conducted on Monday 14 February 2022, as described in D66.

An accompanied inspection of the Metro Tunnel City Square Station was conducted on Tuesday 22 February 2022, as described in D173.

Unaccompanied inspections of the SRL station and Stabling Facility sites were conducted on 7 April 2022, as described in D511. The IAC invited the Proponent and submitters to nominate specific sites and features for this inspection and received a number of nominations. All of the nominated sites were inspected.

During and following the Hearing, IAC members undertook individual inspections of various sites and areas.

1.6 Procedural and other matters

(i) Request for Further and other Information

The IAC prepared a RFI that was provided to the Proponent on 27 January 2022 and placed on the IAC web page. It was tabled at the Directions Hearing on 28 January 2022.

The RFI directed the Proponent to provide further information about various matters, based on its preliminary review of the EES and submissions up to the date of the Directions Hearing. Throughout the course of the Hearing, the IAC (as well as other parties) sought a range of other information.

The Proponent subsequently responded to the RFI through submissions, evidence, Technical Notes, Position Papers and various other information.

The IAC thanks the Proponent and its team for its responsiveness in providing its many submissions and evidence and the significant additional information throughout the Hearing.

(ii) Submissions in confidence and in camera

The Electromagnetic Interference (EMI) assessment, TA H.2 identified a Confidential sensitive receiver (CSR) within 100 metres of the tunnel alignment as being potentially affected by both tunnel boring during construction and operation of the trains. The IAC requested further information regarding this receiver to ascertain how it should be assessed, whether specific findings and recommendations were required and if an in camera submission was needed. The Proponent provided TN04 (D180) on a confidential basis.

The Proponent proposed protocols for dealing with the CSR (D272) and advised there would be no submissions or substantial evidence provided in relation to the CSR. The Minister advised the IAC in writing (D457) there were no concerns with the proposed protocol and provided additional commentary about dealing with such confidential matters.

Based on the information provided in TN04, the IAC was satisfied that all potential impacts had been resolved and further interrogation regarding this receiver during the Hearing was not required.

(iii) Monash University

Monash University provided a comprehensive written submission (S262), an opening submission (D186) and engaged in rigorous cross examination of the Proponent's witnesses up to and including Day 15 of the Hearing, including for planning, noise and traffic. On the morning of Day 16 on 24 March 2022, Ms Brennan advised the IAC that Monash University had resolved its issues with the SRLA, it fully supported the Project and, on that basis, it was no longer seeking to call any further evidence or make submissions. In that regard, the time set aside for Monash University to present its full submission was vacated.

The IAC asked for this advice in writing and the Proponent provided TN38 which summarised the implications of the agreement between the Proponent and Monash University. That TN noted that while the terms of the agreement were confidential:

> 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 and amendment to the Surface and Tunnel plans to realign the tunnel
>
> …
>
> Agreed EPRs, as included in SRLA's Day 2 EMF tabled 24 March 2022 [2].

Monash University tabled an original written submission and it filed and spoke to an opening submission. It filed ten evidence statements, including in noise and traffic. The noise and traffic witnesses presented their evidence and both were cross examined. While the IAC acknowledges the agreement between SRLA and the University, it has had regard to the evidence that was presented. It had also read the other evidence not called. For these reasons, where appropriate, the IAC has referred to the evidence and the tabled submissions as necessary.

Monash University maintained a watching brief throughout the remainder of the Hearing.

(iv) Experiences from past projects

The IAC asked the Proponent to provide it with updates and examples of how past projects, in particular, Melbourne Tunnel Project (MTP) project have worked in delivering practice with

[2] D479

reference to Environmental Performance Requirements (EPRs) and guidelines [3]. The IAC saw this as an opportunity to use existing experience to better inform outcomes, particularly where it is expected there will be negative impacts from the SRL Project that require various mitigation strategies and guidelines.

Monash and Whitehorse submissions sought this type of information as well during the Hearing [4].

While some aspects of this RFI were addressed, disappointingly, it was not comprehensively addressed.

The somewhat comparable MTP provided an excellent opportunity to study in detail how the various EPRs and support guidelines and protocols worked in practice. It could have provided the IAC with meaningful data and analysis to ensure that what is proposed through this EES process is best practice. This could have occurred through evidence and submissions. A number of witnesses (many of whom were involved in the MTP project) were asked in cross examination whether they had reviewed outcomes from MTP, particularly where EPRs and/or guidelines were proposed. None had.

The IAC considers this to be a significant opportunity lost.

(v) Position of Councils

Kingston, Monash and Whitehorse Councils all noted at various stages during the Hearings that they supported the Project, subject to various refinements and recommendations. At the outset, the IAC acknowledges the work each of these Councils put into their pre-hearing submissions, then through submissions and evidence they called at the Hearing. This included making clear recommendations and providing additional submissions and a wide range of follow up information and material sought by the IAC.

The IAC benefited from submissions from Bayside and Manningham Councils, both who provided support to the Project.

Throughout the Hearing, the Councils continued to maintain a level of support for the Project, even though there were many issues raised in their submissions and through evidence that indicated they did not support various elements of the Project, or that they sought additional elements. Kingston, Monash and Whitehorse Councils provided closing submissions, with Monash and Whitehorse providing a joint closing as they had joint representation throughout the process.

Following those closings, the IAC was not completely clear on the final position of each of the Councils, so for the benefit of any doubt, it sought clarification in writing.

Monash and Whitehorse responded:

> The Councils' position is one of qualified support. Both Councils resolved to support the Project, subject to changes identified in their submissions, being changes that they regarded as needed:
>
> (a) in respect of Whitehorse, to minimise the effects of Project; and
>
> (b) in respect of Monash, to achieve acceptable outcomes and minimise the effects of the Project.
>
> Accordingly, if the changes sought are not made, the Councils take the view that the Project has not minimised the effects of the Project and does not achieve acceptable outcomes and hence, the Councils do not support the Project without those changes. The Councils would

[3] D35, RFI 8, 18 and 19

[4] For example, D480, paras 183, 186

> not characterise their position as outright opposition to the Project in the absence of those changes, however they could not be said to give it express or unqualified support [5].

Monash/Whitehorse invited the IAC to ask the Proponent whether the Project would not proceed if the key issues and themes these Councils were seeking as part of the Project were included, these being:

- paid area connections (Box Hill and Glen Waverley)
- bicycle links
- a bus interchange upgrade (Box Hill)
- retention of heritage buildings at Box Hill
- underground connection to the north side of Burwood Highway
- carparking in Glen Waverley south of Coleman Parade
- supplementary EES in respect of the Glen Waverley ring road
- retention of vehicular access on Coleman Parade or appropriate mitigation for closure of Coleman Parade
- appropriate mitigation for the Carinish Road closure
- the Councils are included on UDAP.

Kingston responded:

> Kingston confirms its position in relation to the SRL East Project, consistent with its Opening Submission, that is:
>
> "1.1 The scale and significance of the Suburban Rail Loop (SRL) project is profound. It is a multi-generational project for this century and the next. In concept, Kingston City Council (Kingston) supports the SRL project and SRL East.
>
> 1.2 Kingston's support is subject to a number of important changes which Kingston considers are vitally necessary improvements to the project. Key elements of Kingston's position are:
>
> 1.2.1 strong opposition to the proposed location of the Stabling Yard;
>
> 1.2.2 the necessity for substantial improvements to the proposed Cheltenham Station."
>
> The position of Kingston has firmed through the EES and IAC process. That firming of the view is predicated on the SRLA's continued fixed positions and it's overwhelming rejection of all substantive elements that Kingston, after extensive work, has advanced in mitigation of the project impacts. Mitigation which is not in the form of extra benefit for unrelated projects, with such assertions misrepresenting the Kingston position.
>
> Kingston reaffirms, after the outcomes of this process are resolved, the objective for Kingston is to continue a long term and cooperative relationship with the SRLA [6].

Kingston prepared two significant pieces of work in support of its position through its original submissions, these were generally referred to as Kingston's Advocacy Designs for the Cheltenham Station site and an alternative option for the Stabling Facility if located at the Heatherton site.

The IAC considers these issues in this report and thanks the Councils and their teams for their considered input throughout the whole of this process.

(vi) Post hearing documents

In its closing, the IAC affirmed that it would not receive any documents submitted post Hearing. If any documents or emails were provided, the IAC would upload these and give them a post Hearing

[5] D782
[6] D783

document number. The IAC requested numerous documents from the Proponent, these were tabled as Documents 785 to 799 (see Appendix D).

1.7 Report structure

The material before the IAC is significant. It includes:

- the EES and the associated Technical Reports
- 366 submissions
- 47 statements of evidence
- 801 tabled documents
- further submissions of 88 submitters who appeared at the Hearing
- 52 Technical Notes
- 13 Positions Papers, of which six had supplements
- eight versions of the timetable
- 54 versions of the Document List.

In its report, the IAC has considered but not addressed every issue put to it, nor has it responded to every written submission or further submission made to it at the Hearing. Due to time constraints, it has distilled its considerations through identifying the high-level key issues and what it considers to be the determinative issues in its review, considerations, findings and recommendations.

The IAC has prepared two reports:

- Report No. 1 – Key considerations, discussion, findings and recommendations
- Report No. 2 – Appendices.

Report No. 1 is divided into three parts as follows:

- **Part A: Introduction and background**
  - Chapter 1: The inquiry process
  - Chapter 2: The Project
  - Chapter 3: Project rationale and alternatives
  - Chapter 4: Key threshold issues
- **Part B: Environmental effects of the project**
  - Chapter 5: Aboriginal and cultural heritage
  - Chapter 6: Amenity and environmental quality
  - Chapter 7: Biodiversity and arboriculture
  - Chapter 8: Business and retail
  - Chapter 9: Contaminated land and spoil management
  - Chapter 10: Greenhouse gas emissions and resource efficiency
  - Chapter 11: Landscape, visual, recreational values and built form
  - Chapter 12: Land use planning and infrastructure
  - Chapter 13: Social, community and human health
  - Chapter 14: Surface water, groundwater and land stability
  - Chapter 15: Transport and traffic management
- **Part C: Project implementation and assessment**
  - Chapter 16: Project implementation
  - Chapter 17: Integrated assessment.

Report No. 2 contains the Appendices as follows:

- Appendix A: Terms of Reference
- Appendix B: List of submitters
- Appendix C: Appearances at the Hearing
- Appendix D: Tabled documents
- Appendix E: Summary of relevant legislation
- Appendix F: Specific Controls Overlay 14 Incorporated Document
- Appendix G: Environmental Management Framework, including Project EPRs
- Appendix H: Public Open Space Framework
- Appendix I: Business and Residential Support Guidelines.

The IAC has based its report structure around responding to the Terms of Reference and having regard to the EES Project Evaluation Objectives which are principally addressed in Report No 1, Part B.

Monash and Whitehorse had joint representation, although each presented their own case. At times, both Councils raised similar issues. In Part B of this report, those similar issues are not repeated in each instance, particularly where a finding or recommendation relates to the Project as a whole. Likewise, Kingston adopted many of the submissions and recommendations of Monash and Whitehorse. For ease of reference, when referring to these Councils, the IAC refers to each as Kingston, Monash and Whitehorse.

The IAC has included recommended versions of the Specific Controls Overlay (SCO) Schedule 14 Suburban Rail Loop East Incorporated Document (ID) and Environmental Management Framework (EMF) at Appendices F and G. Those versions include the changes recommended by the IAC and are based on the Day 4 versions of those documents (D791 and D795 respectively).

Other exhibited approval documents and changes proposed by the Proponent are supported, unless otherwise recommended.

The report uses the term 'mitigation measures' as a generic reference to specific controls such as the EMF and Incorporated Documents throughout this report.

1.8 Acknowledgements

It is not possible to acknowledge all who contributed to the EES process, both through the original written submissions, the evidence before it, and through those submitters who presented to the IAC.

The IAC thanks all who participated in this process through written submissions and those who supplemented their written submissions through evidence and/or by speaking at the Hearing. It appreciates the way in which all parties and submitters embraced that the Hearing could only be conducted by video conference, and while it presented some minor challenges at times, it all worked very well.

The IAC acknowledges the Proponent for engaging AV Select to manage the video conferencing for the Hearing.

The IAC particularly thanks the office of Planning Panels Victoria for its ongoing support and assistance throughout the process, with special acknowledgment to:

- Ms Hayley Becker, Manager, Major Projects
- Ms Georgia Thomas, Project Officer
- Ms Laura Travis, Office Manager.

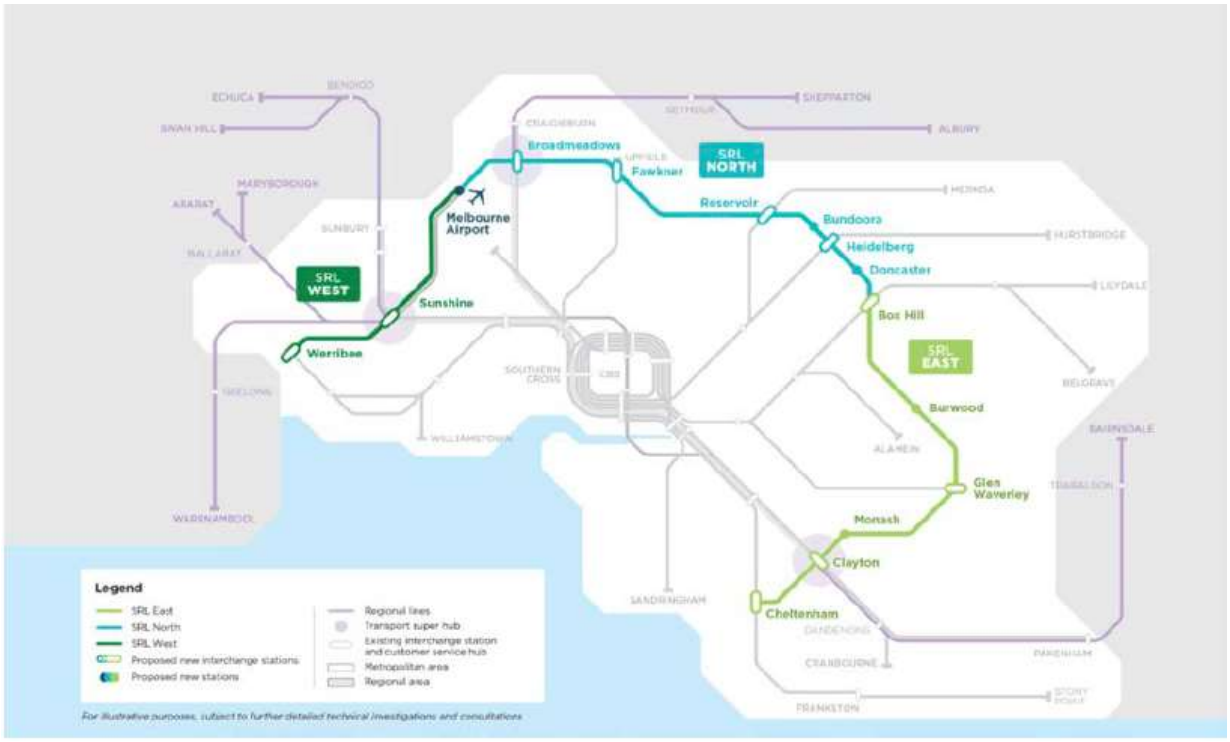
2 The Project

2.1 Introduction

This chapter provides a high-level overview of the key elements of the Project drawn from the EES documentation, particularly the EES Summary Report. This provides context for the discussion of specific issues in Parts B and C of this report. Readers should refer to the relevant elements of the EES documentation for more specific or detailed information about the Project.

The SRL is proposed to ultimately deliver a turn up and go metropolitan-style service with interchanges between the new orbital line and every major radial line between Frankston and Werribee, with a direct rail connection to Melbourne Airport, as shown indicatively in Figure 1:

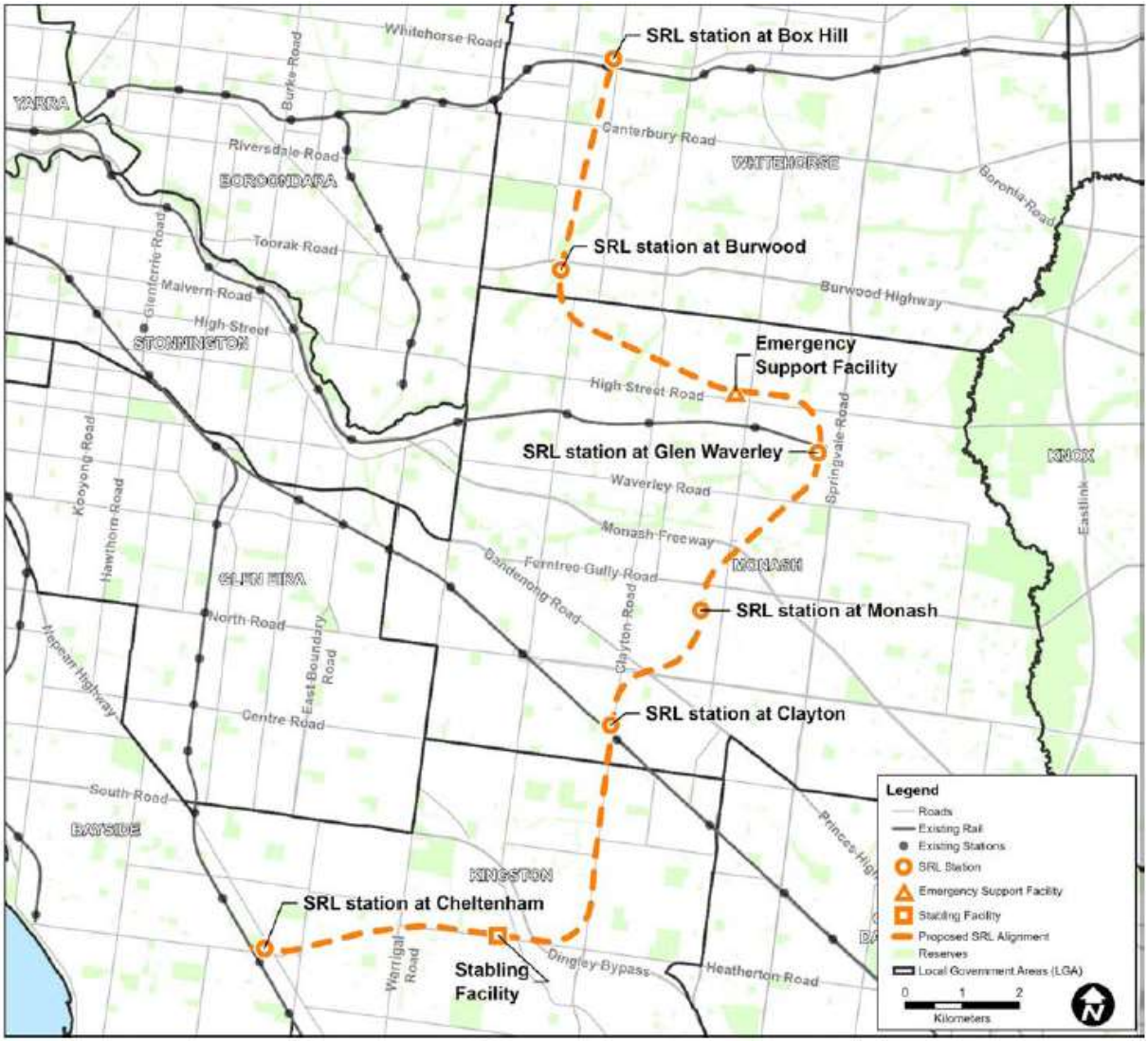
Figure 1 SRL program indicative map [7]



Stage 1 of this program is SRL East, the subject of this environment effects inquiry, as shown in Figure 2:

[7] D200, p4

Figure 2 **SRL East overview** [8]



The SRL railway line would operate at a top speed of 100 km/h. The journey from the SRL Station at Cheltenham to the SRL Station at Box Hill would take about 22 minutes, with trains taking three to four minutes between stations.

Trains would start service running west from the Stabling Facility to the SRL station at Cheltenham, and then stop at all stations to the SRL station at Box Hill. Trains would operate five days a week for 20 hours, and two days a week for 24 hours. This would provide a four-hour maintenance window for the tunnel, five nights each week.

Trains would operate as a turn-up-and-go service, initially at six-minute intervals during peak periods. The design of the Project's operating systems and infrastructure enables a two-minute wait between services as demand increases.

Stations have been designed to be as shallow as possible to minimise travel times for passengers from streel level to platform. SRL stations are proposed to fully integrate with the existing public transport system, allowing passengers to transfer across both networks by connecting to existing metropolitan and regional services.

[8] D202, p10

The proposed Stabling Facility would operate continuously. Routine maintenance works in the train maintenance facility would most likely occur during the day when trains are out of service, although some night works may be required.

The Project involves both above ground and below ground infrastructure.

2.1.1 Above ground infrastructure

The above ground infrastructure can be broken down into eight geographic elements.

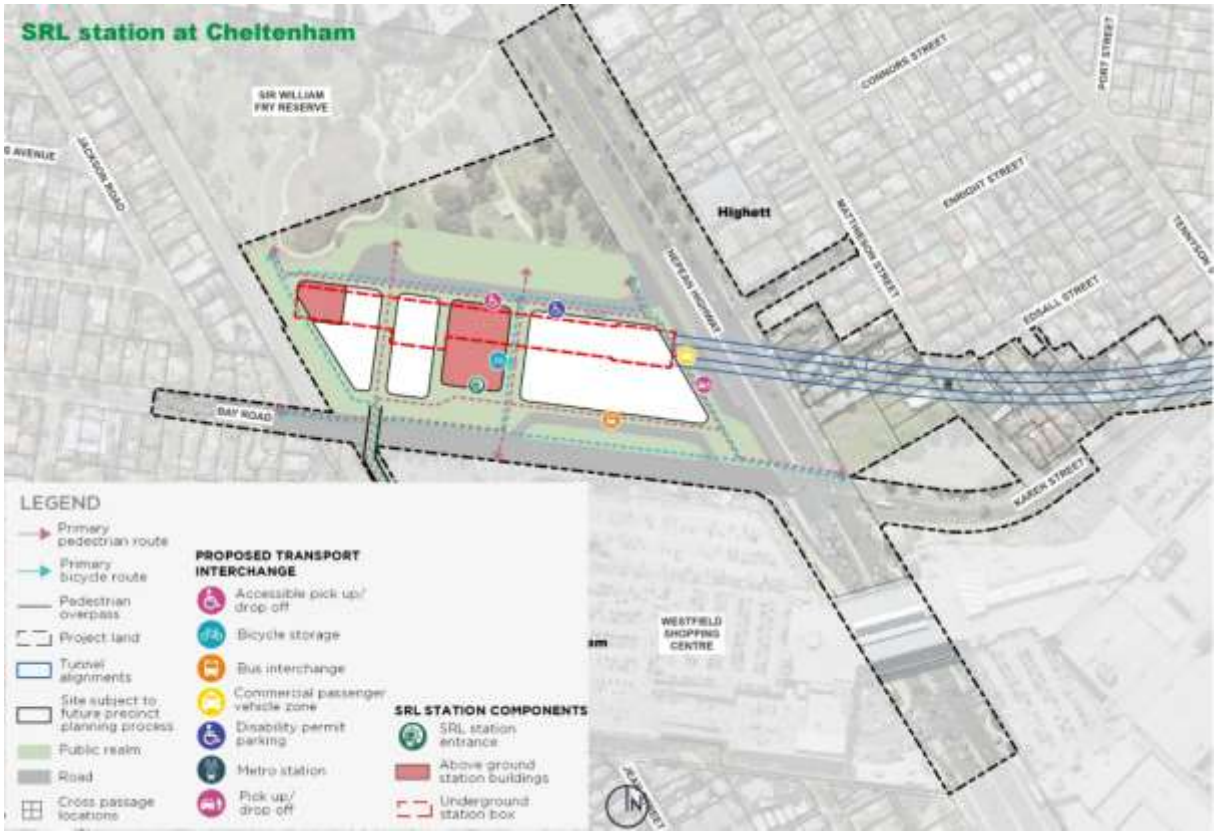
(i) SRL Station at Cheltenham

The Cheltenham Station is located in the City of Kingston. As exhibited, the key features of this station include:

- station entry facing Bay Road and opposite the Southland shopping centre access, with escalators and lifts connecting the concourse and ground levels
- two-level underground station with single gate-line at concourse level
- two platforms with escalators and lifts connecting to the concourse
- crossover facility to enable terminating trains to start in the opposite direction
- pedestrian overpass across Bay Road linking to the existing Southland railway station
- station plaza area including public open space
- new bus interchange with six in-service bus stops
- seven dedicated pick up/drop off facilities in the service lane of Nepean Highway
- bicycle storage for 400 bicycles
- cycle path along the eastern side of the Frankston railway corridor connecting to existing paths within Sir William Fry Reserve
- changes to Bay Road crossing to provide cycle and pedestrian friendly access to the new SRL station.

The location of the SRL station, including the key components, is shown in Figure 3.

Figure 3 SRL station at Cheltenham [9]



(ii) Stabling Facility, Heatherton

The proposed Stabling Facility is located in the City of Kingston. As exhibited, the key features of this facility include:

- stabling for up to 30 trains
- at-grade track, dive structures, tunnel portals and headhouse above each portal structure
- train maintenance facility for all SRL train maintenance requirements
- wheel lathe facility for preventative and corrective maintenance of railway wheels
- test track for testing trains before they go into operation
- office and operational control centre
- train wash and graffiti removal facility
- power supply substation
- water storage and treatment ponds to manage overland flows into and through the site
- shared path on Kingston Road, and improvements to Kingston Linear Walk and Henry Street Reserve, including vegetation enhancement
- vegetated earth bund along the southern boundary and vegetation along Henry Street
- reserve and the western section to screen views and noise for nearby residential areas.

The location of the proposed Stabling Facility, including indicative key components is shown in Figure 4.

[9] EES Summary Report

Figure 4 Stabling Facility [10]

(iii) SRL Station at Clayton

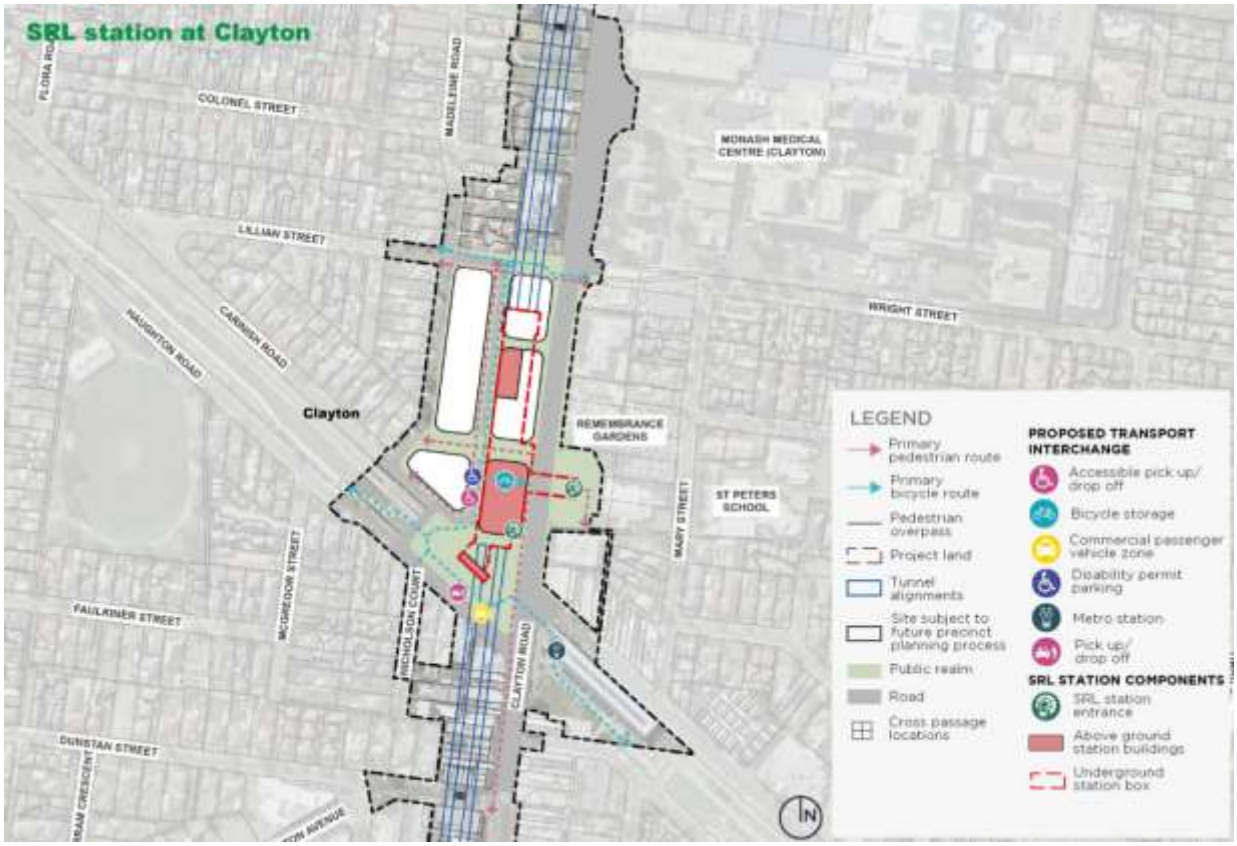
The Clayton Station is located in the City of Monash. As exhibited, the key features of this station include:

- two station entries, east of Clayton Road in the Remembrance Gardens, and west of Clayton Road, north of the existing rail viaducts
- paid area connection between the SRL station at Clayton and the existing Clayton railway station
- two-level underground station including a mezzanine with one gate-line at the concourse level
- two platforms with escalators and lifts connecting to the concourse
- closure of Carinish Road west of Clayton Road to create a pedestrian plaza
- new north-south laneway and access road
- nine dedicated pick-up/drop-off facilities
- bicycle storage for 500 bicycles
- cycle paths and footpaths between Madeleine Street and the Monash Medical Centre, along the eastern side of Station Street to the Djerring Trail.

The location of the SRL station, including the key components, is shown in Figure 5.

[10] EES Summary Report

Figure 5 SRL station at Clayton [11]



(iv) SRL Station at Monash

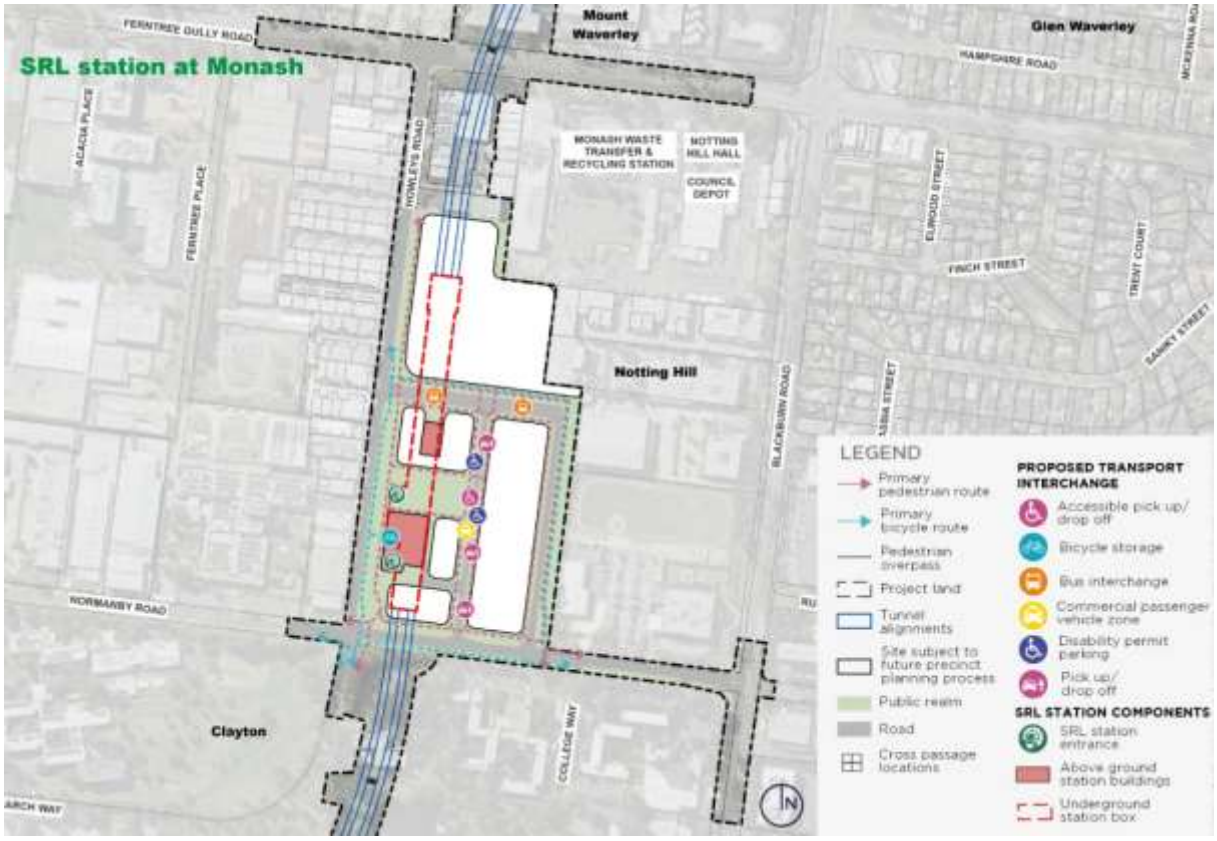
The Monash Station is located in the City of Monash. As exhibited, the key features of this station include:

- crossover facility to the north of the station to enable trains to restart in the opposite direction or to cross between tracks along the alignment
- two station entries facing north and south
- two-level underground station with a single gate-line at the concourse level
- two platforms with escalators and lifts connecting to the concourse
- option to provide a pedestrian underpass under Normanby Road with a southern entrance on the south of Normanby Road on the Monash University campus (noting this option is considered in the EES in case patronage or other considerations warrant it in future and if the underpass solution was taken up, it would replace the south facing entrance)
- provision of a new road, eight bus bays and pick-up/drop-off area
- nine dedicated pick-up/drop-off facilities
- bicycle storage for 700 bicycles and new cycle paths and footpaths.

The location of the SRL station, including the key components, is shown in Figure 6.

[11] EES Summary Report

Figure 6 SRL station at Monash [12]



(v) SRL Station at Glen Waverley

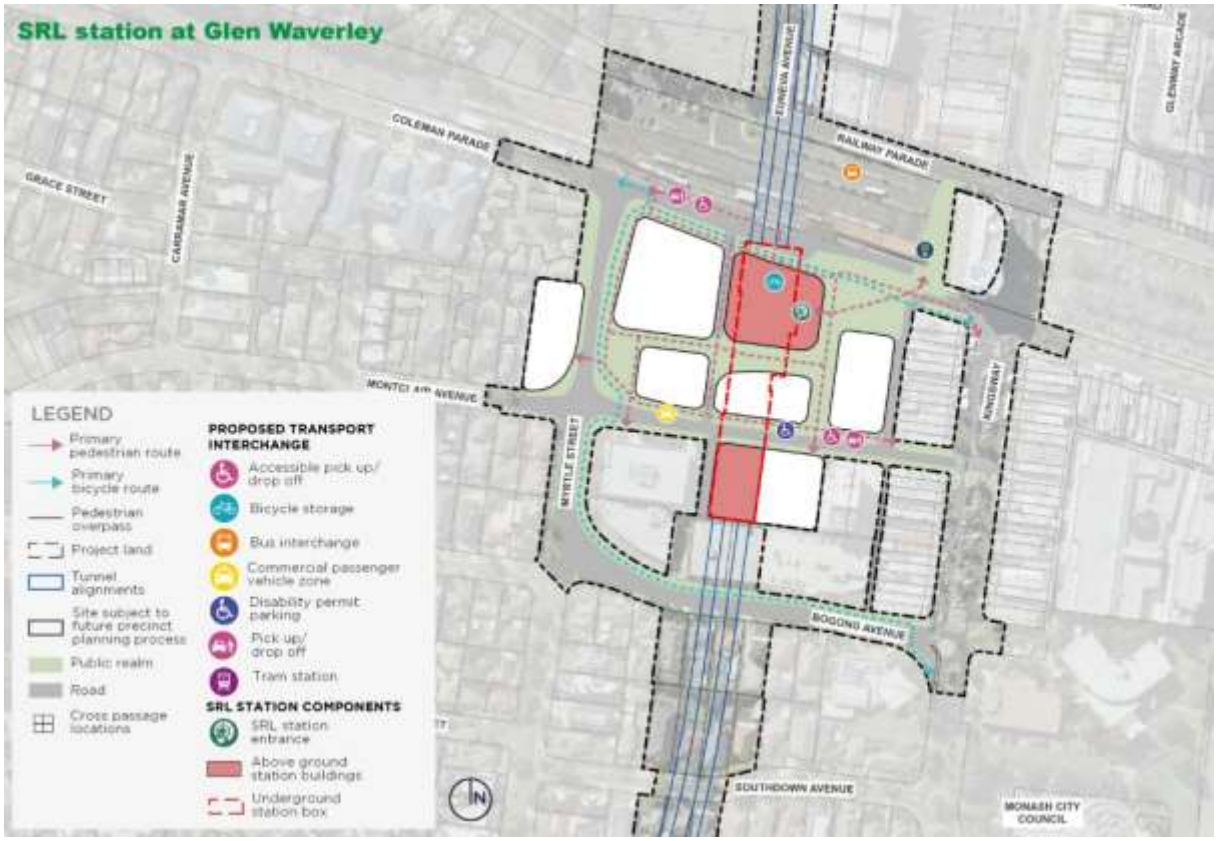
The Glen Waverley Station is located in the City of Monash. As exhibited, the key features of this station include:

- a single station entry facing Coleman Parade, including escalators and lifts
- two-level underground station with a single gate-line at the concourse level
- two platforms with escalators and lifts connecting to the concourse
- new station plaza opposite Coleman Parade, including laneways and paved surfaces around station entrance and a bicycle storage for 600 bicycles
- upgrades to the existing Glen Waverley railway station forecourt to cater for surface connection between stations
- closure of Coleman Parade between the Ikon building entrance and Kingsway
- nine dedicated pick-up/drop-off facilities near Montclair Avenue
- improvements to Myrtle Street and Bogong Avenue
- realignment of Myrtle Street between Coleman Parade and Montclair Avenue to provide sufficient space to construct the project safely
- cycle path along the southern side of the Glen Waverley line corridor.

The location of the SRL station, including the key components, is shown in Figure 7.

[12] EES Summary Report

Figure 7 SRL station at Glen Waverley [13]



(vi) Emergency Support Facility

The Emergency Support Facility (ESF) is located in the City of Monash. The EES noted the ESF is:

> … essential for providing emergency exit for passengers and access for emergency services in case of an emergency incident, and to ventilate the tunnels during emergency incidents.

The EES noted the ESF would include a backup control centre in the event of an incident impacting the Operational Control Centre at the proposed Stabling Facility. ·As exhibited, the key features of this facility include:

- infrastructure to provide access for emergency services and exit for passengers in the case of an emergency incident and to provide ventilation to the rail tunnels
- a two-storey building accommodating equipment and the backup control centre, the ventilation structure connecting to the tunnels, at-grade car parking and a congregation area.

It is understood the ESF would be unstaffed for most of the time, with car parking required only in the event of an emergency.

The location of the ESF, including the key components, is shown in Figure 8.

[13] EES Summary Report

Figure 8 Emergency support facility [14]

(vii) SRL Station at Burwood

The Burwood Station is located in the City of Whitehorse. As exhibited, the key features of this station include:

- single station entry facing Burwood Highway
- two-level underground station with a single gate-line at the concourse level
- two platforms with escalators and lifts connecting to the concourse
- pedestrian overpass over Burwood Highway providing improved north south connection across Burwood Highway
- new bus interchange adjacent to the station on Sinnott Street
- eleven dedicated pick-up/drop-off facilities
- bicycle storage for 750 bicycles
- new cycling paths
- improvement of the Gardiners Creek corridor, with naturalisation of the concrete-lined channel waterway between Burwood Highway and the existing bridge structure at Sinnott Street Reserve.

The location of the SRL station, including the key components, is shown in Figure 9.

[14] EES Summary Report

Figure 9 **SRL station at Burwood** [15]

(viii) SRL Station at Box Hill

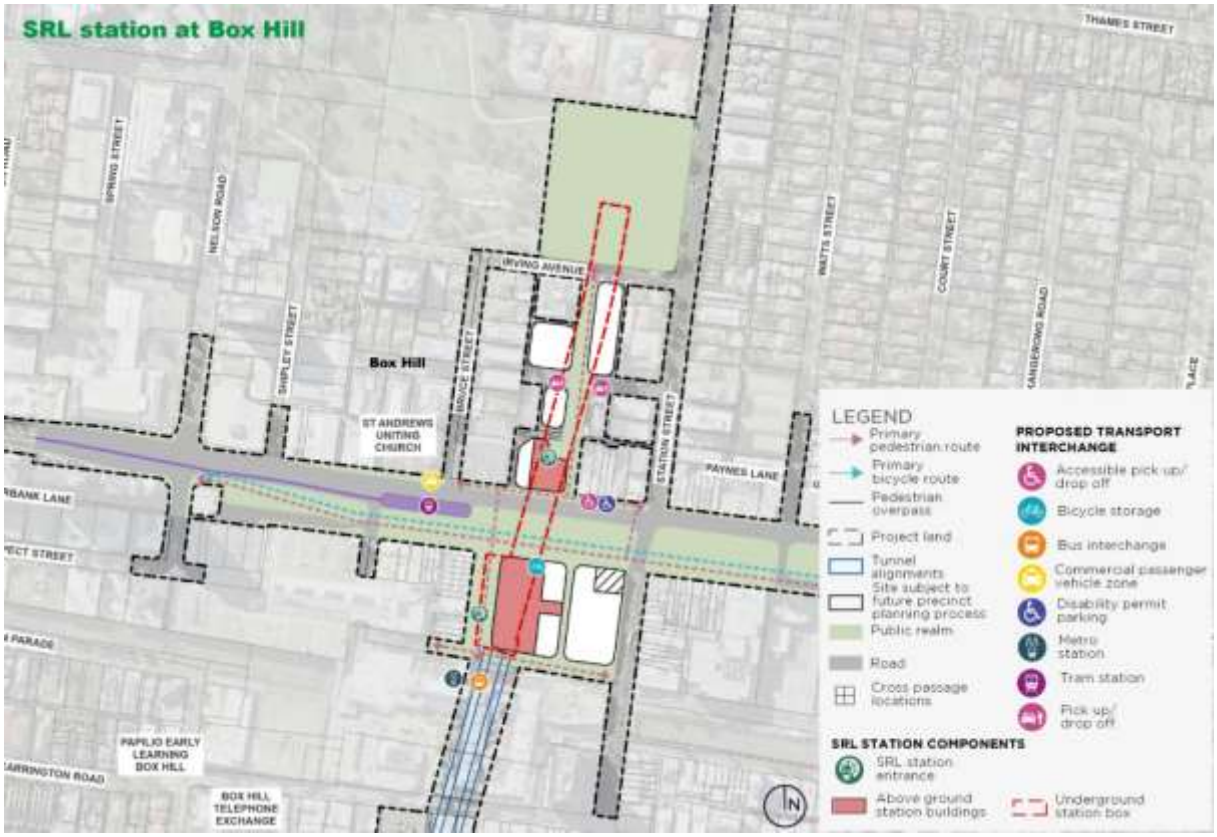
The Box Hill Station is located in the City of Whitehorse. As exhibited, the key features of this station include:

- two entries, within Market Street as a stand-alone entrance with a surface connection to the existing Box Hill railway station, and north of Whitehorse Road
- two-level underground station with two gate-lines at the concourse level
- two platforms with escalators and lifts connecting to the concourse
- end-of-line station for SRL East, with a crossover facility north of the station to enable trains to restart in the opposite direction
- new tram terminus to the west of Market Street, as close as practicable to the Market Street pedestrian crossing
- new public open space along Whitehorse Road between Market Street and Station Street
- new pedestrian promenade linking Whitehorse Road to Box Hill Gardens
- realignment of Whitehorse Road between Nelson Road and Linsley Street to the northern side of the road reserve with two traffic lanes in each direction
- seven dedicated pick-up/drop-off facilities
- bicycle storage for 500 bicycles and new cycling paths and footpaths.

The location of the SRL station, including the key components, is shown in Figure 10.

[15] EES Summary Report

Figure 10 SRL station at Box Hill [16]



2.1.2 Below ground infrastructure

The below ground infrastructure relates to the tunnelling component of the Project, which will be approximately 23.43 kilometres of the 26-kilometre route. It includes tunnels and interconnecting cross passages.

The Project features a twin tunnel, stand-alone rail line that enables passengers to interchange to the existing public transport network.

Tunnelling is complex because of the different types of ground and rock formations, and the existing buildings and infrastructure associated with the suburbs above. The EES notes the tunnel alignment was selected based on a range of factors including geology, topography, existing below ground infrastructure such as basements, and the presence of sensitive equipment that occur at medical, educational and research facilities.

The tunnels would begin in the Sir William Fry Reserve at Highett, and head east to the Stabling Facility. All trains would come to the surface at this location, with portals and dive structures located in the south-eastern and south-western corners of the Stabling Facility. From the Stabling Facility, the tunnels head east under Kingston Road before turning north toward the SRL station at Clayton, and then continue in a northerly direction along the remainder of the alignment to the SRL station at Box Hill, where the SRL East rail line ends.

The tunnels would begin in the Sir William Fry Reserve, and head east to the Stabling Facility. All trains would come to the surface at this location. The tunnels gradually climb to ground level via the western dive structure for trains to access the Stabling Facility or use the eastern dive structure

[16] EES Summary Report

to return to the tunnels. From the Stabling Facility, the tunnels head east under Kingston Road before turning north toward the SRL station at Clayton, and then continue in a northerly direction along the remainder of the alignment to the SRL station at Box Hill, where the SRL East rail line ends.

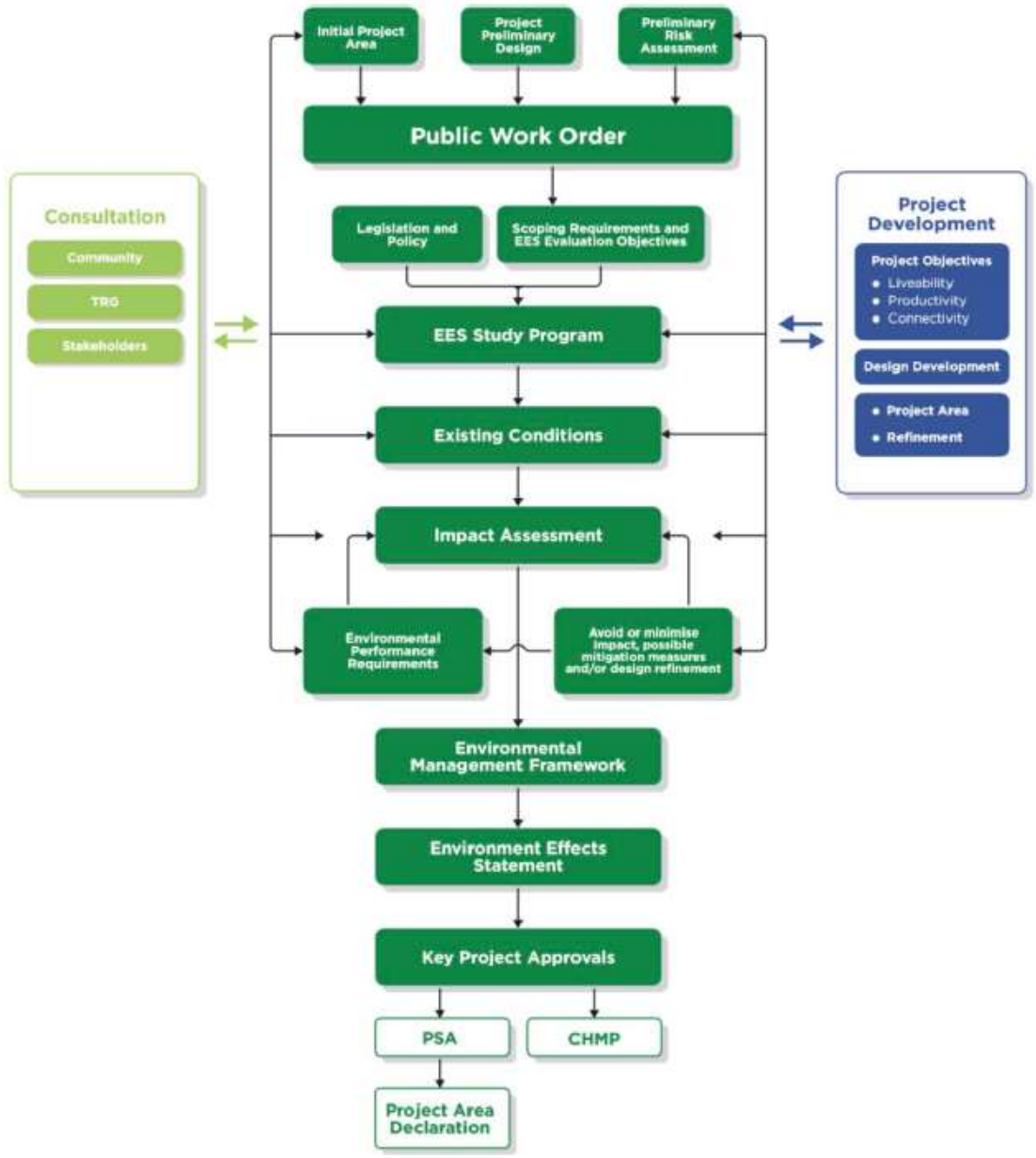
The tunnels would mostly range between 20 to 40 metres below the surface, with the deepest point up to 60 metres below ground under Riversdale Road, Burwood. The SRL stations are located approximately 18 to 25 metres underground. The EES notes that comparatively, Melbourne's City Loop station platforms are about 30 metres underground, with Parliament station 39 metres below the city streets.

There was little in the way of submissions about the location of the tunnels at the Hearing, except where impacts might occur due to noise and vibration. Some submitters expressed concern about tunnels being located underneath their properties but in the main, it was not a major issue in submissions or at the Hearing. The particular impacts in relation to noise and vibration are further assessed in Part B.

2.2 Project assessment and approvals

Figure 11 outlines the EES assessment framework as described by the Proponent.

Figure 11 Environmental Effects Statement Assessment Framework [17]



[17] D220, p23

The key elements of the legislative and policy contexts are described in Appendix E. Figure 12 outlines the key environmental management documentation.

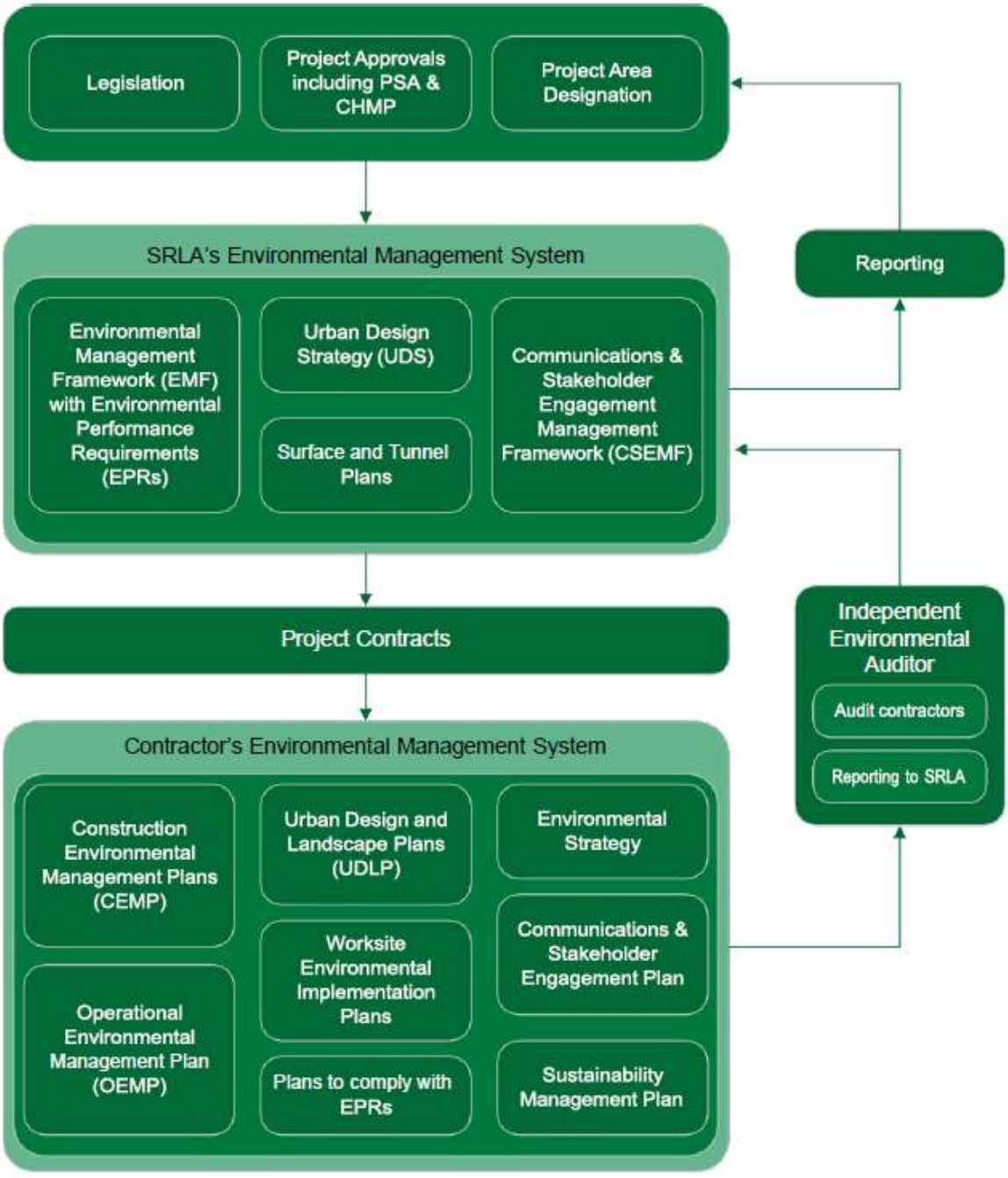


Figure 12 **Key environmental management documentation** [18]

[18] D202, p19

3 Project rationale and alternatives

3.1 Introduction

The project rationale was discussed in Chapter 4 of the EES. In summary, SRL East is the first stage of the SRL, the delivery of which is entrenched in legislation and State planning policy. The Project will deliver improved transport connections and underpin future place-making of the SRL East precincts, responding to the challenges and opportunities of Melbourne's planned growth and development patterns.

The Project would meet the demand for orbital travel and provide redundancy in the rail network, providing users with alternative routes and spare capacity. Improving connectivity will improve productivity and liveability with better access to jobs and education; and alleviate traffic congestion reducing greenhouse gas emission and assisting Victoria achieve its target of zero net emissions by 2050.

3.2 Project rationale

The Proponent described the Project as a transformative project for strategic land use and transport planning for the Melbourne metropolitan area, one entrenched in legislation and planning policy with a high level of public support.

Mr Barlow considered that the Project would be city shaping and have a significant and long-term positive impact on the future growth of Melbourne, providing the required impetus for change to a true poly-centric city. This was echoed by Mr Barnes.

There was clear (but not unfettered) support from Whitehorse, Monash, Kingston and Bayside Councils, Monash and Deakin Universities and EPA, various retail centres and golf clubs amongst others.

Many submitters acknowledged the benefits of SRL East, few argued against it as a project, rather, many submitters sought confirmation about specific impacts, including potential acquisition of property.

Conversely, the proposed Stabling Facility had very little support, particularly from Kingston Council, community groups and many local residents. This facility is the only outright contentious part of the whole proposal.

3.3 Project options and alternatives

(i) Introduction

In addition to setting out the Project rationale, the Scoping Requirements Report required the EES to document the design development process for the Project. The project development process was set out in Chapter 5 of the EES.

The Terms of Reference do not extend to considering alternative sites for stations or the Stabling Facility and tunnel routes. The key issue for the IAC is to determine whether each of the selected sites are appropriate in terms of its environmental effects and impacts.

Station location options were assessed against five criteria:

- Productivity

- Connectivity
- Liveability
- Cost
- Deliverability.

The Stabling Facility, Burwood Substation and the ESF location options were assessed against six criteria:

- Delivery - technical
- Delivery – land and planning
- Connectivity – network considerations
- Connectivity – operability
- Cost
- Productivity and Liveability.

The Proponent provided an indicative timeframe for the construction periods at each SRL location, this is reproduced as Figure 13.

Figure 13 Indicative construction periods at each SRL East location [19]

	Initial Works	Utility relocations, ground improvement and excavation	Tunnel boring machine operations	Civil, structural, architectural and surface works	Tunnel fit-out , safety and operational testing,
SRL station at Cheltenham	N/A	2024-2025 2027-2030	N/A	2030-2033	N/A
Western Portal	N/A	2026-2028	2028-2030	2030-2032	N/A
Stabling Facility	2022-2023	2024-2028	N/A	2028-2031	N/A
Eastern Portal	2022-2023	2023-2025	2025-2027	2027-2028	N/A
SRL station at Clayton	2022-2024	2024-2027	N/A	2028-2031	N/A
SRL Station at Monash	2022-2024	2024-2026	2026-2029	2027-2031	N/A
SRL station at Glen Waverley	2023-2025	2025-2027	N/A	2027-2031	N/A
Emergency Support Facility	N/A	2025-2026	N/A	2027-2028	N/A
SRL station at Burwood	2023-2025	2025-2027	2025-2029	2027-2031	N/A
SRL station at Box Hill	2023-2025	2025-2028	N/A	2028-2032	N/A
Line-wide	N/A	N/A	N/A	N/A	2032-2035

The various options investigated and assessed by the SRLA for the stations and the Stabling Facility are briefly discussed below.

[19] D415, p9

(ii) Cheltenham Station

Three location options for the new SRL station at Cheltenham were investigated and assessed, these being:

- Option 1 - Sir William Fry Reserve
- Option 2 - Bay Road
- Option 3 - Chesterville Road.

Option 1 was preferred by the Proponent.

In summary, Option 1 was chosen as the preferred site for the following reasons:

- best overall outcomes across the five assessment criteria
- best connectivity, being closes to Southland railway station
- avoids high costs of property acquisition
- best deliverability with minimal disruptions to the local community and activity centre during construction
- equally favourable to Option 2 for productivity and liveability.

(iii) Clayton Station

Three location options for the new SRL station at Clayton were investigated and assessed, these being:

- Option 1 - west of Clayton Road
- Option 2 - Clayton Road (north of viaduct)
- Option 3 - Clayton Road (under viaduct).

Option 1 was preferred by the Proponent for the following reasons:

- best overall outcomes across most of the five assessment criteria
- ranked third for connectivity, but a paid connection would link it to Clayton railway station
- ranked first for deliverability and cost due to lower constructability uncertainty
- equal first preference for productivity and liveability.

(iv) Monash Station

Seven location options for the new SRL station at Monash were identified and assessed, these being:

- Option 1 - Howleys Road (north-south alignment)
- Option 2 - Normanby Road (east-west alignment)
- Option 3 - Howleys Road (east-west alignment)
- Option 4 - Ferntree Place (north-south alignment)
- Option 5 - Blackburn Road (northeast-southwest alignment)
- Option 6 - Blackburn Road (north-south alignment)
- Option 7 - Howleys Road, north of Option 1 (north-south alignment).

Early consultation with Monash University determined that options centrally located within its Clayton campus were not preferred due to on campus constraints and construction impacts.

Option 1 was preferred by the Proponent for the following reasons:

- ranked first for deliverability and equal first for cost due to shorter tunnel length, a relatively shallow station box and maintaining public roadways during construction

- ranked equal first for productivity and liveability, being strategically located in an employment focussed area with redevelopment opportunities and connection to the university and existing business parks
- ranked equal first for connectivity being within walking distance to Monash University and its bus interchange.

Option 1 also includes Option A – a station entry on the south side of Normanby Road with an underground link to the station. While included in the EES, there was no specific assessment of its impacts or timing of its provision noted in the EES.

(v) Glen Waverley Station

Six location options for the new SRL station at Glen Waverley were identified and assessed, these being:

- Option 1 - Railway Parade (east-west alignment)
- Option 2 - Glendale Street (north-south alignment)
- Option 3 - Euneva Avenue (north-south alignment)
- Option 4 - Kingsway (north-south alignment)
- Option 5 - West of Kingsway and north of Glen Waverley line (north-south alignment)
- Option 6 - West of Kingsway (north-south alignment).

Option 2 was preferred by the Proponent for the following reasons:

- ranked first for connectivity providing a good transport interchange without requiring disruption to the Glen Waverley railway station or the bus interchange
- ranked first for cost and deliverability with the second shortest tunnel, shallower station box and fewer commercial property acquisitions
- ranked second for productivity and liveability being located at the edge of the Major Activity Centre and further from The Glen Shopping Centre.

(vi) Burwood Station

Four location options for the new SRL station at Burwood were investigated and assessed, these being:

- Option 1 – south of Burwood Highway
- Option 2 – 200 Burwood Highway
- Option 3 – 345 Burwood Highway
- Option 4 – 221 Burwood Highway.

Option 2 was preferred by the Proponent for the following reasons:

- ranked first for productivity and liveability providing an opportunity to maximise precinct development potential whilst being close to Deakin University
- ranked equal first for connectivity being adjacent to Burwood Highway for connecting tram and bus services and near Deakin University
- ranked equal first for cost and deliverability requiring minimal property acquisition and minimal construction constraints.

(vii) Box Hill Station

Five location options for the new SRL station at Box Hill were investigated and assessed, these being:

- Option 1 – Nelson Road

- Option 2 – Shipley Street
- Option 3 – Market Street
- Option 4 – Station Street
- Option 5 – Whitehorse Road.

Option 3 was preferred by the Proponent for the following reasons:

- ranked first for cost and deliverability providing a relatively large simple site for construction, although with considerable land acquisition. It also facilitates the potential for a tunnel boring machine launch/retrieval shaft in Box Hill Gardens for construction of future stages of SRL
- ranked equal first for productivity and liveability, being centrally located in the Metropolitan Activity Centre and facilitates site consolidation and support major growth
- ranked equal first for connectivity providing opportunity for a shared station entry with the existing Box Hill railway station and shortest interchange distances.

(viii) Options for the rail route

An assessment of two potential tunnel forms was undertaken: a single large diameter tunnel, and twin tunnels with cross passages. The twin tunnel option was preferred as it would:

- produce less spoil
- require less concrete and steel
- minimise tunnelling time
- reduce costs for delivery and operation
- provide flexibility in station designs.

Indicative tunnel routes were developed for each of the shortlisted Project options to inform option assessments. Once the options for the stations, Stabling Facility and the ESF were selected the tunnel alignment was progressed to select the most efficient route, considering:

- utilities
- geological profile
- topographical profile
- existing below ground infrastructure
- sensitive equipment and spaces.

Some constraints were not able to be avoided such as:

- Monash Health Kingston Centre, achieving additional lateral clearance target would impact a major substation
- Alex Fraser Ponds, achieving lateral clearance would increase tunnel length by 180 metres.

The IAC notes that the Monash University agreement includes a variation to the route through the University. The amended alignment will result in a small decrease in the number of properties being affected by Specific Controls Overlay (SCO14) and Specific Controls Overlay (SCO15), with no additional properties affected. The changes are shown in D787 and D788.

(ix) Stabling Facility

In addition to the assessment criteria, the Stabling Facility had a number of functional requirements including:

- being in close proximity to the main SRL line and designed for efficient train movement

- being of suitable size
- not located beyond the end of the line due to costs and land acquisition impacts.

The Stabling Facility is proposed to be located on land known as the Delta site on Kingston Road, Heatherton. It was one of ten sites assessed for the purposes of the EES, with three of these sites being subject to more detailed assessment. These sites include:

- Option 1 Kingston Road, Clarinda – This site is located east of Dingley Bypass and north of Kingston Road. The site intersects the Victory Road landfill cells (Baxter Tip) and market gardens (agriculture).
- Option 2 Clayton Road, Clayton South – This site is located east of Clayton Road and north of Heatherton Road. A concrete supply business and industrial warehouses are located at the northern end of the site, while the southern area of the site is market gardens (agriculture). Capped and uncapped landfill cells are present.
- Option 3 Carroll Road Landfill, Heatherton – This site is located north of Old Dandenong Road and west of Carroll Road. It includes a closed landfill with ongoing site rehabilitation works. Industrial buildings are to the north, and Mavis Hutter Reserve is immediately south of the landfill.
- Option 4 Heatherton Farmland – This site is located on Old Dandenong Road (south of Kingston Road) in Heatherton. The area is currently a mix of residential and agricultural uses and is located within the Green Wedge Zone.
- Option 5 Fairbank Road, Clayton South – This site is located east of Fairbank Road and east of Clayton Road. The area is currently industrial in character.
- Option 6 Heatherton Cleanfill, Kingston Road – This site is located north of Kingston Road, west of Old Dandenong Road and south of Henry Street in Heatherton. This site is primarily a clean fill site and also includes a nursery, dog park and one residential property.
- Option 7 Moorabbin Industrial Precinct – This site is located between Chesterville Road and Warrigal Road, south of Levanswell Road in Moorabbin. The site is within an industrial estate and comprises a large number of industrial properties.
- Option 8 North of Dingley Bypass – The proposed site is north of Dingley Bypass bordered by Tootal Road, Boundary Road and Heatherton Road. The site is currently a mixed used area characterised by industrial / commercial on the east, agricultural in the centre and a former landfill on the west.
- Option 9 West of Mordialloc Freeway – The proposed site is immediately west of Mordialloc Freeway, bordered by Old Dandenong Road, Dingley Bypass and Boundary Road. The site is currently mixed use characterised by industrial, commercial and agricultural land, with a former landfill in the centre.
- Option 10 East of Mordialloc Freeway – The proposed site is east of Mordialloc Freeway, bordered by the Dingley Bypass and Tootal Road. The site is currently mixed use characterised by industrial, commercial and agricultural land, with a former landfill on the south western portion [20].

Options 4, 6, and 7 were subject to further review against the six assessment criteria.

The Proponent preferred Option 6, the Heatherton Cleanfill (Delta site) for the following reasons:

- ranked second for delivery (technical), requiring significant ground improvement works before construction works can begin but providing flexibility to address technical requirements
- ranked first for delivery (land use), whilst it would not impact productive agricultural areas to the same extent as Option 4, the land is earmarked for Kingston Council's Chain of Parks concept

[20] EES PD4 – Stabling Facility

- ranked second for connectivity (network), with Option 7 the shortest route and Option 4 the longest route
- ranked equal first for connectivity (operations), all three options equally favourable with Options 4 and 6 not precluding future expansion subject to necessary approvals
- ranked first for cost, due to comparatively lower land acquisition and tunnelling costs
- ranked first for productivity and liveability as the site is predominately vacant.

Some submitters suggested further sites be reviewed, these included:

- a site near the junction of Warrigal and South Roads, Moorabbin
- the former Kingswood Golf Course
- the Heatherton Corporate Park.

Document 221 tabled by the Proponent provided more detail on the assessment of the options for the Stabling Facility and concluded:

> The site is recommended due to its reduced impacts to residential properties and agricultural businesses as well as comparatively lower land acquisition and tunnelling costs resulting in overall lower costs. Based on further analyses and concept design, Option 6 is considered to provide the most flexibility to accommodate varying design parameters and depot features and is confirmed as the baseline.
>
> Site investigations of the recommended site have been carried out, along with impact assessment studies. Community and stakeholder consultation will be ongoing, including drop-in information sessions over the coming weeks [21].

For the purposes of this assessment, the IAC has no further detailed information about any of the optional sites and it is not able to pursue these as options.

On the assumption that the Stabling Facility would be located on the preferred site, Kingston prepared the 'Southern Stabling Facility Design Advocacy Report' (Oculus, November 2021), which provided options and ideas about how this site could be developed from its perspective (D221).

[21] D221, P10.

4 Key threshold issues

This chapter provides an overview of key threshold issues that relate to the whole of the Project and include:

- policy support for the Project
- implications of the new Environment Protection Act 2017 (*EP Act*) which came into force 1 July 2021
- role of the independent environmental auditor (IEA)
- what the IAC has considered/not considered.

4.1 Policy support for the Project

The IAC's Terms of Reference do not include assessment of the rationale of the Project but rather requires assessment of the environmental effects of the Project. The IAC accepts that the Project will be city shaping and transformative for Melbourne.

The IAC was advised the SRL program is supported by special-purpose legislation.

> The Suburban Rail Loop Act 2021 (Vic) (SRL Act) was assented to on 19 October 2021 and came into operation on 1 December 2021. The main purposes of the SRL Act are to establish the SRLA and to confer on it appropriate functions and powers:
>
> (a) to plan and deliver the SRL and development associated with the SRL; and
>
> (b) to enable the SRLA to operate, or manage the operation of, the SRL or to manage development associated with the SRL [22].

The *SRL Act* allows the Proponent to plan, deliver, maintain, operate and manage non-transport and transport infrastructure for the new orbital rail line from Cheltenham to Werribee. Further, it provides for the planning, delivery and management of precinct development and associated developments connected with the new orbital rail line. It provides for associated land use planning, activation of precincts and associated funding, financing and consultation.

Section 5 of the *SRL Act* sets out the objectives of the SRL program, which include:

> (a) to integrate a new orbital rail line with existing and planned public transport and road networks in the State;
>
> (b) to facilitate sustainable population growth, urban renewal and improved liveability;
>
> (c) to enhance opportunities for the Victorian community, Victorian businesses … to capture value created by the development of precincts, non-transport infrastructure, transport infrastructure and other investments in relation to the new orbital rail loop [23].

The IAC notes s65 of the *SRL Act* empowers the Minister for the Suburban Rail Loop to declare an area of land to be an SRL planning area. In making that declaration, that Minister must have regard to both the SRL program objectives and the Authority's object. Further, s72 of the *SRL Act* empowers the Premier to declare a development or proposed development to be an SRL project, subject to being satisfied that the development or proposed development is not prohibited by or under an applicable planning scheme. Further, in making a declaration, the Premier must have regard to the SRL program objectives, the Authority's object and the economic, community and social benefit to the State or the area of the State in which the development or proposed development is to be carried out.

[22] D200, para 29
[23] D200, para 31

The IAC was advised:

> By section 83(1)(c), SRLA is responsible for an SRL project. Parts 5, 6, 7 and 9 of the *Major Transport Projects Facilitation Act 2009* (Vic) (MTPF Act) apply to an SRL project (s 78(1)). This includes the powers of acquisition under that Act.
>
> No declarations of SRL planning areas or SRL projects have been made under the *SRL Act* to date [24].

The Project the IAC is considering is one (and the first) component of the broader SRL project for metropolitan Melbourne. The primary role of the IAC is to consider the environmental effects of the construction phase and operation of the exhibited Project. The Proponent noted in submission:

> This is an historic moment for transport and strategic planning for Melbourne. All major transport projects can be said to contribute to some degree to the shaping of Melbourne, but the SRL stands alone for its potential to influence, and ultimately transform, the layout and function of the metropolitan area [25].

The Project is to be delivered under special purpose legislation and the powers conferred under the *SRL Act* support the delivery of an orbital rail loop and associated development.

The Proponent noted:

> The SRL Project is entrenched in legislation and planning policy, and it enjoys a high level of public support. These factors remain constant and weighty in balancing issues raised in submissions to the IAC. The common goal is to deliver the Project to facilitate the wide range of social and economic benefits that will stem from the legislated project objectives [26].

The IAC notes the high-level policy support for the Project through the specific legislation and Plan Melbourne.

4.2 Implications of the Environment Protection Act 2017

The new *EP Act 2017* came into effect on 1 July 2021 and replaced the previous framework of the *Environment Protection Act 1970*. The EP Act provides the overarching legislative framework for the protection of the environment in Victoria. The framework establishes a proactive approach to preventing the risks of harm to human health and the environment from pollution and waste. It introduces the concept of the General Environmental Duty (GED).

The GED requires the elimination of risks of harm to human health and the environment from pollution and waste 'so far as reasonably practicable' and where elimination is not possible, the risks must be reduced and minimised so far as reasonably practicable.

It is no longer sufficient to simply meet applicable regulations if the implementation of additional measures are deemed as reasonably practicable and can further minimise or eliminate the risks of harm. The duty conferred by the GED is ongoing and iterative, requiring reassessment and review as the 'state of knowledge' develops (i.e. new technologies and methodologies).

For this Project, the EPA has stated compliance with the EMF may not result in compliance with the GED. The proactive approach required by the GED will require a dynamic process of identification, assessment and control of risks to human health and the environment from pollution and waste [27].

[24] D200, paras 38, 39
[25] D189, para 9
[26] D189, para 9
[27] D434 EPA Submission Appendix A 4.3.1

4.3 The role of the independent environmental auditor

The role and responsibilities of the IEA is described in the Day 4 EMF [28]. The IEA will most likely comprise a body of professionals with expertise in a range of disciplines for the purpose of auditing all contractors for compliance with the EMF, EPRs and project approvals.

This role is different and distinct from the role of an independent Statutory Victorian Environmental Auditor (Statutory EA). The EPA supported the inclusion of a Statutory Environmental Auditor/s within the general IEA 'Team', with suitable expertise across contaminated land, groundwater and LFG assessment (i.e., those persons appointed under the *EP Act* [Division 1 of Part 8.3]).

Kingston expressed concerns about the distinction between the IEA and a Statutory EA along with the proposed IEA for this Project not being truly independent as they will be appointed and employed by the Proponent. Kingston suggested the IEA be renamed as 'Project Auditor' to avoid confusion [29].

4.4 What the IAC has considered/has not considered

There was some discussion at the Hearing and in submissions about the scope of what the IAC could and could not review and comment upon.

In its closing submissions, the Proponent noted there were several matters raised by submitters not influential to the considerations or assessment of the IAC. These included:

> a) arguments that do not align with the statutory functions of SRLA and the scope of the Project as advised by the Authority;
>
> (b) arguments seeking to constrain State settlement policy expectation for substantial change;
>
> (c) arguments that the separate, future precinct planning processes, should be incorporated into the assessment of the Project, criticisms of those separate processes, and criticisms of SRLA's preparation for those separate processes;
>
> (d) arguments contending that information was inappropriately "drip-fed" or even suggesting that there is justification for a supplementary EES;
>
> (e) arguments about the use of a reference design for the purpose of impact assessments;
>
> (f) arguments questioning the relevance of wider Project benefits;
>
> (g) arguments about the future planning of the "sites subject to future precinct planning" shown as white areas in the Surface and Tunnel Plans; and
>
> (h) wholesale design changes, location changes, and additions to the Project that clearly fall outside the scope of the Project [30].

Submissions from the Department of Transport (DoT) generally supported those of the Proponent.

Whitehorse and Monash noted:

> The fundamental purpose of the EES process is to clearly identify and understand the environmental effects of a project under assessment, including to identify and understand the benefits that will be realised from the project and to weigh those against the adverse effects of the project.
>
> One of the issues with this Project is the extent to which its stated benefits appear to rely on the realisation of benefits associated with the totality of the multi-stage SRL project, including the future precinct structure planning. In particular, although expressly excluded from the

[28] D795
[29] D756 paras 4.26-4.28
[30] D775, para 24

> EES assessment for the Project, the EES provides indicative future urban context plans showing a 1.6km radius precinct 'catchment', and ambition statements, for each of the six new stations [31].

Whitehorse and Monash further noted the stated benefits of the Project being:

> (a) rail connectivity enhancements between Cheltenham and Box Hill;
>
> (b) reduction in use of and reliance on private vehicles, and consequential improvements in business and freight related road movements;
>
> (c) reduction in crowding on some Metro lines and stations;
>
> (d) introduction of a rail option for people moving around the east and south-east suburb;
>
> (e) providing access to jobs and education;
>
> (f) reduction in travel time for some rail journeys;
>
> (g) stimulating economic development along the SRL East corridor;
>
> (h) enhancing liveability by attracting businesses to the (future) SRL East precincts, facilitating community connections, improving access to healthcare (through rail connectivity), improving affordability, and supporting cycling access [32].

Whitehorse and Monash expressed concern about the Project taking a reference design approach and noted such an approach makes it very difficult to properly assess the full impacts of the Project due to lack of detail in the plans.

Further, Whitehorse's concern about the process for preparation of the precinct plans was noted in its closing submission, where it submitted:

> The Councils' concerns about the process for precinct planning have also not been allayed by the additional material and additional submissions provided by the SRLA as the hearing has progressed. The SRLA points to the SRL East 'Transport and precinct planning' fact sheet 7 as demonstrating that there will be an opportunity for public participation. The fact sheet does refer to consultation but, as the IAC Chair noted after this document was tabled, the fact sheet also states that:
>
> - The structure plans will be implemented through amendments to the relevant planning schemes, with independent reviews as required by legislation.
>
> Given the legislative regime applicable to the amendment of planning schemes in Victoria, and particularly the potential application of sections 20(4) and 20(6) of the Planning and Environment Act 1987, the situation remains that there is no certainty whatsoever in relation to 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 [33].

Whitehorse invited the IAC to comment on this issue and to urge that the SRLA commit to a full public participation process in considering future precinct planning. Likewise, Whitehorse urged there to be clear and transparent processes for stakeholders to have the opportunity to comment on any changes to the Incorporated Documents. Whitehorse further noted:

> For a project of this nature and scale of impacts, that is a wholly unreasonable approach to take, and not at all consistent with the purposes of the EES process. It entirely defeats the effect of requiring the Project to be generally in accordance with the S&T Plans, if they can be amended without due public process and without limits on the extent of additional adverse impacts [34].

Whitehorse disagreed with the Proponent that the Terms of Reference confine the ambit of the considerations of the IAC. It urged the IAC to make whatever recommendations it saw fit in the context this is a project of State significance that impacts on multiple locations.

[31] D188, paras 7, 8
[32] D188, para 10
[33] D757, paras 12, 13
[34] D757, para 15c

Other submitters, including Prof Buxton (S198), the Town and Country Planning Association Inc (S280), the Rail Futures Institute (S281) and S349 raised higher order concerns about the Project's strategic justification and the consideration of alternative design approaches.

Monash, Kingston and Move the Train Yard called for the IAC to recommend to the Minister for Planning that a supplementary EES be prepared for matters relating to proposals that the Glen Waverley Metro Rail line be relocated underground as part of this process and the location of the Stabling Facility be further reviewed. The Proponent rejected these propositions and noted in closing:

> 41. Whether a supplementary statement is called for under s 5(1) of the Environment Effects Act 1978 (Vic) (EE Act) is a matter for the Minister's discretion, premised upon the Minister determining that "additional information [is] necessary for the making of his or her assessment" of the declared public works.
>
> While the Minister may determine that further information is necessary for the making of his or her assessment, that will necessarily be a matter for the Minister. The IAC, within its Terms of Reference, has the powers to obtain information as it sees fit. It has exercised those powers in this process.
>
> 42. It is not open for the Minister to call for a supplementary statement in respect of the environmental effects of works that do not form part of the declared Project, or because a submitter has proposed that a modified or additional project should be delivered. Properly construed, such a submission is an effort to expand, or change, the public works subject to assessment under the EE Act (and, therefore, to dispute the established scope of the Project and the Inquiry).
>
> 43. The submissions made by MCC in respect of the need for a supplementary EES concerning the lowering of the MMRN station at Glen Waverley is an obvious example of this. Another example is found in the submissions calling for a supplementary EES to assess the relocation of the Stabling Facility.
>
> 45. 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 [35].

The IAC is aware of the limited scope of its considerations and while it conceded some matters put before it could have merit and may be good ideas, it is not able to pursue these through this process.

It is not the role of this IAC to make a recommendation on whether the Project should be approved, that is a decision for Government. Its primary role is to consider and report upon the environmental effects of the Project and make recommendations relating to mitigation measures.

While there was criticism of the approach to the reference design, this assessment of the environmental impacts is at a point in time, where the role of the IAC is to assess the key impacts.

In summary, the report of the IAC considers and reviews the various submissions and evidence but has not undertaken assessment of:

- the basis of the SRL legislation
- the SRL Business Case
- the potential monetary costs of the Project
- SRL North (Box Hill to Melbourne Airport) or SRL West (Melbourne Airport to Werribee)
- precinct planning for the SRL stations.

The IAC does, however, make some commentary in relation to submissions made about some of these issues where relevant in the context of particular issues raised.

[35] D775

PART B: ENVIRONMENTAL EFFECTS OF THE PROJECT

Part B includes 11 Chapters (5 to 15) based on the scoping requirements evaluation themes (with corresponding EES technical reports) that address the project wide and place-based issues across the proposed route.

5 Aboriginal and cultural heritage

5.1 Introduction

Aboriginal and cultural heritage is discussed in:

- EES Technical Summaries:
  - Aboriginal Cultural Heritage
  - Historical Heritage
- Technical Appendices:
  - A.1 – Aboriginal Cultural Heritage Impact Assessment
  - L.1 – Historical Heritage Existing Conditions
  - L.2 – Historical Heritage Impact Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed 10 mitigation measures in the EPRs to manage the impacts of the Project on Aboriginal cultural and historical heritage. These included:

- EPR: ACH1
- EPRs: HH1 to HH9.

EPR: GM3 requires the preparation of ground movement plans that address structural and asset damage, having particular regard to heritage places.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TN:

- TN16 – Aboriginal cultural heritage management and engagement activities (D334).

Additionally, the IAC had regard to:

- relevant submissions and evidence.

Table 1 lists the Aboriginal cultural and historical heritage evidence.

Table 1 Aboriginal and cultural heritage evidence

Party	Expert	Firm	Area of expertise
Proponent	Jeff Hill [36]	Aurecon	Aboriginal Cultural Heritage
Proponent	Kate Gray	Lovell Chen	Heritage
Whitehorse	Jim Gard'ner	GJM Heritage	Heritage

5.2 Aboriginal heritage

5.2.1 What did the EES say?

The Project is within the boundaries of two Registered Aboriginal Parties (RAP):

- Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC)
- Bunurong Land Council Aboriginal Corporation (BLCAC).

[36] Evidence filed but not called at the Hearing

The WWCHAC/BLCAC boundary is located midway along the tunnelling section linking the SRL Monash and Glen Waverley Stations. WWCHAC is the responsible RAP for the northern section and BLCAC is the responsible RAP for the southern section.

The Project requires the approval of a Cultural Heritage Management Plan (CHMP) for each of the RAP areas in accordance with the *Aboriginal Cultural Heritage Act 2006*.

The EES identified two sites on the Victorian Aboriginal Heritage Register (VAHR) within the Project area:

- VAHR 7992-1204 (an artefact scatter within the current Dingley Bypass area and above a proposed section of tunnel that is unlikely to be impacted by the Project)
- VAHR 7922-1442 (an artefact scatter within the SRL Burwood Station area that will be impacted by the Project and will require artefact salvage).

The EES outlined the processes for further, more detailed investigations to identify other sites and how these and other sites identified during construction would be managed.

The EES concluded impacts on Aboriginal cultural and historical heritage would be minimal because the Project would predominately rely on tunnelling, while the surface elements of the Project are already in highly modified and disturbed areas.

5.2.2 Key issues

The key Project wide issues to be resolved are:

- status of the two CHMPs
- treatment of two Aboriginal cultural heritage sites identified since the release of the EES
- opportunities for further RAP involvement in the Project.

Specific issues in relation to the Stabling Facility, Monash Station and Gardiners Creek (Burwood) are discussed below.

5.2.3 Project wide

(i) Evidence and submissions

The Proponent submitted Aboriginal cultural heritage impacts will be appropriately managed through implementation of the two CHMPs. It outlined the consultation undertaken with the RAPs. It provided an overview of the requirements of the Aboriginal Cultural Heritage Act and noted the CHMPs must be approved before the Project works (those that are subject to the EES) can commence.

In addition, the Proponent consulted with the RAPs in relation to the Urban Design Strategy (UDS) and the preparation of an 'Aboriginal Cultural Themes' document that would inform elements of the Project's design.

Once the CHMP complex assessments are complete, further consultation will be held with the RAPs about appropriate management recommendations.

Mr Hill prepared the EES Aboriginal Cultural Heritage Impact Assessment and has an ongoing role advising the Proponent through the CHMP process. Mr Hill's evidence report outlined earlier changes to the RAP and CHMP boundaries, and provided an overview of the Aboriginal cultural heritage impact assessment methodology.

Mr Hill highlighted the use of tunnelling and confining surface works to already disturbed areas would minimise possible impacts on Aboriginal cultural heritage. He was satisfied with the exhibited Aboriginal cultural heritage EPR that requires the implementation and compliance with the CHMPs.

Mr Hill described the further fieldwork and investigations undertaken as part of the CHMP process and advised that two previously unrecorded Aboriginal cultural heritage sites had been identified.

He advised VAHR registration forms for these sites are being prepared and CHMP management conditions will be discussed with BLCAC (the relevant RAP). The IAC requested further information about these sites (D240) that was provided in a memorandum from Mr Hill included in TN16 (D334).

The memorandum described the two sites and the registration process:

- A total of 10 stone artefacts at the Stabling Facility will be registered as 'low density artefact distribution' (LDAD)
- seven stone artifacts at Normanby House (Monash Station) will be registered as LDAD.

Mr Hill advised that a management response will be discussed with BLCAC and concluded the sites would have '*no overall implications for the Project*' [37]. His evidence noted the most likely outcome would be salvage excavations prior to construction to retrieve artefacts within the impact areas.

Submissions from Councils, Government agencies, community groups and individuals generally supported the CHMP process and ongoing consultation with the RAPs.

Melbourne Water indicated it would welcome Traditional Owner guidance in relation to the naturalisation of Gardiners Creek. The KooyongKoot Alliance and Friends of Gardiners Creek supported Traditional Owner involvement in Gardiners Creek and the broader Burwood Station site.

Yarra Valley Water submitted Traditional Owners should be involved in EPR C1 (Environmental investigation, monitoring and reporting), specifically in relation to species selection and watering options. It submitted the Proponent should form a partnership with the Traditional Owners, beyond the formal requirements of the CHMPs, potentially including financial and technical support.

There were no submissions from the RAPs in response to the exhibition of the EES and the IAC subsequently invited them to make submissions at the Hearing (D437 and D438). Neither RAP responded to those invitations.

(ii) Discussion

Cultural Heritage Management Plans

The IAC accepts the CHMPs will be the principal mechanism to address Aboriginal cultural heritage impacts and notes the position of the Proponent that the Project cannot proceed without their approval. Although the IAC did not have the benefit of submissions from the RAPs, it has reviewed the available material and is not aware of any matters that would preclude the CHMPs being progressed.

The IAC notes the nature of the tunnel elements of the Project and the location of above ground works in highly disturbed areas will limit the expected impacts on Aboriginal cultural heritage.

[37] D334, memorandum from Mr Hill

Previously unrecorded sites

The IAC notes the two previously unrecorded sites, Mr Hill's advice about their LDAD status and his evidence they will not impact on the Project. The IAC supports their nomination for inclusion in the Victorian aboriginal heritage register and consultation with BLCAC to determine suitable management responses.

The IAC is satisfied appropriate processes are in place to provide for management of these sites and any other sites identified as the Project proceeds.

Further Traditional Owner involvement

Melbourne Water, Yarra Valley Water and other submitters advocated for additional involvement of Traditional Owners in the Project, particularly in relation to the Burwood Station.

The UDS includes various references to Aboriginal cultural heritage, including:

- UD5 Urban Design Principle 5 Enhancing
- 5.1 Station public areas and station environs
- 5.3 Public spaces
- 5.4 Green infrastructure
- 5.5 Creative works.

It includes place-based requirements in relation to the Burwood Station and the naturalisation of the Gardiners Creek corridor (Outcomes BUW3 and BUW5).

The IAC supports the overarching references to Aboriginal Cultural Heritage and the place-based requirements in the UDS, and the preparation of an Aboriginal Cultural Themes document.

The IAC is satisfied that there will be suitable opportunities for the Proponent and other agencies to further consult with the RAPs during the Project design and to consider the detailed matters raised in submissions.

(iii) Findings

The IAC finds:

- Once approved, the CHMPs will be the principal mechanism to address Aboriginal cultural heritage impacts.
- The Project design and CHMPs will avoid and minimise impacts on Aboriginal cultural heritage.
- The two previously unrecorded Aboriginal cultural heritage sites can be appropriately managed through the CHMP process.
- The EMF and UDS will enable further consultation with the RAPs during detailed design processes, including the naturalisation of Gardiners Creek.

5.3 Historical heritage

5.3.1 What did the EES say?

The key impacts identified in the EES include:

- the full or partial demolition of five heritage places (one in Burwood and four in Box Hill)
- the demolition of two potential heritage places (Heatherton and Box Hill)
- the relocation of three heritage monuments/features (Box Hill)
- possible impacts on two potential heritage places (Mount Waverley)

- possible ground movement impacts on three heritage places within the 'zone of influence' (ZoI) (one in Kingston, two at Monash University) [38].

The key issues to be resolved are:

Project wide:

- adequacy of the cultural heritage assessment and EMF/EPRs
- undertaking internal archival recording
- approval of external conservation works.

5.3.2 Project wide

(i) Evidence and submissions

The Proponent outlined the Historical Heritage Impact Assessment and noted the key issues in dispute related to the treatment of specific sites, rather than the overall impact assessment and methodology. Ms Gray contributed to the Historical Heritage Existing Conditions and Historical Heritage Impact Assessment reports and outlined the investigations that informed these documents. She outlined the further investigations and actions undertaken since preparation of the EES, including the referral of 16 sites to Heritage Victoria for possible inclusion in the Victorian Heritage Inventory (VHI). Nine of these sites (eight in Box Hill) have now been included in the VHI and the remaining seven were determined not to reach the threshold for inclusion.

Ms Gray was satisfied with the adequacy of the existing conditions and impact assessment reports, and the heritage elements of the EMF. She reviewed submissions that sought changes to the EPRs to address general heritage matters and was satisfied they were adequately addressed in the exhibited EPRs. She supported the inclusion of a reference to the 'relocation' of heritage fabric in EPR HH2 sought by Whitehorse, now included in the Proponent's final version of the EMF (D795).

Kingston, Monash and Whitehorse sought changes to the EPRs to address general heritage issues, in part based on the evidence of Mr Gard'ner:

- EPR HH3 (requiring photographic recording of interiors)
- EPR HH9 (clarifying the approval of conservation works).

Submissions and evidence about specific sites are discussed later in this chapter.

(ii) Discussion

The Project's impacts on historical heritage will be limited by the extensive use of tunnelling. Potential impacts arising from associated ground movement will be addressed through the preparation of ground movement plans and the specific requirement to have regard to heritage places. This would include the three heritage sites within the tunnel's ZoI.

Above ground works will have more pronounced impacts associated with removal and/or relocation of specific assets and buildings. It was generally agreed the loss of existing heritage buildings, such as the Colonial Gas Association building and buildings within HO244 at Box Hill would be an adverse heritage impact.

[38] Zone of Influence of ground movements, estimated by the 5mm vertical settlement or greater contour, due to excavation and 10mm vertical settlement or greater contour, due to groundwater drawdown induced consolidation.

The IAC is satisfied the historical heritage impact assessment and overarching EPRs are appropriate and will adequately avoid or minimise adverse effects, with specific issues and sites discussed below.

EPR HH3 (Undertake archival photographic recording) applies where heritage places are demolished or modified and, as Ms Gray noted, does not preclude the recording of interiors. The Councils sought a requirement that interiors be recorded where '*original and early features*' still exist. The relevant Heritage Overlays (HO) only require a permit for external alterations and there was no evidence these buildings specifically warrant internal photographic recording. The IAC agrees with Ms Gray the treatment of individual buildings and the extent of the photographic recording can be reviewed on a case-by-case basis as the Project proceeds, and in consultation with the relevant Council. This can occur under the exhibited EPR HH3.

EPR HH9 (Develop and implement external conservation works) requires the '*scope of external conservation works*' be determined by the contractor in consultation with the relevant Council. Whitehorse sought a requirement that the conservation works be to the '*satisfaction*' of the relevant responsible authority. The Proponent noted there is no statutory role for Councils or Heritage Victoria as decision-maker under the EPRs and no criteria for assessing '*satisfaction*'. It preferred the contractor simply consult with the relevant Council before making a decision.

The IAC considers the relevant Council should determine the scope of the conservation works as would normally be the case under the HO and in the absence of the SCO14. This is an appropriate Council role and not a matter that should be left to the discretion of the contractor, regardless of whether it consults with the relevant Council. The IAC has included a modified EPR HH9 in Appendix G to reflect this and notes that implementing this arrangement would likely require a protocol to be agreed with the Councils.

(iii) Findings

The IAC finds:

- The impacts on historical heritage will be limited by the extent of tunnelling and the need to prepare ground movement plans.
- The overarching EPRs provide an appropriate basis for avoiding or minimising adverse impacts on historical heritage.
- Conservations works to buildings should be approved by the relevant Council.

5.3.3 Stabling Facility

(i) What did the EES say?

The EES identified a potential heritage place (house) at 171-173 Old Dandenong Road, Heatherton that would be demolished. The Historical Heritage Impact Assessment concluded the loss of the site would not be a significant heritage impact because of the existence of other comparable houses related to the market gardening theme, it is not an early example of this type of building and it does not retain a significant setting.

The key issues to be resolved are:

- demolition of the dwelling at 171-173 Old Dandenong Road
- potential heritage impacts on the Henry Street Trail, 172-176 Old Dandenong Road and the Uniting Church (HO54) at the corner of Kingston Road and Old Dandenong Road.

(ii) Evidence and submissions

Various submitters including the Kingston Residents Association submitted the dwelling at 171-173 Old Dandenong Road is of local heritage significance and should be retained. Submissions sought heritage protection of the remnant elements of a former poultry farm at 172-176 Old Dandenong Road and the Henry Street Trail. Concerns were raised about the impacts on the Uniting Church at the corner of Kingston Road and Old Dandenong Road.

Ms Gray's evidence supported the findings of the Historical Heritage Impact Assessment and advised:

- the heritage significance of 171-173 Old Dandenong Road Heatherton was not adequate to warrant its protection or retention
- the Henry Street Trail and 172 – 176 Old Dandenong Road have community and/or historical associations of interest but do not warrant identification as heritage places. Consequently, no further heritage assessment of these sites is required
- any impacts on the Uniting Church will be amenity rather than heritage related.

(iii) Discussion

The IAC notes the submissions in support of retaining the dwelling at 171-173 Old Dandenong Road, but agrees with the EES assessment and Ms Gray's evidence that it does not warrant retention for heritage purposes.

The IAC accepts Ms Gray's evidence in relation to the unlisted buildings at 172-176 Old Dandenong Road and the Henry Street Trail, and agrees these sites, while of community interest, do not warrant heritage recognition or heritage protection. Further, there was no evidence that Council had initiated, or considered a local heritage review of these sites, and it is not appropriate for the IAC to take this any further.

The listed Uniting Church is outside the Project Land and although it might be subject to amenity impacts, there will not be any heritage impacts.

(iv) Findings

The IAC finds:

- The development of the Stabling Facility will not have heritage impacts on the sites and buildings raised in submissions.

5.3.4 Burwood

(i) What did the EES say?

The EES identified that the Project would require the demolition of the remnant elements of the Burwood Skyline Drive-In (Whitehorse HO281). This was the first Drive-In in Australia and is of local historic and social significance. Although most of the original fabric has been removed or demolished, some elements remain, including the various ancillary structures and landscape elements.

The key issue to be resolved is:

- treatment of the remnant elements of the former Burwood Skyline Drive-In

(ii) Evidence and submissions

The Proponent submitted the remnant elements of the Drive-In had limited heritage value and their retention was not justified. Instead, Burwood Station would be the subject of EPR HH8 that requires the development of a heritage interpretation strategy, specifically referencing the Burwood Skyline Drive-In. EPR HH3 would require archival recording of the site.

The Heritage Impact Assessment noted the significance of the site but concluded the remaining elements were ancillary to the Drive-In and did not readily identify the former use. A similar conclusion was reached in relation to the landscape elements of the site, including planted trees and driveway entrance.

Ms Gray supported the relevant EPRs, including the preparation of an interpretation strategy for the site. She supported a recommendation from Whitehorse about the possible retention of the four cast iron lamp posts along the site's entrance as part of the interpretation strategy.

Whitehorse highlighted the heritage significance of the site and submitted it should be the subject of an additional EPR recommended by Mr Gard'ner. This EPR would require:

- development and implementation of a plan to guide the reinstatement of the site's landscape elements, so far as reasonably practicable
- reinstatement of the landscape character of the original entry sequence (including the curved entry drive, avenue of trees and the row of cast iron lamp posts).

Mr Gard'ner noted the site's integrity has been substantially reduced and its use as a Drive-In was no longer legible without on-site interpretation. He recommended reinstatement of the landscape elements, (including the four cast iron lamp posts) and the interpretation of the heritage features to be removed in the proposed public open space along McComas Drive.

(iii) Discussion

The IAC notes the heritage significance of the site but agrees with the EES assessment that the remaining elements do little to demonstrate its former use. For this reason, the IAC supports the implementation of an interpretation strategy and the archival recording of the site, rather than the retention of the remaining structures. It agrees with Mr Gard'ner and Ms Gray the four remnant lamp posts could form part of the interpretation strategy and is satisfied this could occur under the exhibited EPRs.

The retention of the remnant driveway and associated landscaping could be a positive outcome and form part of the interpretation of the site, particularly given its location within the public realm identified in the Surface and Tunnel Plan. However, the IAC does not consider their retention to be a high priority, given they do not clearly demonstrate the former use of the site. Further it could constrain other positive public realm design outcomes in this area. How and to what extent these features might be retained is a matter that should be addressed during detailed design. This is provided for in EPRs HH2 and HH8 and need not be the subject of the specific EPR requirement proposed by Whitehorse.

(iv) Findings

The IAC finds:

- The former Burwood Skyline Drive-In site is of local heritage and social significance, and warrants a specific interpretation strategy.

- The remnant elements of the Drive-In do not make a significant contribution to understanding its former use and its retention needs to be balanced against other potentially competing design outcomes.
- The treatment of the remnant elements, (including the four cast iron lamp posts) can be further considered under the proposed EPRs and during the detailed design of the area.

5.3.5 Box Hill

(i) What did the EES say?

The EES identified that the Project would require:

- The full or partial demolition of:
  - Colonial Gas Association building, 942-946 Whitehorse Road Box Hill (individual listing, Whitehorse HO91 and precinct HO244)
  - shop, 948 Whitehorse Road, Box Hill (contributory building, Whitehorse HO244)
  - shop, 930-932 Whitehorse Road, Box Hill (contributory building, Whitehorse HO244)
  - commercial building, 920-928 Whitehorse Road/2-8 Market Street, Box Hill (contributory building, Whitehorse HO244)
- The demolition of the potential heritage place:
  - unlisted house at 5 Elland Avenue, Box Hill
- The relocation of heritage monuments/features:
  - South Africa and China Memorial, Whitehorse Road median (Whitehorse HO252)
  - Whitehorse Hotel Statue and Portico, Whitehorse Road median (unlisted)
  - Councillor Ellingworth Commemorative Drinking Fountain, Whitehorse Road median (unlisted).

The key issues to be resolved are:

- retention of the Colonial Gas Association building (942-946 Whitehorse Road), the adjacent shop (948 Whitehorse Road) and other elements of HO244
- potential impacts on the former Baby Health Centre (Whitehorse Road median).

(ii) Evidence and submissions

The Proponent acknowledged demolition of heritage listed buildings would be an adverse heritage impact but submitted the impacts were relatively confined given the limited extent of above ground works. The Proponent proposed various changes to the EPRs in response to submissions, including changes to the treatment of heritage assets within the Whitehorse Road median. These changes are supported by the IAC and included in the final version of the EMF at Appendix G. The unresolved issues are discussed below.

The exhibited EES anticipated the demolition of the former Colonial Gas Association building (and the adjacent shop) at 948 Whitehorse Road in order to provide construction access to the station site. During the Hearing and in D252, the Proponent advised it was undertaking further investigations into alternative access arrangements that could enable elements of these buildings to be retained [39].

The Proponent submitted a definitive position on this could not be determined prior to detailed design of this area progressing further. It proposed EPR HH9 include a requirement that portions

[39] Box Hill Station Construction Options Assessment

of the two buildings be retained if safe and feasible, and if so, they be the subject of conservation works. Ms Gray supported this approach.

Whitehorse submitted that at least the front portions of the two buildings should be retained and provided a memorandum from Arup that assessed access issues and reviewed the options discussed in D252 [40]. That memorandum concluded that although further investigations were needed, there was scope to retain the two buildings and this should be prioritised in the EMF. Whitehorse sought a further change to EPR HH9 that would provide for other elements of HO244 be retained if possible.

Whitehorse sought the inclusion of the unlisted former Baby Health Centre in EPR HH9 that would require external conservations works to be undertaken. Mr Gard'ner supported the retention of the building and its inclusion in the EPR. Other submitters expressed concerns about the loss of this building. The inclusion of the building in EPR HH9 was not supported by the Proponent because it was not anticipated the building would be affected by the Project. Ms Gray noted the building is unlisted and if demolished would be subject to EPR HH3 that would require archival recording. She did not support its inclusion in EPR HH9.

Whitehorse sought the following additional requirements in EPR HH7 (Minimise impact and undertake reinstatement of Box Hill Gardens):

- the construction footprint be minimised
- the reinstatement plan be to the satisfaction of Council and in accordance with a new Box Hill Gardens management plan (EPR HH7).

The Proponent did not support these changes and submitted that they were unnecessary.

(iii) Discussion

The IAC notes the evidence and submissions in support of retaining the Colonial Gas Association building, the adjacent shop and other contributory buildings in HO244, and agrees there would be merit in retaining as much of this fabric as possible. This is particularly so in relation to the Colonial Gas Association building that is individually listed, externally largely intact and has a significant presence in this section of Whitehorse Road. However, the retention of these buildings needs to be balanced against the possible access and traffic impacts, particularly given the length of the construction period, the possible traffic implications for Whitehorse Road and Station Street and the potential impacts on other land uses in the area.

Based on the material before it, the IAC is not able to adopt a definitive position on what might be able to be retained. It supports the Proponent's commitment to undertaking further investigations and its acknowledgment that retention of the Colonial Gas Association building and the adjacent shop would be a positive heritage outcome. This commitment could be better reflected in EPR HH9 and the IAC has included some additional text in its recommended EMF at Appendix G.

Council sought an extension of EPR HH9 to include other elements of HO244 to the west of the Colonial Gas Association building. The IAC does not believe this is necessary given they are contributory buildings of lesser significance and have been identified for demolition. These buildings will be subject to EPR HH3.

[40] D757

Submissions sought the retention of the former Baby Health Centre within the Project area, but not identified for demolition. The IAC accepts the Proponent's advice this unlisted building is intended to be retained. For this reason, the IAC agrees it does not warrant listing in EPR HH9. If the Project design changes and the building is demolished, it would be subject to EPR HH3.

The IAC does not agree with Whitehorse that the preparation of a plan to guide the reinstatement of the Gardens landscape character (EPR HH7) need be to the satisfaction of Council. Appropriate Council involvement will be provided through its membership of the Public Open Space Expert Panel (POSEP) and UDAP as recommended by the IAC.

(iv) Findings

The IAC finds:

- The loss of the Colonial Gas Association building and to a lesser extent the contributory buildings within HO244 would be an adverse heritage outcome.
- The retention of the Colonial Gas Association building and adjacent shop at 948 Whitehorse Road needs to be balanced against the traffic and access implications and requires further investigations by the Proponent.

5.4 Recommendation

The IAC recommends:

<u>Environmental Management Framework</u>

Include the following change:

- **Revised EPR HH9 that includes additional guidance in relation to the Colonial Gas Association Building and 948 Whitehorse Road, Box Hill.**

This change is included at Appendix G.

5.5 Overall conclusions on Aboriginal cultural and historical heritage

Subject to the recommendations of the IAC, there are no Aboriginal cultural or historical heritage impacts that preclude the Project being approved or the evaluation objective being achieved.

6 Amenity and environmental quality

6.1 Introduction

Amenity and environmental quality is discussed in:

- EES Technical Summaries:
  - Air Quality
  - Airborne Noise
  - Electromagnetic interference
  - Vibration and Ground-borne Noise
- Technical Appendices:
  - B.1 – Air Quality Existing Conditions
  - B.2 – Air Quality Impact Assessment
  - C.1 – Airborne Noise Existing Conditions
  - C.2 – Airborne Noise Impact Assessment
  - H.1 - Electromagnetic Interference Existing Conditions
  - H.2– Electromagnetic Interference Impact assessment
  - M.1 – Human Health Existing Conditions (for related aspects)
  - M.2 – Human Health Impact Assessment (for related aspects)
  - S.1– Vibration and Ground-borne Noise Existing Conditions
  - S.2– Vibration and Ground-borne Noise Impact Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed 22 mitigation measures in the EPRs to manage the impacts of the Project on amenity and environmental quality. These included:

- EPRs: AQ1, AQ2
- EPRs: EMI1, EMI2, EMI3
- EPRs: NV1 – NV17 (includes airborne, ground-borne and vibration).

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN04 - Confidential Receiver (D180)
- TN11 - Noise and Vibration (D269)
- TN12 - Air Quality (D271)
- TN31 – EMI (D423).

Additionally, the IAC had regard to relevant submissions and evidence.

Table 2 lists the amenity and environmental quality evidence.

Table 2 Amenity and environmental quality evidence

Party	Expert	Firm	Area of expertise
Proponent	Iain Cowan	Tonkin + Taylor	Air quality
Monash	Lesley-Ann Stone	Arup	Air quality
Proponent	Jackie Wright	Environmental Risk Sciences Pty Ltd	Human Health
MTTY	Vicki Kotsirilos	Medical Practitioner	Human Health
Proponent	Keith Middleton	Middleton	Electromagnetic interference
Monash University	John Aitken [41]	Aitken & Partners	Electromagnetic interference
Proponent	Darren Tardio	Enfield Acoustics	Airborne noise
Proponent	Tom Evans	Resonate Acoustics	Airborne noise
Whitehorse	Frank Butera	Arup	Airborne noise
Monash University	Frank Butera	Arup	Airborne noise
Deakin University	Frank Butera	Arup	Airborne noise
Proponent	John Heilig	Heilig and Partners	Construction vibration and ground borne noise
Proponent	Graham Brown	Mott MacDonald	Operation vibration and ground borne noise
Whitehorse	Frank Butera	Arup	Vibration and ground borne noise
Kingston	Frank Butera	Arup	Vibration and ground borne noise
Monash University	Frank Butera	Arup	Vibration and ground borne noise
Deakin University	Frank Butera	Arup	Vibration and ground borne noise

6.2 Air quality

6.2.1 Project wide

(i) What did the EES say?

Air quality impacts would be more significant during construction than during operation.

The protocol of the Institute of Air Quality Management (IAQM) was used to provide a qualitative assessment to identify the highest risks, followed by a quantitative assessment of such risks.

Particulate matter solely associated with the Project was not expected to exceed appropriate thresholds, but cumulative levels, including background levels, may at times exceed thresholds.

The following management plans and protocols would be required for each construction area:

[41] Evidence filed but not called at the Hearing

- Environmental Air Pollution and Dust Management Plan (EAPDMP)
- Risk Management and Monitoring Program (RMMP)
- Trigger Action Response Protocol (TARP).

Real time monitoring at all construction sites would be used by construction managers to allow timely response of mitigation measures.

The key issues to be resolved are:

Project wide:

- dust suppression during construction and operation
- public access to real time air quality monitoring

(ii) Evidence and submissions

Dr Cowan's evidence stated the assessment focused largely on impacts from construction, as operation is largely underground.

He explained dispersion modelling for dust associated with construction activities undertaken as part of this EES is not a usual requirement for major projects. The modelling included industry standard mitigation measures and incorporated worst case parameters, meaning the results were considered conservative.

Potential impacts during operation would be associated with the tunnel ventilation system and further analysis would be required during detailed design.

The conclave reported agreement between the experts regarding the appropriateness and results of the modelling and the EPRs [42]. There were differing opinions about whether pre-construction baseline monitoring was required, and the length of time such monitoring was needed. There was dissent regarding monitoring requirements during construction, with Dr Cowan indicating site boundary monitoring would be sufficient and Ms Stone recommending additional receivers at Monash University.

Under cross examination from Monash University, Whitehorse and Monash, Dr Cowan acknowledged monitoring results should be available to the community and there would be a benefit to resident satisfaction in providing such data. He cautioned any live data could be misinterpreted and would require explanation and suitable disclaimers.

Monash University withdrew from the process before the evidence of Ms Stone could be provided.

(iii) Discussion

The Proponent pointed to the degree of conclave consensus to affirm the adequacy of the assessment and robustness of the EPRs to satisfactorily manage and mitigate air quality impacts.

The Proponent did not support the publishing of real time monitoring data, instead preferring the publication of verified monthly data on a quarterly basis. It claimed real time data would be difficult to decipher and potentially misleading.

Monash University provided the EPA Airwatch site as an example of where real time data with suitable disclaimers and explanation is currently available.

[42] D270

Monash University, Monash and Whitehorse asserted making real time data accessible to the community, with suitable explanation of data limitations where appropriate, would assist in providing transparency and reassurance. The two Councils recommended verified data be published on a monthly basis, rather than quarterly.

The IAC recognises that without appropriate controls, significant impacts from construction activities may occur due to the size and scale of the construction sites and the proximity and number of affected residents. The IAC accepts dust from construction activities can be adequately managed and mitigated if appropriate plans and ongoing monitoring requirements are properly implemented by the contractors.

The IAC notes Dr Cowan did not oppose the provision of real time data, provided a suitable explanation accompanied such data. He indicated the publication of monthly verified data was achievable. The IAC considers the ready availability of such data to affected residents would be beneficial.

(iv) Findings

The IAC finds:

- Implementation of the required management plans and associated mitigation techniques can adequately manage air quality impacts.
- Real time monitoring data with explanations of limitations should be made publicly available.
- Verified data should be published on a monthly basis.
- The Project has the potential to adversely impact the amenity and environmental quality of communities in its vicinity.
- The EMF must be clear, unambiguous and in some cases prescriptive to ensure appropriate controls are in place to manage these impacts.
- There will be heavy reliance on the EMF being properly implemented to avoid, minimise and mitigate environmental quality impacts.

6.2.2 Cheltenham

(i) What did the EES say?

Cheltenham includes a significant volume of buried waste from an adjacent former gasworks site where it is anticipated contaminated and odorous material will be encountered [43]. The contractor would be responsible for developing an EAPDMP, which would include preventative and mitigation controls to control odour generation.

The key issues to be resolved are:

- adequacy of the assessment of contaminants and odours from buried waste derived from the former Highett Gasworks
- efficacy of proposed mitigation for potential contaminated dust and odours from the former gasworks site waste.

[43] EES B.2 AQ IA pdf 13

(ii) Evidence and submissions

Dr Cowan's evidence stated potential odours from the buried gasworks waste would be mitigated by the following measures:

- additional investigations to delineate extent of odour generating materials
- management of stockpiles
- avoidance of double handline
- suppressant foam
- odour neutralising spray
- monitoring by staff to be included in the EAPDMP.

Dr Cowan noted the Environmental Reference Standard (ERS) requires no offensive odour leaves the site and that a tent was not required [44]. In his view, the EPRs governing air quality were appropriate and the requirements to develop and implement an EAPDMP, a RMMP and s TARP would adequately identify appropriate mitigation measures to control odours at this site.

In response to questions from the IAC, Dr Cowan provided advice in TN34 [45]. He was requested to comment on the magnitude of polycyclic aromatic hydrocarbons (PAH) concentration found for the buried gasworks waste and whether there was a risk of odour release. Dr Cowan stated it was not possible to predict the emission rate of PAH without direct odour testing and in addition to the mitigation methods already described, he recommended the following:

- additional soil and groundwater investigations to identify the type and delineate the extent of odour generating materials
- use atmospheric dispersion modelling to understand the area that can be exposed without the use of foam for extraction and that results in ambient concentrations that do not result in odour impact or human health risk [46].

Dr Cowan was further requested to provide examples of similar sites where the proposed odour mitigation methods had been applied successfully and his response nominated Kendall Bay remediation in Sydney and Viva Energy Newcastle Terminal in NSW. He explained the mitigation methods required construction techniques which limited the size of the excavation openings.

Dr Wright provided evidence regarding human health and was questioned about suitable mitigations for dealing with odours at Cheltenham. Kingston asked whether a tent for odour control was best for mitigation. Dr Wright stated there were many ways to deal with odours and it was ultimately up to the contractor to decide on the most appropriate methods and acknowledged that a tent would be expensive and inconvenient.

The Proponent submitted implementation of the measures detailed by Dr Cowan would be sufficient to control odour emissions which may arise at Cheltenham, as this site was near to the former Highett Gasworks, rather than being an actual gasworks site. Dr Wright gave evidence those measures were suitable.

(iii) Discussion

The IAC notes no competing evidence was offered by Kingston and the EPA had no issues with respect to the air quality EPRs.

[44] ERS No. S245, 26 May 2021, EP Act 2017
[45] D433
[46] D82, paras 54a, 56a

Although the IAC accepts the proposed mitigation methods may be effective, the IAC is concerned about some techniques creating constraints such as limiting the size of excavation openings and other measures such as monitoring by staff being reactive, rather than proactive methods.

The GED requires the risk of harm to human health to be eliminated where practicable. The IAC believes the proposed mitigation measures for odour control related to former gasworks waste excavation and treatment requires serious consideration of a cover tent over the site as this is the only measure that will eliminate harm and fully manage risk.

Part of assessing whether a tent is warranted involves determining if this measure is reasonably practicable.

The EPA provided commentary on who would be responsible for determining what is reasonably practicable in relation to noise mitigation and presumably the same applies to other environmental amenity factors[47]. According to the EPA, all parties responsible for the assessment and implementation of mitigation measures for this Project are also responsible for determining what is 'reasonably practicable' in the context of the GED.

The IAC notes a tent at this site could be beneficial to minimise the risk of contamination, this is further explored in Chapter 9.

(iv) Findings

The IAC finds:

- Odours can be controlled provided further investigations are performed and a comprehensive suite of measures is implemented, including potentially a cover tent with its associated collected air treatment.

6.2.3 Stabling Facility

(i) What did the EES say?

The EES acknowledged the significant scale of the Stabling Facility and the extent of works required including:

- significant earthworks associated with its construction
- construction of its portals and dive facilities
- operation of the Tunnel Boring Machines (TBM) and handling of associated spoil.

As such, additional mitigation measures including minimising work areas, stabilising exposed land areas when not in use, staggering wind breaks, ensuring adequate water and sealing of haul roads were recommended.

The key issues to be resolved are:

- prolonged site works and associated amenity impacts
- lack of baseline health studies for existing community exposure to dust
- potential for unknown contaminants in dust
- lack of confidence in the EPRs being able to manage air quality based on past experience by the community.

[47] D569 EPA response relating to noise mitigation

(ii) Evidence and submissions

Dr Cowan's evidence, findings and recommendations relating to Project wide air impact matters associated with construction applied equally to the Stabling Facility.

For operational impacts, Dr Cowan recommended the tunnel ventilation systems be designed to minimise air quality impacts to surrounding areas. The Stabling Facility is anticipated to have tunnel ventilation system fans at both the eastern and western portals.

Dr Wright relied on the technical assessments to reach conclusions about the effects of construction dust from the Stabling Facility. In response to an enquiry from the IAC about the potential for contaminated dust, Dr Wright stated potential for particulate matter migration was assessed but a quantitative dust-contamination risk assessment was not performed as contamination was not anticipated [48].

Dr Kotsirilos raised concerns regarding air pollution associated with vehicle emissions, especially diesel trucks, dust from construction works, tunnel and spoil removal and stockpiling. However, she acknowledged she had not read the Impact Assessment or Dr Cowans evidence and had not reviewed the EPRs to determine whether effects would be appropriately mitigated.

MTTY submitted the community in the vicinity of the Stabling Facility has lived experiences with dust impacts, stating such impacts have rarely been effectively mitigated. Its submission included timelapse videos showing dust movement from MTP spoil on a windy day [49]. MTTY questioned whether the MTP had applicable EPRs to suppress this dust and whether the EPRs worked.

MTTY raised concerns regarding potential odours from tunnel spoil and train brake dust from the tunnel ventilation system during operation. It expressed continued frustration over the lack of response to complaints regarding dust impacts from the nearby Lantrak site and questioned whether the EPA will could satisfactorily respond to complaints and enforce environmental requirements [50].

The Proponent submitted air dust modelling performed in the EES assessment was based on a 'worst case' scenario and included potential emissions from surcharging, stockpiling and spoil movement. Modelling demonstrated applicable air quality assessment criterion would be achieved. The Proponent confirmed in closing that contaminated spoil generated at other sites was not planned to be stored or treated at the Stabling Facility site [51]. However, spoil generated from tunnelling activities originating at, or from the Stabling Facility would be treated in accordance with the Spoil Management Strategy (SMS), unless the spoil was used for surcharging.

(iii) Discussion

The Proponent maintained the impact from dust emissions could be appropriately managed through the proposed EPRs.

The IAC remains concerned about the Human Health Risk Assessment as it relates to air quality:

- there is a lack of baseline health studies considering the local population and the impact of past landfill and mining activities

[48] D368
[49] D664
[50] D701
[51] D775 para 94

- Dr Wright's conclusion regarding contaminated dust not being anticipated is considered to be premature, due to the lack of comprehensive site investigations and lack of clarity in the SMS.

The IAC makes further comment and findings on this issue in Chapter 9.

Although the Proponent stated spoil from other sites will not be stored at the Stabling Facility, there is potential for spoil generated at the Stabling Facility to remain on site for use as surcharging material (further addressed in Chapter 9.5).

The IAC shares some of the concerns raised by MTTY relating to the perceived lack of regulatory oversight for existing dust impacts and the lack of response to complaints. Submitter S253 showed an EPA response to a complaint about dust from the Lantrak site [52]. The EPA response indicated guidance material had been provided to the Contractor and the resident should continue to monitor the situation and report any further incidents to the EPA. Although this material does not relate to the Project, the IAC considers this response to be underwhelming. There is no mention of whether a non-compliance occurred, what investigations were undertaken, what actions if any were implemented and how the situation would be managed in the future. This highlights the need for EPRs to include details of appropriate complaint response measures.

The IAC accepts dust emissions could be managed through EPRs, but the EPRs need to be comprehensive, prescriptive and include timely and appropriate community complaint response measures.

(iv) Findings

- The EMF must include protocols for appropriate community complaint response.

6.2.4 Burwood

The Burwood site would be a TBM processing facility, supporting a large volume of truck for spoil removal. Dust mitigation measures will include acoustic sheds over TBM portals, keeping soil moist, sealing of truck haul routes and spoil stockpile areas.

The evidence of Dr Cowan covers issues arising at Burwood. Whitehorse did not raise any specific issues in relation to air quality impacts at Burwood. Air quality issues experienced at Burwood would be similar to those experienced project wide.

The IAC is satisfied the general mitigation measures as proposed are acceptable.

6.2.5 Box Hill

(i) What did the EES say?

The Box Hill site requires extensive excavation and has many high-density residential dwellings in close proximity, raising its air quality risk level. Air dispersion modelling for dust, reported in the EES, indicated a greater number of mitigation measures would be required at Box Hill than recommended at other sites, including a shed to cover the stockpile area as well as partial decking over the station box excavation to reduce risks of exceeding dust in air quality objectives. The EES noted a deck over the station box area, while recommended, could only be implemented once excavation reached 10 metres, approximately half of the full depth adjacent to 1 Elland Avenue.

[52] D624

The key issue to be resolved is:

- whether dust mitigation measures at Box Hill are acceptable.

(ii) Evidence, submissions and discussion

The evidence of Dr Cowan outlined earlier covers issues arising at Box Hill. Whitehorse did not raise any specific issues in relation to air quality impacts.

Whitehorse Ratepayer and Residents Association (S97) requested that real time monitoring for dust be performed and that:

> Repeated failure of contractors to meet EPRs should incur hefty predetermined fines written into the contracts for the contractors as a disincentive to being slack [53].

Charter Hall (S361), owners of a building used by the Australia Tax Office, were concerned about air quality impacts to the workers at the building, as well as extra costs incurred in maintaining the building with more air filter changes and additional window cleaning required. Charter Hall recommended comprehensive mitigation requirements should be included in the EMF.

The IAC is concerned that one of the mitigation measures determined to be required at Box Hill to limit dust exposure can only be implemented when the excavation is approximately half complete. This adds to other adverse impacts likely to be felt by the residents and occupiers of the closest apartment building at 1 Elland Avenue (discussed later in this report).

(iii) Findings

While the IAC is satisfied the dust mitigation measures proposed at Box Hill are acceptable, the higher level of risk adds to the recommendation later in this report that the SRLA consider the voluntary acquisition of 1 Elland Avenue.

6.3 Electromagnetic Interference

6.3.1 Project wide

(i) What did the EES say?

EMI would be generated by the TBM during construction and by moving trains during operation. The train network has been designed to minimise potential EMI during operation through the choice of the power source, route selection, train specifications and operational measures. EMI levels during both construction and operation would be well below recommended human health thresholds. Only one confidential receiver was likely to be affected by EMI, but ongoing assessments of other potential sensitive infrastructure would be managed through the EPR requirements.

The key issue to be resolved is:

- EMI impacts to existing and future sensitive infrastructure at Monash University.

(ii) Evidence and submissions

Dr Middleton's evidence explained predicted EMI levels associated with the Project would not adversely impact human health, general office equipment and residential areas. Areas potentially affected included medical buildings with imaging equipment, research facilities with electron and

[53] D594 page 17

atomic force microscopes and theatres/performing arts centres with specialist audio recording equipment.

Monash University was previously identified as an area of high sensitivity, but the evidence provided by Dr Middleton excluded Monash University concerns due to the agreement between the Proponent and Monash University.

Outside of Monash University, only one confidential receiver was identified as potentially impacted. Dr Middleton stated Deakin University, Commonwealth Scientific and Industrial Research Organisation and other medical research areas near the alignment would be unlikely to be impacted. This was due to the mitigation treatments which had already been included in the design of the Project's rail lines. Further, at-source mitigation methods were available but required further assessment of feasibility. At receiver mitigation for sensitive equipment could be applied if necessary.

Dr Middleton recommended minor amendments to the EMI EPRs which were adopted by the Proponent.

(iii) Discussion

Only the confidential receiver was identified as being at risk of potential impact. TN04 (D180) provided additional information regarding this receiver. The details of the receiver and TN04 remain confidential and the owners/operators of this receiver made no submissions to the IAC. Based on the information provided by the Proponent, the IAC considers potential EMI impacts associated with this receiver can and will be appropriately mitigated and/or managed.

The IAC notes Whitehorse, Monash and Kingston recommended no changes to the EMI EPRs. MTTY requested two minor changes. The first change recommended an independent expert to resolve any disputes regarding the appropriateness of environmental specifications was accepted by the Proponent. The second recommending the publication of monitoring results at sensitive receivers was not accepted due to confidentiality requirements. The Proponent noted there were no sensitive receivers identified in the vicinity of the Stabling Facility.

The IAC accepts the proposed Day 4 EMI EPR, which includes Dr Middleton's recommendations, are appropriate for managing EMI impacts [54].

(iv) Findings

The IAC finds:

- EMI impacts can be effectively mitigated and managed in accordance with the requirements of the recommended EMI EPRs and the 'Process statement' specific to Monash University.

6.4 Airborne Noise

6.4.1 Project wide

(i) What did the EES say?

Construction noise will at times exceed the thresholds developed for this Project and mitigation measures would be needed. On-site mitigation measures would be employed and further off-site

[54] D795

mitigation measures would be considered as detailed in the Business Support Guidelines (BSG) and Residential Support Guidelines (RSG).

At the Stabling Facility, noise from fixed infrastructure would be mitigated to enable compliance with EPA Noise Protocol limits and noise from train movements above ground would meet the Victorian Passenger Rail Infrastructure Noise Policy (PRINP) investigation thresholds.

The key issues to be resolved are:

- implementation of the GED for construction noise
- whether guidance levels to inform on-site mitigation measures are needed and if so, what levels would be appropriate
- use of the MTP EMF as basis for the EMF and RSG
- public access to real time noise monitoring
- appropriateness of off-site mitigation measures in the RSG.

(ii) Evidence and submissions

GED and construction noise guidance/benchmark levels

Mr Evans explained the GED required the application of all reasonably practicable noise mitigation and he was confident construction noise effects would be avoided or minimised with the implementation of measures identified in the EES and EMF.

Mr Evans considered the RSG construction guideline noise levels based on ambient noise level L_{eq} were consistent with the MTP and acknowledged the conclave had agreed to update the RSG to use background levels (L_{90}). The purpose of the RSG noise level benchmarks was to provide guidelines for specific off-site management measures including works notifications, provision of ear plugs, respite and alternative accommodation.

Mr Tardio peer reviewed the Noise Impact Assessment. He considered the use of ambient noise levels to determine construction noise thresholds was unconventional and recommended the use of background noise levels.

In response to questions from the IAC, both Mr Evans and Mr Tardio had no objection to publishing construction noise benchmarks in the EPRs. Mr Tardio thought use of the NSW guideline levels might provide a tangible target lacking from the GED requirement. When asked whether any community consultation or resident surveys were performed to assess the effectiveness of the MTP Residential Management noise measures, Mr Evans stated he was unaware of any such research.

Under cross examination from Monash, Whitehorse and Monash University, Mr Evans accepted there was merit in providing construction benchmark levels in the EMF, but considered implementation of the GED would enable on-site mitigation measures. He was concerned that nominating guidance levels might dilute the GED requirement. Mr Tardio had no objections to providing guidance levels in the EMF but was comfortable with the current status.

Mr Evans agreed the EMF and RSG served different purposes, with the EMF managing on-site mitigation measures and the RSG providing guidance for when off-site mitigation measures would apply.

Mr Evans stated the RSG were based on the MTP and admitted learnings from MTP were confined to a workshop with limited stakeholders. There was no engagement with MTP contractors, no surveys or consultation with affected residents and no qualitative or quantitative assessment of

residential noise impacts. Mr Evans considered the results of the auditing process confirmed MTP Residential Impact Mitigation Guide (RIMG) worked and believed the SRL RSG to be an improvement over the MTP RIMG.

Kingston asked Mr Evans who the arbiter of what would be reasonable and practicable would be. He considered the IEA would decide. Mr Tardio agreed and added the EPA would be responsible for ensuring compliance with the GED.

The EPA questioned Mr Evans on the amenity expectations of residents of suburban areas compared to those in inner city areas affected by the MTP and suggested it was not a suitable comparator. Mr Evans agreed outer urban areas may have higher expectations but still considered MTP to be a suitable comparator.

Mr Butera raised concerns with construction noise management, especially as construction time frames were long. He indicated he preferred the use of background noise levels rather than ambient to develop appropriate thresholds. He raised the prospect of affected residents being fatigued by noise over time and suggested more stringent benchmarks may be required. Mr Butera considered the GED had not been adequately addressed in the EES but stated this could be resolved through inclusion of GED requirements in the EMF. He believed the EMF should be a standalone document uncomplicated by reference to other documents as this placed the burden of interpretation on the contractor. Mr Butera recommended real-time noise monitoring results be made available to the community.

Under cross examination from the Proponent, Mr Butera generally agreed EPRs NV1 and NV2 provided a regime for managing construction noise on-site with the RSG proposing further off-site measures after implementation of NV2. He acknowledged a satisfactory outcome would be achieved if the EPRs included requirements for assessment in accordance with the GED.

The EPA submitted the GED provided a new proactive approach for avoidance and minimisation of noise and made the following commentary about the use of benchmark/reference /target levels:

- Specification of 'acceptable' construction noise levels is not considered to be an approach which is consistent with the GED. Instead, the risk-based approach described above and in several EPA guidance documents must be applied to minimise the risk of harm from noise to human health and the environment so far as reasonably practicable.[55]
- … EPA's position is not to specify such 'acceptable' levels… [56].

In giving his planning evidence, Mr Barlow suggested noise EPRs should include responsiveness measures to guide timely response to noise complaints.

Matters of disagreement at the conclave included the definition and thresholds for construction mitigation triggers and whether sleep disturbance needed to be considered. Mr Evans stated the exhibited EPRs included an assessment of sleep disturbance without having to specify a specific noise limit. Mr Butera maintained sleep assessment should be assessed using a nominated threshold limit.

MTP as comparator and basis for RSG

Whitehorse and Monash submitted the Noise Impact Assessment and EMF were not informed by experience from the MTP as no assessment or evaluation of the effectiveness of mitigation

[55] D434 para 95
[56] D434 para 96

measures at the MTP was performed [57]. Both contended there was very little detail about the experience of contractors, nature of complaints and resident experience around construction sites, and that failing to use such experience and data is unfortunate.

Whitehorse submitted construction noise benchmark levels based on background noise (rather than ambient noise) must be included in the EMF [58]. It suggested the approach of the EES to use benchmark levels based on ambient noise levels and thresholds for off-site mitigation from the MTP was misleading and resulted in lower numbers of affected residences being identified.

Realtime noise monitoring during construction

Whitehorse, Monash, Kingston, MTTY and other submitters requested real time noise monitoring data be made available to the public. Whitehorse/Monash considered the provision of such data would aid transparency and promote accountability.

The Proponent acknowledged real time monitoring would be an important tool used by contractors to assist in managing noise and for auditing and reporting requirements, but did not support publication of real time data as it considered its provision could be misleading [59].

Appropriateness of off-site mitigation measures

The RSG lists a number of off-site mitigation measures which may be used, including works notifications, earplugs, noise cancelling headphones, respite offers and alternative accommodation.

MTTY asked Mr Evans why the onus for controlling noise should be placed on the resident to wear earplugs. He responded the onus would be on the contractors to meet the EPRs and comply with the GED. Kingston asked Mr Tardio what type of ear plugs were contemplated, to which he replied, '*disposable ones*'.

MTTY was scathing of the suggestion that residents should need to wear earplugs in their own homes as a mitigation strategy, describing it as '*disgraceful and insensitive*' [60]. Submitter S253 called this proposed mitigation strategy '*insulting and condescending*'.

MTTY raised concerns regarding noise management techniques focussing on noisy works being performed during normal working hours. It noted this would not be appropriate post COVID-19 as many people are now working from home, so residents may be doubly affected by daytime noise impacting employment productivity and after-hours noise ruining their quiet enjoyment of home.

MTTY submitted alternative accommodation may not suit residents who have pets and proposed respite options should take this into account. Some submitters requested voluntary acquisition be considered.

(iii) Discussion

The GED establishes mandatory obligations for noise producers to proactively assess and manage the risk of harm from noise producing activities. The Day 4 RSG in Figure 1 outlines the steps needed to be undertaken by contractors to manage noise [61]. Step 1 is to eliminate the risk of harm and Step 2 is to take reasonably practicable measures to minimise risk of harm.

[57] D470
[58] D471
[59] D775 para 314
[60] D664
[61] D793

The IAC has difficulty in understanding how the GED can be effectively implemented in practice without including a benchmark noise level for initial guidance. A contractor can be directed to avoid or minimise harm from noise but without an indication of a level of noise which may cause harm, a contractor may apply an interpretation resulting in an acceptable noise level.

The EPA submission provided an example of process steps to consider, the first two of which are:

- Preliminary modelling can be considered based on the standard measures to manage noise to inform the preliminary screening assessment in step 2.
- Preliminary screening assessment of the risk of harm from noise, allowing the identification of areas for which it is justified that noise will not be an issue[62].

The IAC anticipates a guidance noise level would inform whether if modelled noise levels from construction activities (with all reasonably practicable measures assumed as implemented) are likely to cause harm. If no guidance level exists, it questions how a contractor would decide whether there is a risk of harm. A Construction Noise and Vibration Management Plan (CNVMP) would itemise all such reasonably practicable measures, enabling the IEA to determine whether the suite of measures is complete, or if additional measures can be easily incorporated.

The concerns of the IAC were shared and articulated by Whitehorse in its closing submission [63]. Whitehorse stated the publication of benchmark noise levels aid transparency and indicates the noise level above which harm may occur.

The EPA objected to the use of guideline levels due to the risk of the levels being used as an upper threshold of allowed noise pollution. However, this is the methodology employed by the EPA for noise sources covered by the ERS, which is part of the subordinate legislation under the EP Act. In this case, the ERS provides objective levels, but the EPA points out compliance with these levels may not result in achieving the GED.

Although the use of guidelines levels was not supported by the EPA, its submission acknowledged that quantifiable levels may be used as reference in certain circumstances.

> When assessing risk, quantified noise levels in decibels (dB) may be used in the process if their values are justified, supported by evidence relevant to the context of the project. Unless it is demonstrated that there is no risk of harm, such levels are not to be used as design targets or otherwise considered as levels one can pollute up to. Rather, they are to be used as reference levels above which the risk of harm increases[64].

The concerns of the EPA could be alleviated by providing a quantifiable guidance level with an appropriate definition as suggested by Whitehorse, Monash and Kingston in their EMF amendments [65].

The IAC agrees with the assertion of Whitehorse that the EES impact assessment was somewhat misleading in adopting guidance levels based on ambient noise levels on the basis this was consistent with the MTP. This may be due in part to the underlying expectation that achieving the GED would minimise noise impacts and guidance levels were only required to inform off-site mitigations rather than on-site measures. If this is the case, more clarity could have been provided in the EES.

[62] D343, paragraph 92
[63] D471 paras 213-222
[64] D434 para 97
[65] D749

The guidance levels proposed by Whitehorse, Monash and Kingston based on background noise levels are consistent with those used in the MTP and the North East Link Project EMF [66]. The IAC notes that if construction noise levels achieve the proposed daytime guidance levels, the risk of impact to daytime activities, including working from home, would be reduced.

The RSG provides trigger levels for implementation of off-site mitigation measures and has been based on the RIMG developed for the MTP. Mr Evans and Mr Tardio considered the Proponent's RSG provided a better framework for off-site mitigation than the MTP RIMG.

Unfortunately, there was no evidence to prove the measures used at the MTP had been effective in managing noise impacts. In the IAC RFI, a request was made for evidence showing the MTP RIMG had been successful in managing noise impacts [67]. In response, the Proponent provided TN11 (D269), which made reference to an auditor's report that had only raised one non-conformance. The IAC considers this cannot be construed as evidence of the efficacy of the MTP RIMG. There was no evidence of any community consultation, no resident or contractor feedback and no real lessons learned.

The IAC is disappointed at the lost opportunity to engage appropriately with affected members of the community, obtain feedback from contractors and develop an effective framework to inform other large infrastructure projects. Without such information, it is difficult to know whether the triggers proposed for off-site mitigation measures, especially related to respite or alternative accommodation, are appropriate.

The IAC understands the level of community concern associated with providing ear plugs as a mitigation measure. Recommending that residents wear ear plugs in their own home is not considered reasonable, particularly given this Project will have may years of construction. While there is an alternative measure of providing noise cancelling headphones, the IAC notes this may be unsuitable in many instances for the same reasons; but unlike ear plugs, these may have some other benefits (such as allowing residents to listen to music while wearing them).

The off-site mitigation measures in the RSG should be based on meaningful learnings from other large infrastructure projects as well as feedback from the local community so that a suite of effective measures can be developed. During implementation, the off-site mitigation measures should be continually monitored for effectiveness and community acceptance and amended where necessary.

The IAC supports the provision of real time monitoring data with appropriate disclaimers and explanation to residents. The IAC acknowledges such data has the potential to be misinterpreted but considers this could be limited through appropriate communication between contractors and the community. There is a level of distrust between the community and the Proponent, exacerbated by what was expressed by MTTY as perceived poor community consultation to date. The community has little confidence in the EES or EMF.

The IAC agrees with the proposition from Whitehorse of making data available to assist with transparency and accountability through the construction period.

The IAC considers the recommendation of Mr Barlow to include response protocols or response performance measures in the EMF to be important in managing construction noise impacts.

[66] D749
[67] D35

(iv) Findings

The IAC finds:

- EPR NV1 with changes proposed by Whitehorse, Monash and Kingston should be adopted.
- The application of the MTP RIMG has not adequately informed whether the RSG will be effective.
- The RSG should remove all reference to ear plugs as a mitigation measure, and that use of headphones will have limited utility.
- Real time monitoring results with associated disclaimers and explanations should be made available to the public.
- The effectiveness of the RSG should be evaluated through appropriate stakeholder engagement, community consultation and feedback.
- The EPRs should include complaint response performance measures.

6.4.2 Stabling Facility

(i) What did the EES say?

Airborne rail noise from the Stabling Facility was assessed as trains will run above ground between two tunnel portals on this site. The thresholds contained in the PRINP were used for the assessment. Predicted airborne rail noise based on the ultimate capacity (i.e when SRL North was operational) complied with the PRINP investigation thresholds.

Noise from proposed maintenance activities at the Stabling Facility, including train movements, was assessed in accordance with the EPA Noise Protocol. The Stabling Facility would include noise attenuation such as barriers and buildings with acoustic rated walls. Technical design features would remove the need for train horn use on-site. The EES demonstrated the implementation of all engineering and management measures would enable compliance with the Noise Protocol limits.

The key issues to be resolved are:

- appropriate noise criteria for train movements along the through rail line
- airborne noise from Stabling Facility activities, fixed infrastructure and the above ground train through line.

(ii) Evidence and submissions

Mr Evans identified the area to the south of Kingston Road as being most affected by airborne rail noise. Predictions of airborne rail noise to dwellings south of Kingston Road illustrated compliance with the applicable investigation thresholds of the PRINP.

If the thresholds of PRINP cannot be achieved, internal amenity criteria have been proposed. Mr Tardio recommended the proposed internal criteria be reduced by 5dB (providing more stringent criteria) for the following reasons:

- the lower criteria takes into consideration community expectations for new rail infrastructure encroaching on existing sensitive land uses
- a lower noise target is consistent with the spirit of PRINP
- the lower criteria will result in a better outcome than requested by submitters

- it is likely the proposed lower internal criteria will be achieved if external criteria are achieved [68].

For maximum internal noise levels, Mr Tardio nominated 45dB L_{Amax} in bedrooms. It was his opinion the preferred outcome was meeting the external PRINP thresholds and the EES had demonstrated this to be likely. The additional internal criteria acted as a 'failsafe' measure.

Mr Butera recommended internal noise criteria be adopted for above ground rail noise from the main line and referenced previous Victorian Civil and Administrative Tribunal (VCAT) decisions which proposed 55dB L_{Amax} in bedrooms and 60dB L_{Amax} in living rooms.

The Proponent submitted:

> Internal criteria suggested by Mr Butera would largely be superfluous given that they would in effect equate to the external criteria specified in the PRINP [69].

There was no dispute among the experts regarding the ability of operational noise at the Stabling Facility to meet the Noise Protocol requirements. TN43 detailed the parameters used to model noise and confirmed the noise assessment included noise from fixed infrastructure as well as noise from trains moving within the site and along access tracks [70].

Mr Butera recommended a cumulative assessment which would include above ground train noise and Stabling Facility operational noise to provide an understanding of all noise emissions from the site. At the conclave, all experts including Mr Butera, agreed these two noise sources are assessed using different policies [71]. Mr Butera considered a cumulative assessment was warranted as the noise sources exist on the same site, overseen by the same operator.

The Proponent submitted this would be rewriting the current regulatory framework as noise from trains during passenger services is exempt from the requirements of the relevant regulations.

It was Kingston's view the EMF should require noise attenuation measures at the Stabling Facility with provision for off-site mitigation at dwellings if noise proved to be excessive.

MTTY raised concerns about noise from audible alarms and safety horns as trains enter and exit tunnels.

(iii) Discussion

The PRINP provides external noise level investigation thresholds for new passenger rail infrastructure. The EES demonstrated these thresholds can and will be achieved. In the PRINP, considerations for applying policy principles include the following:

> Can the overall project design (e.g. the planned horizontal and vertical alignment) avoid or minimise likely exposure of sensitive receivers to significant levels of rail noise? [72].

The requirement to avoid and or minimise noise exposure seems consistent with the requirements of the GED. Although rail noise is exempt from the Environment Protection Regulations (EP Act 2017), such noise could still be disturbing, even if the PRINP investigation thresholds are achieved [73]. If Project design elements can assist in mitigating noise, then these should be considered.

[68] D95 para 4.8
[69] D775 para 296 (a) (iv)
[70] D519
[71] D302
[72] PRINP Attachment 5 Table A
[73] EPA website https://www.epa.vic.gov.au/for-community/environmental-information/noise/transport-noise/transport-noise-and-the-law#regulating-noise-from-passenger-trains-and-trams-in-service

Mr Butera advised in cross examination a likely noise reduction of 20 to 25dB from outside to inside means that if the external PRINP thresholds are achieved, then the proposed internal maximum levels based on VCAT decisions are likely to be achieved. If external PRINP levels cannot be achieved, then internal criteria would be applied. In this case the IAC considers it prudent to adopt the recommendations of Mr Tardio.

Operational noise from the site is expected to achieve the requirements of the Noise Protocol, but in accordance with the GED, further reasonable and practicable noise mitigation measures should be applied with the aim of minimising or avoiding harm from noise impacts.

The proposition of requiring a cumulative noise assessment is difficult to contemplate due to separate policies covering the noise sources at the site.

Although the legislative framework excludes the assessment of passenger train noise, the IAC believes a cumulative assessment is warranted in this case for the following reasons:

- the section of above ground main track is to be located in an area which has never been contemplated for use as a rail corridor
- if the Stabling Facility was not located at this site, then the main line track would either be underground or at a different location thereby avoiding airborne noise impacts
- the application of a single limit for cumulative noise will make compliance measurements easier (the IAC notes Mr Tardios' peer review raised the issue of compliance monitoring being able to separate the respective impacts of the stabling yard and the mainline)
- the PRINP document was issued well before the new *EP Act* and its regulations took effect from 1 July 2021.

If such an assessment were performed, guidance for appropriate criteria could be taken from the ERS. The existing noise environment around the site is generally consistent with ERS Category 3[74], described as typical suburban residential. The IAC considers all reasonably practicable noise mitigation measures be investigated and included with the aim of maintaining the higher of the current ambient levels or the ERS objectives when considering cumulative noise from the site.

Noise from maintenance activities at the site in the absence of mainline train noise would be required to achieve the limits in the Noise Protocol and the EES has demonstrated that these limits would be achieved.

For the cumulative assessment, noise from Stabling Facility activities and train movements on the main line should be assessed as an outdoor $L_{Aeq\ 16hr}$ for the daytime and $L_{Aeq\ 8hr}$ for the night as per the time periods nominated in the PRINP and the ERS. In this case, setting this criterion would result in significantly lower levels than those proposed as investigation thresholds by the PRINP. 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. At a minimum, such treatments should be investigated and assessed.

(iv) Findings

The IAC finds:

- In the event the PRINP external thresholds are not achieved, the more stringent internal criteria proposed by Mr Tardio should be adopted.

[74] TA c.1 pdf page 36

- Application of the GED requires noise from operation to be minimised so far as reasonably practicable, rather than just complying with the Noise Protocol.
- The overall noise from the site should be considered and where possible all reasonably practicable noise mitigation should be implemented with the aim of maintaining the higher of current ambient noise environment or the applicable ERS objectives.

6.4.3 Box Hill

(i) What did the EES say?

The construction area is surrounded by sensitive uses including an apartment building in Elland Avenue and the UAW aged care facility (UAW). Construction noise impacts would be greatest during surface and excavation works. In addition to standard noise attenuation measures, treatments such as hoardings and decking were evaluated. The EES acknowledged the nominated construction noise benchmarks would be exceeded during certain works and determined such impacts would be managed through the EMF.

The key issues to be resolved are:

- prolonged site construction works and associated amenity impacts to high density residential areas
- construction noise impacts to vulnerable residents at UAW.

(ii) Evidence and submissions

The evidence of Mr Evans and Mr Tardio relevant to Project wide construction noise impacts apply to the construction site at Box Hill. Both experts believed the EMF provided requirements for contractors to manage construction noise impacts and as the Project progresses, additional mitigation options might become necessary.

In a supplement to the Box Hill Position Paper, the Proponent advised further investigative work had identified that provision of additional acoustic decking between Elland Avenue and Irving Avenue was reasonably practicable [75]. Such decking would provide further noise attenuation of up to 10dB and could be provided progressively as bulk excavation reaches a depth of 10 metres below current ground level.

The recommendation and evaluation of this decking responded to the submission of Whitehorse that requested further consideration of additional at-source mitigation measures at this site [76]. Along with such measures, Whitehorse recommended a broadening of off-site mitigation measures, including acoustic treatment, alternative accommodation and voluntary acquisition.

Noise impacts to the UAW facility were not given any particular attention in the EES. Both Mr Tardio and Mr Evans were unaware if elderly people were more sensitive to noise and were unable to comment on impacts of noise on dementia sufferers. Both agreed alternative accommodation was an inappropriate mitigation measure for residents at this facility.

Mr Butera's evidence stated a site specific CNVMP should be developed for the UAW. This recommendation was echoed by Whitehorse which advocated a specific response to the special circumstances of the vulnerable population at UAW rather than a 'one-size-fits-all' approach.

[75] D274, fig 4
[76] D471, para 260

The Proponent responded to this request by acknowledging the particular sensitivities of the residents at UAW and detailing current and future engagement. It proposed a new EPR SC6 that was specifically tailored for this aged care facility [77].

Aitkin Partners, representing 19 submitters at 1 Elland Avenue, requested acquisition of this building as proposed loss of amenity which could lead to mental health impacts was concerning to residents.

(iii) Discussion

Further information regarding additional noise mitigation treatments and a specific EPR to manage impacts at UAW provided by the Proponent responded to some of Whitehorse's recommendations.

One outstanding issue to be resolved is whether the residents of 1 Elland Avenue should be offered voluntary acquisition. This building will directly abut part of the construction site with very little buffer or no effective buffer distance. Works in this area will be intensive over a long time frame. Although the EMF will provide a regime for managing noise and additional decking for noise attenuation has been proposed, the IAC considers the potential for noise impact in this area to be significant, noting that more than half of the bulk excavation would need to be completed adjacent to these apartments before decking could be installed [78].

The IAC agrees with Whitehorse that off-site mitigation measures should include a voluntary acquisition scheme for affected residents and this is discussed further in Chapters 8 and 13.

(iv) Findings

The IAC finds:

- The proposed EPR dealing specifically with UAW is an appropriate response.
- Residents of 1 Elland Avenue should be provided with the opportunity to participate in a voluntary acquisition scheme (this is discussed further in Chapters 8.9 and 13.9).

6.5 Ground-borne Noise and Vibration

6.5.1 Project wide

(i) What did the EES say?

Ground-borne noise and vibration for construction and operation was assessed against guideline levels to avoid human discomfort and amenity impacts, building and infrastructure damage and impacts to sensitive equipment/areas.

During construction, there may be temporary amenity impacts to residents who reside near the tunnel alignment (i.e. within 50 metres). The EES concluded these impacts would be appropriately managed through the noise and vibration EPRs, the RSG and the Communications and Stakeholder Engagement Plan (CSEP).

Based on the criterion adopted within the EES, vibration sensitive equipment located near the tunnel alignment was not anticipated to be affected.

[77] TN46, D726
[78] D774

Operational ground-borne noise and vibration impacts will be effectively mitigated by the use of high and very high vibration attenuation track-forms where required. The use of these track-forms in appropriate locations will enable compliance with nominated guideline levels for human comfort, amenity and damage to buildings and infrastructure.

Some residential properties near construction sites and along the alignment may be affected by ground-borne noise and vibration effects, especially if works occurred during the night period. Site establishment works may affect some commercial properties. Such effects would be short term and could be mitigated through measures contained in the RSG and BSG.

Operational noise from trains within the tunnel would be attenuated through the installation of appropriate trackforms along the alignment.

The key issues to be resolved are:

- status of operation noise and vibration limits for trains in tunnels (i.e mandatory or guideline)
- appropriateness of modelling software for ground-borne noise and vibration.

(ii) Evidence and submissions

Dr Heilig explained the modelling process and parameters used to predict ground-borne noise and vibration to sensitive receivers along the tunnel alignment, which resulted in the assessment being conservative. Dr Heilig concluded implementation of the EPRs which require ongoing modelling, monitoring, mitigation, validation and communication would adequately protect personal amenity and sensitive equipment.

Dr Brown provided evidence regarding the ground-borne noise and vibration associated with operation. Dr Brown stated two models were used to inform the EES and both models were calibrated verified and validated. His view was operational impacts would be satisfactorily mitigated using vibration isolating track-forms. Operational vibrations would be below the threshold of perception and ground-borne noise was not expected to be noticeable.

Dr Brown's written evidence noted there were multiple submitters who expressed concern regarding operational vibration and ground-borne noise. Dr Brown noted criteria provided in the EMF were set at levels not expected to cause impacts. Compliance must be verified as detailed in the EMF.

Dr Brown stated track-form mitigation measures are generally durable and not dependent on maintenance. He acknowledged there were limited contingency measures for the rectification of any exceedances during commissioning. In response to questions from the IAC, Dr Brown considered it appropriate to adopt ground-borne noise and vibration levels for operation as fixed mandatory targets.

The Box Hill Residents' Voice questioned what remedies would be available if problems arose, who would be responsible and would compensation be available [79].

Mr Butera questioned whether the software used for modelling both construction and operational impacts was accurate and recommended the IEA select the software to be used, as well as the undertaking of a verification process. His opinion was the guideline operational ground-borne target in EPRNV14 was too high, but he did not propose alternative criteria.

[79] D633

Mr Butera recommended very high attenuation track-form be used on a higher proportion of the alignment so future change in land use would not be constrained. The Proponent considered this recommendation to be inappropriate, as Mr Butera was unable to identify locations proposed for rezoning to justify the use of higher attenuation track. It further noted such treatments were expensive and should be used prudently and where required [80].

Both Drs Heilig and Brown provided evidence regarding sensitive equipment at Monash University. Mr Butera provided evidence regarding potential impacts to sensitive equipment at Monash University, but his evidence was not tested as it ultimately withdrew from the process.

Submitter S329 proposed SRLA be held accountable if operational vibrations were excessive, a credible maintenance plan to ensure operational vibration targets are perpetually achieved, and legal protection for affected stakeholders.

(iii) Discussion

The IAC notes criteria for ground-borne noise and vibration during operation as shown in EPRs NV13 and NV14 are provided as reference levels to be achieved. Presumably this results in the levels as provided, acting as mandatory criteria. As Dr Brown noted, if the proposed levels are not achieved, there are few contingency measures available to rectify the situation and the IAC is unclear as to what recourse any affected residents may have.

Mr Butera was critical of the methodology and modelling used to assess ground-borne noise during operation. Careful design, accurate modelling with verification and validation will be required to ensure compliance with nominated criteria for operation. Dr Brown explained that as the design progresses, additional modelling inputs would be determined based on actual geotechnical conditions, soil parameters and building transfer functions, all to be verified by measurement. The analytical model developed and used for specific sites would be validated.

The IAC is satisfied the approach described by Dr Brown, followed by verification as part of the modelling process, removes the need for specific software to be approved by the IEA.

(iv) Findings

- Criteria for ground borne-noise and vibration as shown in the Day 4 EPRs NV13 and NV14 should be mandatory enforceable criteria.
- The EMF should provide a mechanism/protocol to deal with any non-compliance associated with operation (new EPR NV18).
- Specific modelling software does not need to be approved by the IEA provided the model is validated and verified.

6.5.2 Deakin University

(i) What did the EES say?

The EES considered sensitive equipment located at Deakin University but did not recommend specific mitigation measures beyond the general mitigation measures in the EMF.

The key issue to be resolved is:

- whether there will be adverse impacts from the provision of high attenuation track-form.

[80] D775 para 323

(ii) Evidence and submissions

Deakin relied on the evidence of Mr Butera who requested very high attenuation track-forms be provided along the entire alignment in the vicinity of Deakin University. Mr Butera sought tailored mitigation treatments for sensitive equipment at Deakin University.

Under cross examination by the Proponent, Mr Butera acknowledged the track alignment ran below sporting fields and under an area where student accommodation was located. He acknowledged there were no known future plans for expansion. Mr Butera confirmed the EMF could satisfactorily address his concerns regarding sensitive equipment at Deakin University.

The Proponent confirmed high attenuation track would be used below Deakin University and consequently the EES predicted low levels of ground-borne noise and vibration.

(iii) Discussion

Track-form design has been informed by modelling results and further refinements to the design will be made as site specific modelling inputs are validated. The current uses at Deakin University will not suffer adverse impacts based on the proposed provision of high attenuation track-form. Mr Butera expressed concern regarding potential future land uses being constrained but acknowledged there were no currently known plans for new buildings or equipment. There was no evidence to suggest future land uses at Deakin University would be compromised.

(iv) Findings

The IAC finds:

- The proposed track-form in the vicinity of Deakin University has been appropriately designed to minimise impacts from ground-borne noise and vibration.

6.6 Recommendations

The IAC recommends:

<u>Environmental Management Framework</u>

Include the following changes:

- **Revised EPR AQ1, 2b and 2e to include additional details for dust management plans, and 2c viii added to require monitoring data to be publicly available.**
- **Revised EPR AQ2 to require monitoring data to be publicly available.**
- **Revised EPR NV2 to add reference levels.**
- **Revised EPR NV3 to add response measures and monitoring.**
- **Revised EPR NV12 to amend internal noise levels.**
- **Revised EPR NV13 to reference levels changed to limits.**
- **Revised EPR NV14 to reference levels as mandatory limits.**
- **New EPR NV17 to require cumulative noise assessment at the Stabling Facility.**
- **New EPR NV18 to provide a protocol for non-compliance of operational ground-borne noise and vibration.**
- **Revised EPR EMF4 to include additional protocols for responding to amenity related community complaints.**

These changes are included at Appendix G.

6.7 Overall conclusions on amenity and environmental quality

Subject to the recommendations of the IAC, there are no amenity or environmental quality impacts that preclude the Project being approved or the evaluation objective being achieved.

7 Biodiversity and arboriculture

7.1 Introduction

Biodiversity and arboriculture is discussed in:

- EES Technical Summaries:
  - Arboriculture and Urban Forest
  - Ecology
- Technical Appendices:
  - D.1 – Arboriculture and Urban Forest Existing Conditions
  - D.2 – Arboriculture and Urban Forest Impact Assessment
  - G.1 – Ecology Existing Conditions
  - G.2 – Ecology Impact Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed eight mitigation measures in the EPRs to manage the impacts of the Project on biodiversity and arboriculture. These included:

- EPRs: AR1 – AR3
- EPRs: EC1 – EC5.

General and place-specific requirements are included in the UDS.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TN:

- TN32 - Response to questions to Ms Caffin (D431).

Additionally, the IAC had regard to relevant submissions and evidence. Table 3 lists the biodiversity and arboriculture evidence.

Table 3 Biodiversity and arboriculture evidence

Party	Expert	Firm	Area of expertise
Proponent	Alicia Michael [81]	Jacobs	Terrestrial Ecology
Proponent	Fiona Gilbert[82]	Jacobs	Aquatic ecology
Kingston	Jeff Yugovic	Biosis	Ecology
Proponent	Meg Caffin	Urban Forest Consulting	Arboriculture
Proponent	Simon Howe[83]	Landscape DEPT	Arboriculture
Kingston	Cameron Ryder	C&R Ryder Consulting	Arboriculture
Kingston	Sara Lloyd	E2Designlab	Urban cooling and environment

[81] Evidence filed but not called at the Hearing
[82] Evidence filed but not called at the Hearing
[83] Evidence filed but not called at the Hearing

7.2 Biodiversity

7.2.1 Project wide

(i) What did the EES say?

The EES noted the Project would be developed in a highly urbanised setting, with almost all remnant native vegetation having been cleared. Remaining ecological values present include small pockets of native vegetation, revegetation of varying complexity and diversity, and planted trees. Some threatened fauna species persist within urban areas, but most of the species present are common generalist species adapted to living in urban environments.

The Project would require the removal of 0.782 hectares of native vegetation assessable under the Department of Environment, Land, Water and Planning (DELWP) Vegetation Removal Guidelines 2017 (including 13 large trees) and commensurate offset planting.

It is not expected the Project would impact on threatened species listed in the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or the *Flora and Fauna Guarantee Act 1998.*

The key issue to be resolved is:

- the adequacy of the biodiversity and ecological impact assessments and the mitigation measures.

(ii) Evidence and submissions

Many submitters expressed concerns about the Project's impacts on native flora and fauna, particularly in relation to specific species and sites. These submissions were typically based on anecdotal evidence or observations and contained little detailed commentary about the overarching assessments and findings within the EES. Site specific issues for Cheltenham and the Stabling Facility are discussed later in this chapter.

The Proponent provided evidence in relation to terrestrial and aquatic ecology that supported the EES and its overarching conclusions that impacts would either be avoided or appropriately mitigated. In her evidence, Ms Michael recommended various changes to EPRs EC1 and EC4 that the Proponent accepted and included in its final EMF.

Kingston relied on the evidence of Dr Yugovic who assessed the overall adequacy of the EES as well as the Project's impacts on the Cheltenham and Stabling Facility sites. He provided broader commentary on the EES and the Technical Appendices G.1 (Ecology Existing Conditions) and G.2 (Ecology Impact Assessment) and noted these covered the 'usual scope' for such a development proposal and impacts on national and state listed species was unlikely. He was critical of the lack of local impact assessment and identified minor errors in the Technical Appendices.

Kingston, Whitehorse and Monash sought additions to EPR EC1 that would provide more specificity about matters to be addressed in relation to pre-construction site assessments and replacement planting. Dr Yugovic supported these additions.

(iii) Discussion

The IAC is satisfied the overarching EES assessment of biodiversity and ecological impacts is sound. It notes potential impacts are limited by the extensive tunnelling and limited extent of above ground works that are typically located in highly modified environments.

The IAC supports the Proponent's changes to EPRs EC1 and EC4 recommended by Ms Michael and these are included in the recommended EMF at Appendix G.

Although Dr Yugovic was critical of a perceived failure to consider impacts at the local (municipal) level, the IAC does not believe this compromises the impact assessment. It is satisfied any local impacts can be identified and addressed through future detailed design processes. Dr Yugovic's evidence identified various minor errors in the Technical Appendices and while these are not significant, the Proponent should make any corrections that it believes are appropriate.

The EPR additions sought by the Councils (particularly to EPR EC1) are matters that can be addressed through the general requirement for the pre-construction site assessment that would inform detailed design. Rather than list additional matters that should be considered during this process, the IAC considers the assessment should be conducted in consultation with the relevant land manager and/or Council. This would provide the opportunity for relevant site specific issues to be identified and would be a more productive approach than listing additional matters that might not be universally applicable. The IAC has included this requirement in the recommended EPR EC1 at Appendix G.

(iv) Findings

The IAC finds:

- The EES assessment of biodiversity and ecological impacts is fit for purpose.
- Biodiversity and ecological impacts will be largely avoided by the extent of tunnelling and the location of above ground works in areas that are highly modified.
- The EMF and UDS provide a sound basis for mitigating biodiversity and ecological impacts, subject to the IAC's findings in relation to specific sites.

7.2.2 Cheltenham

(i) What did the EES say?

The EES found that:

- the Project would require the removal of 0.041 hectares of Ecological Vegetation Class (EVC) 3 (Deep Sands Herb Rich Environment) that would require offset planting
- five threatened terrestrial species are considered to have a moderate to high likelihood of being present in the study area
- one protected flora species under the *Flora and Fauna Guarantee Act* was recorded in the rail easement.

No threatened ecological communities or flora would be impacted.

The key issue to be resolved is:

- biodiversity and ecological impacts within the Sir William Fry Reserve.

(ii) Evidence and submissions

The Proponent provided evidence in relation to terrestrial and aquatic ecology that supported the EES impact assessment and the proposed mitigation measures.

Kingston did not make detailed submissions in relation to Cheltenham but relied on Dr Yugovic's evidence that included his assessment of potential impacts on flora, fauna and biodiversity values.

Dr Yugovic did not recommend any site-specific mitigation measures, beyond the general changes discussed earlier. However, he identified an additional patch of native vegetation on the site not referenced in the Technical Appendices. Ms Michael advised this patch will be assessed to confirm its status (in accordance with ERP EC1) and, if necessary, will be subject to offset planting (in accordance with EPR EC3).

Various submitters raised general concerns about the removal of trees, loss of habitat and impacts on specific species, including the Southern Brown Tree Frog within the Sir William Fry Reserve ponds.

(iii) Discussion

The IAC is satisfied the biodiversity and ecological impacts associated with Cheltenham will be limited and can be appropriately mitigated through the EMF.

The loss of EVC vegetation patches would be confined to a relatively small total area and require offset planting. The additional patch of potential EVC identified by Dr Yugovic will be assessed in accordance with the pre-construction site assessment required under EPR EC1. If necessary, it will require offset planting.

Impacts on individual fauna species will be minimal and can be appropriately mitigated through the EMF. Potential impacts on fauna and aquatic species that use the ponds are not expected to be significant, noting the ponds are outside the construction area and will benefit from various construction EPRs intended to protect water quality and habitat. Ms Gilbert and Dr Yugovic did not express concerns about potential impacts on the Southern Brown Tree Frog.

(iv) Findings

The IAC finds:

- The biodiversity and ecological impacts on the Cheltenham SRL station site and surrounding area would be acceptable.

7.2.3 Stabling Facility

(i) What did the EES say?

The EES found that:

- the Project would require the removal of 0.103 hectare of EVC 53 (Swamp Scrub) and one small scattered tree that would require offset planting
- initial works would impact on 0.138 hectare of EVC 53 (Swamp Scrub), 0.044 hectare EVC 55 (Plains Grassy Woodland) and five scattered trees
- no threatened ecological communities listed under the EPBC Act are present
- native vegetation does not meet the characteristics of any threatened community under the *Flora and Fauna Guarantee Act*
- no threatened flora species were identified (although four species listed under the *Flora and Fauna Guarantee Act* have been planted within the study area)
- the site is not considered to meet the definition of 'important habitat' for migratory species defined under the EPBC Act
- there are no Groundwater Dependant Ecosystems (GDEs) within the site.

The key issue to be resolved is:

- biodiversity and ecological impacts within the Stabling Facility and on adjacent land.

(ii) Evidence and submissions

The Proponent relied on the evidence of Ms Michael and Ms Gilbert and concluded the site is highly disturbed, in poor ecological condition and is not ecologically sensitive. It acknowledged Dr Yugovic's evidence about the site's current value for raptor habitat but noted this was a consequence of its existing condition that would change, regardless of how the site might be developed.

Kingston did not make detailed submissions about biodiversity and ecological impacts, but provided commentary associated with its alternative proposal for the site. It relied on the evidence of Dr Yugovic that included his assessment of potential impacts on flora, fauna and biodiversity values resulting from habitat loss, lighting and noise. Dr Yugovic discussed the site's broader ecological function within the Chain of Parks and green wedge. He highlighted the habitat value of the existing wetland and that the site is locally significant as raptor habitat. Dr Yugovic acknowledged the relevant EPRs intended to address impacts but expressed various concerns about their drafting and effectiveness.

MTTY raised concerns about ecological impacts that were shared in many submissions from local residents. These included the loss of birds and their habitat (including raptor habitat) and impacts on frogs and reptiles. They highlighted the potential impacts associated with lighting and the site's social significance for birdwatching. These submissions were accompanied by various documents including reports, bird lists, letters of support and photographs.

MTTY opposed the use of the site. It provided recommended changes to the EPRs in the event it is approved. These included changes to EPRs EC1 and EC4 relating to:

- protecting trees within the Kingston Linear Reserve and the Henry Street Trail
- the use of local indigenous nurseries
- mitigation measures to provide habitat connectivity while habitat is restored
- managing light impacts on the Stabling Facility retarding basins.

(iii) Discussion

The IAC accepts that the site, as currently used, has utility as fauna habitat, particularly for raptors. This is largely a result of the site's size, lack of human activity and limited noise and light impacts. However, it has little remnant or planted vegetation and does not have significant biodiversity or ecological values. The loss of existing habitat would be an adverse impact but must be assessed in terms of the significance of the impact and the adequacy of the mitigation measures. The IAC notes the likelihood that alternative uses, such as a regional sports facility, would likely have adverse impacts. As Dr Yugovic noted in cross-examination, the best raptor habitat outcome would be to leave the site as it is – an outcome that no-one supported.

The site has little remnant vegetation, and the Project will require offset planting in accordance with the DELWP Vegetation Removal Guidelines 2017. The EMF and UDS support the retention and protection of existing vegetation in the Kingston Linear Reserve and the Henry Street Trail (EPRs EC1 and LUP1), in addition to providing landscape buffers within the site's boundaries [84]. While the design of the facility is yet to be finalised, the IAC believes the design process should seek to minimise the development footprint, maximise the area available for revegetation and habitat, and provide for public access and use of surplus land, including augmenting the Kingston Linear Reserve and the Henry Street Trail.

[84] D761, Map 5

The IAC considers achieving these outcomes could make an important contribution to mitigating potential ecological impacts by providing additional habitat and improved habitat connectivity. This would be assisted by the landscape buffer along the site boundary proposed by the Proponent in its final Stabling Facility Surface and Tunnel Plan and referenced in the UDS [85].

The IAC has reviewed the site specific changes to the EPRs sought in submissions and is satisfied the issues they respond to can be adequately addressed in the recommended EMF and UDS, and through detailed design of the facility. However, the IAC agrees that EPR EC4 (3) (the design of water bodies at the Stabling Facility) should require consideration of Appendix A of the National Light Pollution Guidelines for Wildlife, (DAWE, 2020). Although this is a matter for future detailed design and would need to be reconciled with security and safety needs, improving the habitat value of the retarding basin area would be a positive outcome.

(iv) Findings

The IAC finds:

- The site is highly degraded and has limited habitat or ecological value.
- Some biodiversity and ecological impacts would be locally significant, particularly the loss of raptor habitat.
- The detailed design of the Stabling Facility should seek to enhance biodiversity and ecological outcomes.
- The recommended EMF and UDS provide a suitable basis for managing biodiversity and ecological impacts.

7.3 Arboriculture

7.3.1 What did the EES say?

The EES assessed 2,438 trees in the study areas and found 1411 trees would be removed, including 1,106 medium and long-term viability trees (MLTV)[86]. An additional 409 trees would be potentially impacted, including 256 MLTV. The EES assessed 146,957 square metres of tree canopy in the study areas and found 54,948 square metres would be removed and 18,376 square metres would be potentially impacted.

The key mitigation measures are provided in the EMF and UDS. The EMF requires replacement planting that would double the tree canopy cover lost for the Project and various plans including a tree removal plan, tree protection plan and tree canopy replacement plan. The UDS includes requirements relating to shade loss, urban heat island effects and landscape character.

The key issues to be resolved are:

Project wide:

- the adequacy of tree canopy replacement mitigation measures
- the need for a tree inventory database
- addressing the urban heat island effect
- other changes to the arboriculture EPRs.

[85] D761

[86] Trees considered to be viable beyond the anticipated delivery timeframe for the Project

7.3.2 Project wide

(i) Evidence and submissions

The Proponent noted tree removal had been largely avoided by the extent of tunnelling. It submitted the extent of tree loss was relatively modest and the requirement to replace double the tree canopy to be removed was a Project benefit. It was satisfied the arboriculture and ecology EPRs would provide appropriate mechanisms to mitigate any impacts and agreed to various changes sought by the Councils. It noted urban heat island effects were extensively referenced in the UDS and would be adequately addressed.

Ms Caffin supported EPR AR3 that requires the preparation of a tree canopy replacement plan and replacing double the amount of tree canopy to be removed and explained how the EPR was intended to operate. Ms Caffin undertook canopy replacement modelling for the Proponent that considered various matters, including the extent to which the replacement target could be met within the Project boundary and individual station sites. This modelling was based on several assumptions and could not be confirmed in the absence of more detailed development and landscape plans for the station sites.

Kingston sought the inclusion of two new arboriculture EPRs requiring the preparation of a tree inventory database and an arboricultural impact assessment together with various consequential changes to other EPRs. It further sought detailed changes to EPRs AR2 and AR3 [87].

Mr Ryder reviewed the Technical Appendices and was generally supportive of the methodology, subject to concerns about mapping accuracy and the assessment of individual trees. He provided commentary on the Cheltenham and Stabling Facility sites.

Mr Ryder recommended two additional EPRs to require development and maintenance of a tree inventory database and the completion of arboricultural impact assessments. These recommendations were in part based on his involvement in the MTP. Kingston provided additional EPRs to address these matters.

Ms Martin noted Kingston's strategy of a 3:1 tree replacement strategy and recommended it be applied to the Project.

Dr Lloyd provided overarching commentary on the urban heat island effects of the Project, specifically the Cheltenham station and Stabling Facility sites. Dr Lloyd reviewed the relevant EPRs and recommended various changes to highlight the benefits of tree canopies, shade and irrigated landscapes.

Monash and Whitehorse jointly and individually proposed changes to the EPRs and generally supported the changes sought by Kingston. Both Councils proposed an additional EPR that would require compensation to be paid for the amenity value of 'public' trees that would be removed.

Other submissions raised a range of issues, including general concerns about the loss of existing vegetation and the adequacy of the tree replacement ratio.

(ii) Discussion

Tree canopy replacement

[87] D647, p88

The IAC is satisfied the requirement to replace double the tree canopy area removed by the Project is a beneficial and appropriate mitigation measure. The IAC notes the Proponent's advice that revegetation requirements for other projects have not been as prescriptive and would not achieve the extent of replanting proposed for this Project.

The IAC agrees with the Proponent's assessment. It does not support submissions that sought a higher ratio or larger area of replacement planting, or that an alternative method of determining or measuring the required extent of revegetation should be adopted.

Some submissions raised concerns about the extent to which replacement planting can be achieved in the Project boundary and within specific sites. This was noted by Ms Caffin who agreed her modelling of planting capacity was likely to be optimistic. While Ms Caffin's modelling provided a useful indication of where replacement planting might occur, actual planting will be determined by a range of factors and depend upon detailed planning processes that will occur in the future. The IAC is satisfied that at this stage of the Project, the approach adopted in the EES and required under the EMF is appropriate.

Tree inventory database and impact assessments

The IAC believes there is merit in requiring the preparation and maintenance of a tree inventory database as recommended by Mr Ryder and Kingston. Although this is a matter that could fall within the detail of the relevant Construction Environment Management Plans, it is appropriate it be required through the EMF and there be guidance about what it should address. In forming this view, the IAC has had regard to Mr Ryder's advice about the MTP and the benefits of having a consolidated database. A version of Mr Ryder's proposed EPR is included in the recommended EMF at Appendix G.

The IAC is not satisfied a further EPR is necessary to require individual tree impact assessments as sought by Mr Ryder and Kingston. This can be addressed through the EPR requirement to develop and implement tree removal plans.

Urban heat island effects

The IAC acknowledges the need to address the Project's urban heat island effects and the broader environmental and social impacts this can cause. Dr Lloyd's evidence focussed on the EMF and did not acknowledge the relevant elements of the UDS that include overarching requirements under the themes of 'green infrastructure' and 'materials and finishes', together with place-specific commentary and requirements.

The IAC is satisfied the EMF, when read in conjunction with the UDS, provides an adequate foundation for addressing urban heat island effects, although it acknowledges that effective mitigation needs to occur as part of future detailed design processes.

The IAC reviewed Dr Lloyd's specific EPR recommendations and is satisfied the issues of concern are adequately addressed in the recommended EMF, although it has included additional references in the recommended EPR AR4.

Other changes to the arboriculture EPRs

Ms Caffin's evidence about EPR AR3 included observations about additional factors that might inform the preparation of tree protection plans, including additional considerations for identifying tree planting locations outside the Project boundary. Ms Caffin did not oppose these considerations being included in the EPR, but preferred they be guidelines and not mandatory requirements. The IAC supports this additional guidance and has included it in its recommended

EMF at Appendix G. Ms Caffin agreed that replacement planting on Government land should be beyond existing planting programs, the Proponent included a reference to this effect in EPR AR3.

Kingston, Monash and Whitehorse sought an additional and preliminary EPR to '*Maximise tree and shrub retention and mitigate canopy loss'*. The IAC is satisfied this is already reflected in the EPR that requires the development and implementation of tree removal plans.

The IAC does not support a requirement for compensation be paid for the loss of 'public' trees. This is adequately addressed by the overarching requirements to provide replacement tree canopy.

Various submitters, including the Councils, proposed further changes to the EPRs to better address specific issues. Without listing those changes here, the IAC has reviewed these recommendations and is satisfied that most are either adequately addressed in the various approval documents or are not adequately justified. The changes the IAC concludes are warranted are included in the recommended EMF at Appendix G.

(iii) Findings

The IAC finds:

- The tree canopy replacement mitigation measures are appropriate and would provide a positive Project outcome.
- The EMF should include a requirement to maintain a tree inventory database.
- The EES and approval documents adequately addresses urban heat island effects.

7.4 Recommendations

The IAC recommends:

Environmental Management Framework

Include the following changes:

- **Revised EPR EC1 to require pre-construction assessments to be conducted in consultation with the relevant land manager and/or council.**
- **Revised EPR EC4 to apply Appendix A of the National Light Pollution Guidelines for Wildlife to the Stabling Facility.**
- **New EPR AR1 to require a tree inventory database.**
- **Revised EPR AR1 (renumbered as AR2) to require consultation with the relevant land manager and/or council.**
- **Revised EPR AR3 (renumbered as AR4) to provide additional guidance for replacement tree planting.**

These changes are included at Appendix G.

7.5 Overall conclusions on biodiversity and arboriculture

Subject to the recommendations of the IAC, there are no biodiversity or arboriculture impacts that preclude the Project being approved or the evaluation objective being achieved.

8 Business and retail

8.1 Introduction

Business and retail is discussed in:

- EES Technical Summaries:
  - Business and Retail
- Technical Appendices:
  - E.1 – Business and Retail Existing Conditions
  - E.2 – Business and Retail Impact Assessment.

The evaluation objective is:

> 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.

As exhibited, the EES proposed seven mitigation measures in the EPRs to manage the impacts of the Project on business and retail. These included:

- EPRs: B1 – B7.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN08 – Businesses and dwellings acquired or displaced for the Project (D242)
- TN28 – Land acquisition process (D409)
- TN36 – Residential and Business Support Guidelines updates (D442).

Additionally, the IAC had regard to:

- relevant submissions and evidence
- Attachment D of the exhibited EES: 'Business and Residential Support Guidelines'.

Table 4 lists the business and retail evidence.

Table 4 Business and retail evidence

Party	Expert	Firm	Area of expertise
Proponent	Marianne Stoettrup	Matters More Business	Business
Proponent	Tony Dimasi	Dimasi & Co	Retail economics
Monash	Ellis Davies	Ethos Urban	Business
Whitehorse	Ellis Davies	Ethos Urban	Business
Monash University	Eamon McGinn [88]	Deloitte	Business
Monash University	Jacek Jasieniak [89]	Monash University	Research facilities
Monash University	Les Brown [90]	M3 Property	Property
APH Holdings	Matthew Lee	Deep End Services	Retail economics
Move the Train Yard	Stephen Anthony	Macroeconomics	Financial risks

[88] Evidence filed but not called at the Hearing
[89] Evidence filed but not called at the Hearing
[90] Evidence filed but not called at the Hearing

8.2 Project wide

The EES noted there would be:

- some loss of businesses (and employment) due to acquisition and/or displacement
- risk of reduced demand for business and/or retail, especially at Glen Waverley and Box Hill
- cumulative business and construction impacts from redevelopment in Box Hill (for example from the Project, Vicinity Centre plans and ongoing residential development)
- expected negative impacts on business and/or retail, but these are estimated to be negligible to moderate in most localities.

The IAC notes negative business impacts are proposed to be managed by the EPRs, the BSG and the Business and Residential Relocation Support Guidelines (BRRSG).

The evidence of Mr Dimasi noted there will be:

- some loss of businesses (and employment) due to displacement
- reduced demand for business and/or retail during construction, particularly at Cheltenham, Clayton, Glen Waverley and Box Hill
- in most areas, the expected negative impacts on business and/or retail are estimated to be negligible to moderate.

Kingston, Monash and Whitehorse supported an Employee Assistance Strategy, similar to that prepared for the North East Link Project.

The key issues to be resolved are:

- business displacement/relocation/acquisition in Cheltenham, Clayton, Glen Waverley and Box Hill
- potential impacts in Clarinda due to the closure of Old Dandenong Road.

8.3 Cheltenham

The key issue to be resolved is:

- impacts of the Project on existing businesses.

8.3.1 Evidence and submissions

Ventana Pty Limited (Scentre Group and AMP Capital for Westfield Southland [Ventana]) submitted that while it supported the station at Cheltenham, it had concerns about:

- precinct planning
- physical infrastructure (linkages and access)
- construction and disruption.

Specifically, it sought the area be elevated to and recognised as a Metropolitan Activity Centre. Its submissions (S302 and D584) expanded on this but focussed more on traffic and access issues (see Chapter 15).

The IAC asked Ventana whether it considered the potential for retail at the new station to be an issue for Southland. Ventana acknowledged there would be some complementary retail and food premises on the station site but did not believe the potential for higher order retail was an issue.

Property and Planning Partners made submissions on behalf of Murray Wishart Carter, Highett Metal Trading Pty Ltd, Brosnahan Pty Ltd and P Dykas Pty Ltd (D610). These are the owners of

commercial properties at the corner of Nepean Highway and Bay Road to be acquired for the Project. The submission expressed concerns about the proposed timing and method for acquisition of land and cited practical impacts such as renegotiating leases.

8.3.2 Discussion

Although the detail of relocation and compensation matters are largely beyond the scope of the IAC's considerations, it notes the relevant elements of the BRRSG, particularly at 3.1(3) in relation to assessing the timing and viability of relocation and possible impacts. It encourages the Proponent to expedite discussions with all affected landowners about the timing and nature of acquisition and/or relocation.

8.3.3 Findings

- The relevant EPRs and support guidelines will effectively manage any business impacts at Cheltenham.

8.4 Stabling Facility

The key issue to be resolved is:

- potential impacts of the closure of Old Dandenong Road on the Clarinda shopping area.

8.4.1 Evidence and submissions

There was a perception amongst the local Heatherton community submitters that traders in Clarinda would be impacted due to the closing of Old Dandenong Road which would result in additional travel time to that centre for some residents. This was not substantiated by any evidence or raised in submissions from business owners located in Clarinda.

8.4.2 Discussion

The IAC questioned other options where the local community could undertake shopping and business needs, and it is clear there are a range of options, all five to 15 minutes by car. The IAC acknowledges it may take longer to access Clarinda if Old Dandenong Road is closed.

8.4.3 Findings

- There will be no adverse impacts on the Clarinda shopping area.

8.5 Clayton

The key issue to be resolved is:

- impacts from construction on the existing Clayton Activity Centre.

8.5.1 Evidence and submissions

Monash noted the Project will displace 24 businesses in Clayton and with limited vacancies in that centre, there may be issues in replacing these in a suitable location. It further noted there may be disruption issues for those business operators who will remain, particularly during construction. It urged appropriate support and financial assistance.

8.5.2 Discussion

The IAC accepts there will be business disruption at Clayton and the BSG needs to be appropriately implemented to ensure minimal impacts. Further, there will be significant construction impacts. Post construction, this part of the Clayton Activity Centre will be well placed to result in significant business uplift upon completion of the Project and through its operation.

8.5.3 Findings

- There will be some localised impacts at Clayton but these can be effectively managed.

8.6 Monash

The key issue to be resolved is

- impact of the station on Monash University and the broader National Employment and Innovation Cluster (NEIC) area.

8.6.1 Evidence and submissions

For Monash, the EES noted there was risk of long-term effects on existing industrial businesses in Notting Hill as improved public transport access results in increased rents. This may result in 'pushing out' some existing uses in favour of higher density employment uses such as office, business town centre, retail, hospitality and business accommodation.

Dexus owns land at 307 Ferntree Gully Road and advised it had recently prepared a Masterplan for its site, which it noted as being the largest single, private land holding in the north of the Monash NEIC (D712). While its submission largely focussed on access and traffic, it noted its support for the proposed location of the station and the opportunities the Project will present in terms of its site.

Valente Design made submissions the tunnels should not be located under Monash University as it would impede its research capabilities. The IAC questioned the interest of Valente in this issue and asked if it was aware Monash University and the Proponent had reached an agreement. While responding in the affirmative, its submission was pursued, noting:

> … given the level of research undertaken at the University, its reputation should not be compromised by having railway tunnels underneath its campus [91].

Acknowledging the confidential agreement, Valente Design requested the IAC recommend against the agreed alignment to avoid future risks to the University.

Valente Design submitted if the reputation of the University as a world-renowned research facility was lost, the whole NEIC would suffer financially, and the Project would become a liability.

8.6.2 Discussion

The IAC notes the Notting Hill/Monash University area forms part of the NEIC and is an area identified for significant change which will result in considerable uplift in business and employment activity. It will be the focus of research and innovation and the new station will add considerable value to that area.

The IAC does not consider the Valente Design submission raised adverse impacts in relation to the business and research needs of Monash University. The IAC is aware Monash University

[91] D709, para 37

maintained a 'watching brief' at the Hearing post the reaching of its agreement with the Proponent and it did not seek to be heard about this submission. There is no evidence or material before the IAC to support the Valente Design submission.

8.6.3 Findings

- There will be positive impacts on business in the Monash station area due to its location in proximity to Monash University and as part of the NEIC.

8.7 Glen Waverley

The key issues to be resolved relate to:

- impacts due to business displacement, coupled with the loss of car parking.

8.7.1 Evidence and submissions

Mr Dimasi agreed there will be business impacts at Glen Waverley and the traders in the Kingsway precinct would likely bear the brunt of the negative economic impact from construction. He noted the loss of high turnover car parking as a contributor to this.

Monash submitted the key impacts on Glen Waverley related to amenity and loss of parking, which in turn would impact on business continuity during construction and operation.

The evidence of Mr Davies did not explicitly conclude there would be loss of businesses. Rather his evidence focused on mitigation through ongoing monitoring and communication, financial assistance, relocation if required.

In its Part C submissions and summary of recommendations, Monash sought several changes, including to EPRs B2 (extending support to include financial, accounting and management assistance), B3 (financial assistance for relocation) and B4 (business liaison assistance). It recommended a new EPR for the creation of an employee assistance program.

The Glen Waverley Traders Association (GWTA) has been active since 1972 and represents over 200 traders. It submitted there needs to be tailored support to local business and service providers and that construction works need to be carefully planned and mitigated to ensure the Project does not create long-term and permanent problems for the centre (S138).

The IAC acknowledges the Glen Waverley Activity Centre provides multiple services for diverse communities, and the centre, like all others, has suffered from the COVID-19 pandemic. In discussing this, the GWTA noted COVID-19 *'… has been catastrophic and its impacts on our local traders cannot be underestimated*' [92].

In acknowledging the Proponent has begun engaging with the GWTA, it urges a more bespoke response that includes regular and ongoing consultation with GWTA and traders to ensure businesses can be prepared and can properly plan ahead for impacts and potential disruptions. The GWTA made some useful and practical recommendations in this regard in its submission.

Mr Dimasi noted the GWTA provided a very positive endorsement for the Project with its primary concern being the impact on carparking, particularly close to the Kingsway precinct, which he considered could be resolved.

[92] S138, para 13

8.7.2 Discussion

There is no doubt there will be significant business uplift in this centre upon completion and then operation of the new station. It will continue to incentivise this area and will value add to its designation as a Major Activity Centre. Car parking is dealt with in Chapter 15.7.

As Monash and Whitehorse made joint submissions, discussion about the EPRs and other support mechanisms is provided in Chapter 8.9.

8.7.3 Findings

- The impacts on Glen Waverley will be significant, mainly due to construction and loss of car parking (see Chapter 15.7), however, the IAC considers the business impacts can be managed.
- There should be a new EPR that provides for an employee assistance strategy.

8.8 Burwood

Th key issue to be resolved is:

- displacement of business.

8.8.1 Evidence and submissions

In her evidence, Ms Stoettrup noted the Project will attract investment and create jobs by accelerating the development of the Burwood education precinct.

8.8.2 Discussion

While Whitehorse noted four businesses were to be displaced at Burwood, it concluded '*The business impacts at Burwood will largely be mitigated by the successful relocation of the four acquired businesses*' [93]. Whitehorse made some comments about the BRRSG relating to what it considered to be their generic nature and the opportunities to improve the guidelines.

8.8.3 Findings

- The IAC considers the business impacts at Burwood will be minor.

8.9 Box Hill

The key issues to be resolved are:

- communication and certainty
- displacement and relocation of business
- cumulative impacts from multiple development fronts
- voluntary acquisition
- employee assistance strategy
- efficacy of the Business EPRs and support guidelines.

[93] D471, para 141

8.9.1 Evidence and submissions

(i) Proponent

In the context of business impacts on the whole Project, the Proponent acknowledged impacts at Box Hill are likely to be significant and considerable time at the Hearing was spent on this issue.

Mr Dimasi gave evidence that:

> While the estimated direct loss of total centre retail turnover is less than 10% since many of the businesses are non-retail in nature, the perceived importance of the businesses to be displaced also lies in their contribution to the cultural life of the centre, as detailed at Section 7.2.5 of the BRIA. EPR B6 has been crafted specifically to mitigate the impact of those business displacements [94].

He further noted in relation to submissions about cumulative impacts:

> It is true that there will be a number of small retail businesses that at this stage are not planned to be compulsorily acquired, but which will suffer from ongoing effects of noise, dust and difficult access because those businesses are located in a small area between the two construction sites [95].

(ii) Whitehorse

While Whitehorse acknowledged the potential for significant benefits once the station is operational, its concerns primarily related to the uncertainty of construction and the extent of business and retail displacement in the Box Hill Metropolitan Activity Centre. Whitehorse contended the loss of up to 60 businesses in the retail core would result in significant impacts that in turn, would result in detrimental impacts on trading and customer activity. This it said, was compounded by the long construction period with significant impacts on amenity.

At this stage, while the extent of business displacement is generally known, Whitehorse contended there has been no resolution about where these businesses might locate elsewhere in the Activity Centre, if at all. Whitehorse noted there are few vacancies in the core of the activity centre and was critical that no work had been undertaken to identify where displaced businesses will be located. It submitted:

> The BR IA raises the prospect of a mini mall. Ms Stoettrup raises the prospect of a container mall, or the setting up of a new retail strip in one or other streets on the southern side of the centres. These are just ideas. No willing landowner has been identified. No town planning assessment or feasibility has been carries out. There has been no development of any solution to relocate a significant number of displaced businesses [96].

Whitehorse expressed little confidence in the business and retail EPRs, nor did it have confidence the BRRSG or BSG would appropriately mitigate impacts. It considered the Guidelines were too generic and lacked definable outcomes. It made several recommendations in this regard.

In its Part C submissions and summary of recommendations, Whitehorse sought several changes, including to EPRs B2 (extending support to include financial, accounting and management assistance), B3 (financial assistance for relocation), B4 (business liaison assistance) and augmentation of B6 to identify the need to maintain the cultural aspects of the Box Hill Metropolitan Activity Centre. It recommended a new EPR for the creation of an employee assistance program.

[94] D83, para 5.18
[95] D83, para 5.20
[96] D471, para 118

It further sought the following changes to the BSG as follows:

(a) clarify that support measures will be funded by SRLA or the contractor;
(b) provide for earlier preparation of business plans;
(c) require monitoring of business activity before construction commences, including surveys to inform the extent of construction impacts; and
(d) require offers to businesses to prepare a financial baseline (as proposed as part of the business plan measure) before construction commences [97].

Whitehorse further sought a recommendation the BRRSG be included in SCO14 and be further reviewed in consultation with the Councils and impacted businesses prior to its approval.

(iii) Vicinity Centres

The EES acknowledged the risk of cumulative impacts arising from plans by Box Hill Central (Vicinity Centres) to undertake a complete redevelopment of its site, involving demolition of the northern part of the centre and its replacement with a series of mixed use buildings. The period of demolition and construction of that project is likely to overlap, to some significant degree, with construction of this Project.

Vicinity Centres advised its plans for the future redevelopment of the centre were due to be considered by Whitehorse in May. The IAC notes these plans were approved by Whitehorse accordingly (but it has not reviewed the final plans, its conditions nor is it aware if there will be any appeal to VCAT).

Mr Dimasi spoke to this submission and acknowledged the cumulative impacts on the centre as a result of both the Project and Vicinity developments overlapping over a considerable period of time. He observed:

> It is unavoidable that cumulative impacts will be felt as a result of both projects proceeding concurrently. On the other hand, it is also arguably desirable that they do proceed concurrently since the total period of disruption in order for both projects to be delivered can thereby be minimised [98].

(iv) APH Holding

APH Holding owns property at 925-927 and 941-951 Whitehorse Road, both sites of which have planning permits for 19 (hotel site) and 14 (office/retail) storey mixed use developments respectively. APH advised it owned several other properties in Box Hill and surrounds and it has, and will continue to, invest heavily in this area.

The hotel site was identified for acquisition as a site subject to future precinct planning. That 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.

Mr Lee gave evidence the hotel site permit is consistent with State and local policy and it would bring a range of planning, activity and capital benefits to Box Hill. His evidence reviewed relevant aspects of the EES and the evidence of Mr Dimasi and Ms Stoettrup, and contended the Business and Retail Impact Assessment:

> … should have considered the potential effect of SRL East on planned projects that were within the planning system at the time of the EES. To the extent that the impact assessment has ignored future projects, it has not addressed the Scoping Requirements fully [99].

[97] D471, para 143
[98] D83, para 5.17
[99] D133, para 59

While Mr Lee's evidence statement discussed potential economic benefit opportunities in the form of cost savings, design integration and project timing, he did not recommend any changes to the BSG or BRRSG to achieve this.

APH Holding recommended some changes to the UDS and the EMF, and it sought the removal of SCO14 from its land.

The Proponent's closing submission did not specifically address the particulars of this submission, but generally noted the EMF deals with business displacement and disruption. The submission highlighted the purposes of the *Land Acquisition and Compensation Act 1986* (LAC Act) to provide for the determination of compensation.

(v) M&W Investments Pty Ltd

M&W Investments Pty Ltd (M&W) has a registered interest in developing 1-3 Irving Street. This land parcel was previously subject to a restrictive covenant, which was removed after a Supreme Court decision to ultimately provide for a 16-level development. M&W acknowledged the land will be acquired and it did not seek to make submissions to the contrary. It did, however, raise concerns about the *'… paucity of information and clarity in respect of the timing and process for acquisition of the site*' [100].

At the Hearing, M&W noted its initial concerns regarding the acquisition process and its timing had not been addressed. It noted the lack of certainty regarding opportunities for the land, holding costs, land tax and the uncertainty about how the Proponent intends to acquire the land. The submission concluded by noting:

> … it is deeply concerned at the lack of transparency with respect to the proposed timing and methos of acquisition of land which is critical to deliver the station precinct [101].

This was a theme expressed by other submitters as discussed in relation to Cheltenham.

(vi) Charter Hall (Australian Tax Office)

Charter Hall is the owner of the building at 913 Whitehorse Road and it generally supports the Project. It made submissions about management of amenity impacts, timing of construction and the design approval framework. It made a number of suggested recommendations to the EPRs. With respect to business impacts, Charter Hall sought that EPR B3 be extended to include its land.

(vii) 1 Elland Avenue

Aitken Partners made a submission on behalf of 96 per cent of the owners of 1 Elland Avenue, including the City Edge Hotel, which occupies three lower levels of the building. In addition to this consolidated submission, 19 owners made individual written submissions and Aitkin Partners advocated for all of these. It noted the Proponent had indicated the land was earmarked for a stratum land acquisition (S232).

Its primary submission contended the whole block be compulsorily acquired due to ongoing and sustained impacts from safety and amenity, building safety, demolition and construction, as well potential impacts on the long-term tenancy of the hotel and apartment components of the building.

[100] D611, para 6
[101] D611, para 52

(viii) General

Various submitters questioned the impact the loss of the predominantly Asian business sector would have on the viability and culture of Box Hill, with the Whitehorse Ratepayers and Residents Association noting *'no amount of business coaching and signage or free coffee vouchers will make up for the lack of amenity for potential customers. … Effectively the soul of the current shopping centre will die*' [102].

Submitter 169 questioned the rating of 'minor impact' with regard to acquisition and/or displacement, and contended:

> Not only would there be loss of livelihood, service, real amenity to the community but a major increase in debt borne by all Victorians due to the cost of property acquisition and destruction of the private sector creating further unemployment and mental health issue, whose businesses were severely impacted due to pandemic lockdowns [103].

Likewise, S222 in submitting a preference for Option 4 for Box Hill, contended the local trade will be decimated from the acquisition and '*The cultural life of the local Asian community will be lost and move elsewhere*'. This submitter recommended '*Robust grievances and mechanisms to receive constant feedback from the community help ensure that the risk mitigation is minimising impacts*'.

Submitter 4 was critical of the EES and the Proponent in that it could not answer questions raised about the impacts of the Project on his family home, including about compensation for what he submitted would be a loss of value in the order of 20 to 30 per cent. Similar issues were raised by S44.

8.9.2 Discussion

Communication and certainty

Key to mitigating impacts is information and knowledge. While some business operators were aware their property may be or is likely to be acquired, the Proponent needs to provide certainty at the earliest opportunity to ensure impacted businesses can appropriately plan for this. For these reasons, the IAC supports the intent of the submissions made by Whitehorse in providing clarity and offering the opportunity for greater understanding of the BSG and it recommends the Proponent address and implement these changes accordingly.

The EES acknowledged some uncertainties remained about the likely business impacts and further research and analysis is required to establish with greater certainty the consequences of the Project's disruptions on the various station locations.

It is clear to the IAC that the Project, coming after two years of COVID-19 and lockdowns, will compound existing and present new issues to the various station sites as it will run parallel with economic recovery.

The IAC considers there should be bespoke case management consultation packages that specifically focus on Glen Waverley and Box Hill, in addition to the existing EMF, BSG and BRRSG to ensure a coordinated and proactive case management approach.

Displacement and relocation of business

[102] S97, p6
[103] S167, item 5

IAC does not have the information before it to definitively find certain land or businesses should or should not be acquired. There are provisions under the PE Act and the LAC Act that provide for this. Nor can it comment on the processes once these decisions have been made.

Notwithstanding, the IAC agrees with Whitehorse the extent of business displacement in Box Hill is significant and requires further clarity. It is clear more work needs to be done on the specificity of EPRs to make them more meaningful, particularly for Glen Waverley (due to other impacts such as loss of car parking that will affect business continuity) and Box Hill.

The IAC acknowledges the potential impacts on the displacement of businesses, but observes it had few submissions from retail and/or business operators in Box Hill, including the cluster of five banks that will be displaced. While it is evident that many would be leasing their premises, neither were there submissions from the landowners in this regard. The reasons for this are unknown, so the actual impact on retailers is less clear in this regard. There is no doubt there will be changes in the Market Street area and the type of businesses in that micro-locality.

Cumulative impacts from multiple development fronts

The IAC acknowledges that Whitehorse has spent considerable resources in developing the draft Structure Plan for the Box Hill Metropolitan Activity Centre, which has been put on hold pending the outcome of this Project. This will have an impact on how this centre will develop in the longer term.

The Proponent should work with Vicinity Centres to ensure that its sites and redevelopment can proceed, as far as practicable, to be in lock-step with the construction program of the Box Hill Station, and that both sites are developed to complement each other. Further, the concurrent construction and development of both these projects will need to be carefully managed to minimise impacts on business and residential stakeholders, as well as users and patrons of the Activity Centre.

The recommended changes to the UDS sought by APH Holdings relate to further opportunities to integrate adjoining development and design, which the IAC supports. Further, it supports the Proponent further reviewing the extent of land required for SCO14 prior to finalising the draft PSA.

The IAC acknowledges the property at 1 Elland Avenue will be heavily impacted by the Project works over a long period and it is likely that the hotel and residential complex will be subject to sustained detrimental impacts. While not making a formal recommendation in this regard, it urges the Proponent review this property as a candidate for actual or voluntary acquisition (should that recommendation be adopted).

Voluntary acquisition

The concept of a voluntary acquisition scheme has merit. It is one where a set of criteria is established and if a landowner meets that criteria, they can apply to be voluntarily acquired by the relevant authority. Further, it is understood this practice has been adopted by the Level Crossing Removal Authority. It was considered and recommended by the IAC for the North East Link Project and it was accepted by the Minister for Planning in his assessment of that Project for a particular geographic area.

Voluntary acquisition is difficult to deal with as there are no EPRs or guidelines that deal with this. The extent of both business and residential impacts will be significant and individual situations and reactions will vary. It is a matter the IAC considers the Proponent should give some further thought to and it may be that there should be some inclusions in the BSG and RSG to provide the

opportunity for affected property owners to be acquired, subject to particular circumstances where their land is not proposed to be acquired but special circumstances may warrant it.

The IAC recommends an additional Business EPR B4 to provide the opportunity for voluntary acquisition. It should be supported by clear guidance through the BSG or BRRSG, given the same recommendation is made for voluntary residential acquisition (see Chapter 13). While the IAC has drafted general EPRs, the drafting of the guidance is a matter for the Proponent to consider and prepare. Some issues to be considered may include (but are not limited to):

- distance from the adverse source/impacts
- special needs or circumstances (health, disability, other personal circumstances)
- length of construction time
- cumulative impacts (construction of the SRL coupled with other development projects)
- access constraints.

Employee assistance strategy

The IAC supports the inclusion of an Employee Assistance Strategy. It considers the extent of the construction of the Project warrants this form of mitigation.

In this regard, a new EPR B9 should be prepared to enable an Employee Assistance Strategy, based on that prepared for the North East Link Project. Whitehorse screen shared the final version of this at the Hearing but did not table it. The IAC sourced this after the Hearing closed (D800) and has used the North East Link approved version as the basis of a new EPR9.

Business EPRs and support guidelines

Overall, the IAC acknowledges the recommended mitigation measures to ensure the evaluation objective can be achieved, including possible business relocation (temporary and permanent), replacing lost car park spaces, managing construction disruptions, and assisting marketing and promotion of business precincts likely to be impacted. For retail and business purposes, the BSG and BRRSG are generally adequate, subject to minor changes.

However, these should be supplemented with the introduction of a voluntary acquisition scheme and an employee assistance strategy to assist in mitigation.

8.9.3 Findings

The IAC finds:

- Impacts on retail and business across all areas has generally been well addressed.
- There will be significant ongoing impacts on businesses in the Glen Waverley Major Activity Centre and Box Hill Metropolitan Activity Centre.
- Concurrent development at Box Hill will needed to be carefully managed to minimise cumulative and ongoing impacts as much as possible.
- The EMF and support guidelines require further review to ensure that affected businesses are appropriately mitigated in a transparent and fair way.
- Bespoke consultation documents should be prepared for the Box Hill (and Clayton and Glen Waverley) station areas to case manage the business and retail impacts.
- There will be significant business and other impacts at 1 Elland Avenue in Box Hill.
- The BSG should be updated to provide further clarity with, amongst other matters, support measures, business monitoring and early preparation of plans.
- There should be a new EPR 8 that provides the framework for a voluntary acquisition scheme.

- There should be a new EPR 9 that provides for an Employee Assistance Strategy.

8.10 Recommendations

The IAC recommends:

Environmental Management Framework

Include the following changes:

- **Revised EPR B2 (1) (b) to highlight language, accounting, financial and management assistance.**
- **New EPR B2 (1) (c) to confirm regular consultation with the Councils.**
- **New EPR B3 (2) (d) to provide access to professional services.**
- **New EPR B4 (1) (f) to undertake annual impact surveys.**
- **New EPR B4 (1) (g) to provide for a dedicated business liaison manager for Clayton, Glen Waverley and Box Hill.**
- **New EPR B8 to provide the opportunity for voluntary acquisition of business properties, subject to guidelines that may be included in the Business Support Guidelines or Business Residential Relocation Support Guidelines.**
- **New EPR B9 to require an Employee Assistance Strategy.**

These changes are included at Appendix G.

Business Support Guidelines

Review and update the Business Support Guidelines to:

- **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.**

Specific Controls Overlay 14

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.

8.11 Overall conclusions on business and retail

Subject to the recommendations of the IAC, there are no business or retail impacts that preclude the Project being approved or the evaluation objective being achieved.

9 Contaminated land and spoil management

9.1 Introduction

Contaminated land and spoil management is discussed in:

- EES Technical Summaries:
  - Contaminated Land
- Technical Appendices:
  - F.1 – Contaminated Land Existing Conditions
  - F.2 – Contaminated Land Impact Assessment
  - F.3 – Contaminated Land Figures Folio
  - F.4 – Contaminated Land Primary Data
  - M.1 – Human Health Existing Conditions (related aspects)
  - M.2 – Human Health Impact Assessment (related aspects)
  - B.1 – Air Quality Existing Conditions (related aspects)
  - B.2 – Air Quality Impact Assessment (related aspects).

The contaminated land and spoil management evaluation objective is:

> 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.

As exhibited, the EES proposed five mitigation measures in the EPRs, to manage Project related to contaminated land and spoil management. These included:

- EPRs: C1 – C5.

In response to the IAC's 'Questions on Notice' to Dr Coutts from 7 March 2022, the Proponent provided the following TN:

- TN21 Expert Witness Coutts, Responses to Questions on Notice.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN34 - Response to IAC questions to Dr Cowan (D433)
- TN35 - Response to IAC questions to Dr Jackie Wright (D441)
- TN40 - Metro Tunnel Project summary audit report update (D489)
- TN41 - Importation of Contaminated Spoil to Stabling Facility (D510)
- TN50 - Response to EPA Submission - landfill gas assessments (D745).

Additionally, the IAC had regard to relevant submissions and evidence. Table 5 lists the contaminated land and spoil management evidence and cross-related evidence.

Table 5 Contaminated land and spoil management evidence

Party	Expert	Firm	Area of expertise
Proponent	David Coutts	Aurecon	Contaminated Land
Proponent	Iain Cowan	Tonkin + Taylor	Air Quality - contamination)
Proponent	Jackie Wright	EnRisks	Human Health Risk Assessment - contamination

Kingston	David Ife	EHS Support	Groundwater - contamination

9.2 Project wide

9.2.1 What did the EES say?

Across the alignment, 340 investigation bores were placed, followed by extensive laboratory analysis of soil, groundwater and soil vapour. The majority of detected contaminants were below nationally recognised 'Investigation Guidelines' [104] suggesting these did not pose significant human health or environmental risk. Testing results for Cheltenham and the Stabling Facility showed these sites would require additional risk mitigation measures.

Groundwater drawdown from construction could mobilise existing chemical contamination plumes, or increase acid sulfate occurrence, particularly at stations or tunnel cross passages where more immediate tunnel sealing cannot easily occur. Additional mitigation measures are proposed for these situations.

The following Project plans and protocols are proposed:

- Contaminated Land Management Plan
- Sampling Analysis and Quality Plans
- Remedial Options Assessments
- Remedial Action Plans
- Hazardous Ground Gas Management Plans
- Spoil Management Strategy (SMS) with future Spoil Management Framework (SMF) and Spoil Management Plans (SMP)
- Potential Acid Sulfate Soil and Rock (ASS/ASR) Management Plan
- Contingency and Unexpected Finds Plans (CUFP)
- Operational Environmental Management Plan
- Environmental Management Plans (EMPs).

The key issues to be resolved are:

- landfill leachate and associated LFG risk
- potential for the migration of groundwater contamination plumes (groundwater/soil vapour).

9.2.2 Evidence and submissions

Dr Coutts prepared the main four documents related to Technical Appendix F, however, he did not prepare the SMS. He noted the EES was prepared cognisant of the *EP Act*, its subordinate Regulations and the related GED. He indicated the extent of EES investigations was detailed and sufficient, to enable contamination risks and impacts to be suitably considered. He noted the exhibited EMF addressed these general identified contamination risks, where for Cheltenham and the Stabling Facility, additional mitigation measures were included in the EMF.

[104] National Environmental Protection Council. National Environment Protection (Assessment of Site Contamination) Measure (NEPM-ASC), 1999 & Amendment May 2013.

Kingston raised the following issues:

- some recent major infrastructure projects in Melbourne that demonstrated difficulty with management of large amounts of spoil derived from road projects and urbanised areas
- potential use of the 'Compliance Code for Victoria's Big Build', under which several major Melbourne infrastructure projects currently operate (Kingston did not seek this for the Project).

Kingston called for a supplementary EES for spoil management, identifying:

- temporary spoil treatment and storage
- appropriate measures to minimise risk of harm to human health and the environment
- suitable off-site receival facilities and their expected spoil handling capacities [105].

Kingston was concerned the Alex Fraser site (currently defined in the EES as part of the Project site) could, without permission, be used for spoil treatment (i.e. both interim management and permanent storage). It requested (in the absence of a supplementary EES) the Project site area allocated to this land parcel be reduced, to represent a more standard setback distance from the tunnels (consistent with other adjoining land parcels).

In relation to EPR C2, Manningham requested Councils be specifically listed when developing the Contaminated Land Management Plan [106].

The EPA provided 48 recommendations across the EES, including those for contaminated land and risks associated with LFG and groundwater [107]. Prior to the Hearing, it participated in a Technical Reference Group (TRG) convened by DELWP. In its role as the independent regulatory body across various environmental elements of the Project, the EPA reviewed the technical adequacy of various EES components and submitted:

- the importance of a proactive approach to prevent risk of harm to human health and the environment from pollution and waste (through the EP Act, its matched Regulations and the GED)
- detailed review and comment across the updated EMP and EPRs
- its Recommendation 8 (new EPR request: LFG migration appraisal and control for tunnels and off-site buildings) had not been adopted by the Proponent
- its Recommendations: 11, 12 and 14 had been adopted in part by the Proponent:
  - 11: LFG migration appraisal ('worst case'): former Bennettswood Landfill (Burwood)
  - 12: additional EPR requests related to acid soil and rock management
  - 14: application and understanding of the concept of 'So Far As Reasonably Practicable' from the *EP Act* [108]
- the general EMF/EPR structure was appropriate for the Project.

Referring to questions from Kingston (D699), the EPA stressed applicability of the Big Build Compliance Code to the Project was not considered to be suitable for this Project.

[105] D756
[106] S314
[107] S269, D185
[108] D434

The EPA noted in its closing submission:

- its ongoing membership of the TRG and its importance, for addressing key areas of concern (e.g. LFG and groundwater drawdown)
- with regard to Recommendation 8: *LFG migration appraisal and control*, it was satisfied the risk had been appropriately identified and would be suitably managed through EPRs GW2 and GW3
- EPR C4 requires development and implementation of the Hazardous Ground Gas Management Plans in consultation with the EPA
- with regard to Recommendation 11: *LFG migration appraisal* ('worst case' appraisal) former Bennettswood Landfill (Burwood), the provision of further information by the Proponent (D745) suitably addressed its concerns (i.e. the exposure risk estimate was confirmed as 'low')
- confirmation that previously raised issues for contaminated land had been addressed, together with its associated suggested changes to the Project EMF [109].

The Department of Education and Training (DET) raised concerns about four existing government schools that may be impacted and it recommended the EPRs be amended to require consultation to identify issues and inform the development of final designs [110].

Various submitters raised issues under the following themes:

- emissions from former landfills
- management of contaminated land
- impact of contamination migration (dust, groundwater, LFG)
- migration of contamination via groundwater plumes
- spoil management.

9.2.3 Discussion

In general, the Project alignment runs through relatively benign contamination conditions. Most submissions related to land contamination and LFG concerns within Kingston. Except for Cheltenham and to a lesser extent the Stabling Facility, the proposed station sites generally have a relatively thin, fill ('made ground') layer of typically less than 0.5 to 1 metre thick, which the IAC does not consider would result in any significant risk.

Natural soils at Cheltenham, the Stabling Facility and Clayton are mainly Brighton Group Formation sediments. Certain layers of this formation contain mineralisation of arsenopyrites, which can be acid-forming on disturbance and they may contain higher natural arsenic concentrations. Natural soils for the other stations involve generally weathered siltstone (Anderson Creek Formation). Fresher and deeper (unweathered) portions of the siltstone may prove acid-forming on air exposure (i.e. dewatering), where residual soils derived from the weathering of the siltstone can also be naturally enriched with certain metals/metalloids (i.e. arsenic).

All stations will be constructed into the groundwater table, which will cause groundwater drawdown across construction, such that existing groundwater contamination could be influenced. This risk is more relevant for Cheltenham, the Stabling Facility and the tunnels near Clayton Road South (Heatherton). Connecting tunnels will be constructed through natural soil and rock, where almost all of the tunnel alignment is below the groundwater table. Tunnel spoil may

[109] D765
[110] S264, D59, D417

have naturally higher concentrations of arsenic, certain metals and some inorganics. Acid sulfate soils (Brighton Group 'Black Sands') are found extensively through the proposed tunnel sections from the Stabling Facility to Clayton.

The EES detailed various assessments of contamination exposure risks across the Project alignment and included mitigation measures considered necessary to address these risks. More substantive risks relate to:

- excavation of contaminated fill (significant thickness, up to 3.5 metres, of former gasworks-derived waste fill at Cheltenham and its related air and amenity health impacts to humans [refer to Chapter 9.3])
- processing and disposal of contaminated spoil generated by works at Cheltenham and at other locations along the Kingston alignment (refer to Chapter 9.5)
- potential for LFG migration and exposure to humans, in and around the Stabling Facility (refer to Chapter 9.4)
- LFG disturbance and migration from tunnelling, proposed in the vicinity of Clayton Road South (Heatherton) (refer to Chapter 9.6).

For general Project areas, other than the above cases, the IAC is satisfied the Proponent's recommended EMF will suitably:

- avoid adverse environmental effects from and to the Project from disturbance and handling of contaminated or acid-forming materials
- manage contaminated land aspects and comply with the *EP Act*, its associated regulations and the GED.

9.2.4 Findings

The IAC finds:

- While the assessment of currently identified contaminated land is generally satisfactory, there are identified shortfalls across the methodology and rigour of the EES, primarily related to the Cheltenham and Stabling Facility sites. (see Chapters 9.3 and 9.4)
- For other Project locations, implementation of the EMF, along with required management strategies, plans, and mitigation measures should adequately manage land contamination impacts.

9.3 Cheltenham

9.3.1 What did the EES say?

The excavation for the station box will encounter a significant thickness (3.5 metres) of buried gasworks waste (covered by 2.5 metres of cleaner fill) that originated from the adjacent, former Highett Gasworks. Priority Waste, formerly known as Prescribed Waste (PW) is expected to emit an offensive odour on disturbance. The gasworks waste makes up approximately 20 per cent of all material to be excavated from this location. As well as general construction management measures, additional mitigation measures would be in place during excavation, to address temporary stockpiling and transport of malodorous materials. With these measures in place, the risk of contamination impacting human health and the environment was considered to be low.

The key issues to be resolved are:

- risk of gasworks waste odours and contaminated dust impacts to nearby residents/Southland

- residual contamination groundwater impacts from several, surrounding contaminated areas.

9.3.2 Evidence and submissions

Dr Coutts identified buried fill at Cheltenham up to 3.5 metres in total thickness (covered by a 2.5 metre thick, cleaner filling separation 'cap'). The buried fill (on what was historically gasworks owned land) contains significant amounts of odorous gasworks waste (likely to have been previously sourced from the former Highett Gasworks, located to the immediate north-east).

High concentrations of typical gas works-related waste contaminants (i.e. (PAH), cyanide and certain metals) were found in this waste fill, which could pose a significant risk of harm to human health or the environment upon construction disturbance. Dr Coutts suggested the potential range of mitigation measures summarised within the 'Day 1 EPRs': C1, C2 and C3 could suitably control such risks. He noted in his oral evidence that findings on this aspect of risk control were integrated and reliant upon the findings and recommendations from Dr Wright (Human Health Risk Assessment) and Dr Cowan (Dust Emission Modelling and Air Impact Assessment).

Kingston raised concerns about the disturbance of the former gas works site waste in its original submission.

Dr Coutts discussed potential for sources of nearby groundwater contamination to Cheltenham, which could migrate under construction dewatering influence. He suggested the proposed mitigation measures in the EMF would control such risks to a suitable level.

Mr Ife's evidence indicated the station box construction would result in significant groundwater drawdown to the local area, impacting on several, significant contaminated groundwater plumes within the upper regional aquifer (resulting in potential for the migration of groundwater contamination and associated vapour plumes). He confirmed the proposed mitigation measures for such groundwater contamination examples (i.e. aquifer recharge) could prove effective. He was critical, however, that the EMF mitigation measures were only discussed as 'options' for a future contractor to consider and deploy. He stressed early collaborative design and implementation of such measures would take considerable time. He contended the EMF should clearly indicate responsibility for the design, operation, monitoring and closure of such aquifer contamination mitigation measures.

Several submitters raised concerns about disturbing gasworks waste for the station box placement, including individuals and the Pennydale Residents Action Group. Some of these submitters called for use of a large shed, tent or similar across construction to adequately control emissions of odour, dust and noise.

The IAC raised with Dr Wright:

- the appropriateness of using the median input value, for the assumed input concentration of toxic equivalence quotient of PAH: benzo(a)pyrene in soil excavation, for dust in air predictive modelling, as reported by the EES
- the typical difference in contaminant concentration within a soil sample, compared to the expected higher contaminant concentration within dust from that same soil sample (as particulate size reduces).

Dr Wright provided responses to these IAC questions in TN35.

The Proponent suggested the following risk management measures as being appropriate (through the amended EMF) for construction management:

- additional investigation, sampling and analysis of contaminated soil, groundwater and vapour, to identify the nature and extent of contamination, for SMP development
- avoiding exposing or excavating contaminated soil until as necessary to do so (more significantly contaminated gasworks-derived waste fill is in the top four to five metres from ground surface)
- management of excavation and stockpiles to prevent erosion and run-off, dust and vapour generation and enabling efficient transfer of stockpiled soils to its ultimate destination (it was suggested that stockpiles may need to be temporarily covered, or other odour control measures to be implemented)
- separation of contaminated areas from non-contaminated areas, to minimise worker exposure to contaminated soil
- possible use of a capping layer above construction spoil to divert rainwater infiltration, to minimise contaminants leaching to the subsurface
- diverting stormwater away from excavations or areas with contaminated land or using detention ponds to store/control contaminated water.

The EMF provides for additional contingency controls if required, for odour and dust control (such as additional engineering containment, vapour extraction, vapour barriers).

9.3.3 Discussion

The IAC considers there needs to be additional consideration and planning of construction exposure risk to human health from the significant amounts of buried former gas works waste.

Major nuisance odours derived from gas works waste are notoriously difficult to both predict and manage. Across the last 20 years in Australia, the IAC considers the best practice approach to deal with such odours, involves use of a large covered 'tent' or shed enclosure, with inside air capture (under vacuum influence) and final air treatment/scrubbing at the air point of discharge from the enclosure. The IAC notes that tents or shed enclosures can take some time to procure and set up and are used as a proactive, rather than a reactive measure.

Odour impacts from extensive amounts of waste can prove extremely difficult to predict using any lead-in investigations or risk assessment, and the ERS on odour impacts requires '*the absence of offensive odours demonstrates the environmental value is being met*' [111].

The IAC is also concerned in relation to the exhibited dust in air transport modelling for Cheltenham (a key input, then used for the quantitative Human Health Risk Assessment (HHRA)). This dust in air modelling used a toxic equivalence quotient of PAH: benzo(a)pyrene in soil, for all materials to be excavated from the station.

The IACs concerns relate to human health and odour risks, associated with the disturbance of buried gasworks waste materials at Cheltenham that require a heightened level of conservatism and mitigation. Dust in air transport and linked risk assessment models from the EES may underestimate modelled concentrations of potential contaminants of concern in source dust (i.e. benzo(a)pyrene in soil, a known human carcinogen). Underestimation may have occurred, through the use of a contaminant concentration 'median' input, which considered all dust sources disturbed from future station box excavation to full depth (including significant quantities of surrounding 'clean fill').

[111] EPA Victoria (2021), Publication 1992, Guide to the Environmental Reference Standard, June 2021

The Australian enHealth (2012) 112 risk assessment protocols are a key guideline to be followed, as indicated by the NEPM-ASC and referred to in TN35. The enHealth (2012) guidance supports adoption of a 95th percentile approach, or maximum exposure contaminant value in risk assessment as a first estimate. This adopts the 'Precautionary Principle' to assessment, which if unacceptable, can be subject to further refinement of exposure parameters. With the current assessment, the Proponent assumes a dust in air modelling median input concentration of 2.4 mg/kg for the toxic equivalence quotient of PAH: benzo(a)pyrene in excavated soil. If the buried gasworks waste (a significant 2.5 metre deeper thickness of material) is considered in its own right, a higher median concentration (of the order of 51 mg/kg) applies from the EES soil testing results.

The IAC is concerned about the impact on dust source concentrations for carcinogenic and other former gasworks waste contaminants, as soil particulate size decreases has not been sufficiently considered in the EES in relation to dust migration and human health impacts.

EES Chapter M.2 (Human Health Impact Assessment) indicated if its long-term chronic human health risk modelling input assumptions are out by a factor of 50 or more, human health risk may be of concern. Given the potential differences in assumed input concentrations to the EES risk models, this is of concern to the IAC and warrants the highest level of protection for human health.

9.3.4 Findings

The IAC finds:

- The EES HHRA for dust in air modelling inputs/outputs are not suitably conservative for Cheltenham.
- This may place the surrounding public and construction workers for the Project at risk if relying on the exhibited EMF.
- The more substantive dust and odour in air mitigation contingencies raised in the EMF are likely to take considerable amounts of time to plan and deploy, should nuisance odours or dust subsequently result in a higher risk.
- Given the planned construction of the station box is to use the 'bottom up' method, where the top portion of fill and soil is to be initially excavated (post-placement of the external diaphragm wall support), the proposed initial mitigation measures for the control of odour and dust emissions from disturbance of significant quantities of former buried gasworks waste is considered to be inadequate.
- Excavations through gas works-derived waste fill will require more active covering and air capture/treatment.
- A tent or enclosed shed is recommended as the key mitigation measure to address potential risks associated with disturbance of buried, former gasworks waste at Cheltenham.

9.4 Stabling Facility

9.4.1 What did the EES say?

Construction at the Stabling Facility is expected to disturb subsurface areas, previously impacted by moderately contaminated fill, as well as landfill leachate in shallow groundwater and LFG.

[112] enhealth (2012), Environmental Health Risk Assessment, Guidelines for Assessing Human Health Risks from Environmental Hazards, https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-publicat-environ.htm

Additional mitigation measures are proposed to protect tunnel workers and surrounding areas of human occupation for these areas.

The key issues to be resolved are:

- potential receival of former gasworks waste fill from Cheltenham
- current site soil contamination presence and possible disturbance
- potential sources of Project tunnel and general spoil
- risk of increased LFG exposure from construction surcharging and dewatering.

9.4.2 Evidence and submissions

Dr Coutts advised LFG investigations confirmed low levels of carbon load in the existing fill at the Stabling Facility site [113]. He said, while it was likely surrounding landfills and natural geology shared groundwater, significant landfill leachate dilution was expected to be occurring in the groundwater upon leachate release. As a result, LFG exposure risks were deemed suitably low for the current undisturbed condition.

He advised the proposed mitigation measures in the amended EPRs should control LFG exposure risks to an acceptable level.

Dr Coutts noted updated results from the Proponent's continued site investigations, post exhibition of the EES, had generally matched previous EES findings.

Kingston questioned Dr Coutts, whether consideration was given to the proposed redevelopment of the former (closed) Ball Road landfill (to the west of the site). Dr Coutts indicated, the EES only considered publicly known contaminated sites and future development of the privately-owned Ball Road landfill had not been considered.

In his evidence and in discussing groundwater contamination issues, Mr Ife noted construction work at the two tunnel portals would result in significant groundwater drawdowns to the local area. This would impact groundwater users and the current, plentiful GDEs that rely of the shallow groundwater near this area.

Kingston raised key concerns including construction phase and long-term impacts to the locality, (particularly for residents to the immediate west and south) and the lack of information on proposed Project finished site ground levels.

Kingston recommended there be at least a 50-metre wide separation from the Kingston Walk Linear Reserve to assist it in acting as a 'buffer' to various impacts, including dust and associated contaminants, which the Proponent noted, is being provided.

The EPA noted exposure risk from other landfill derived gases, other than methane, such as carbon dioxide, became more important for this facility, which is an increased risk to be considered and mitigated.

Several submitters discussed the presence of the existing adjacent landfills near the Stabling Facility and various leachate and LFG migration/exposure risks posed by site development disturbance.

The IAC raised with Dr Wright:

- where the qualitative Human Health Impact Assessment had not identified sensitive community sub-groups within close proximity to the site

[113] D81

- nor, where the qualitative Human Health Impact Assessment had researched background health issues for this community.

Dr Wright provided responses to these IAC questions in TN35.

The Proponent proposed the following general risk management measures through implementation of the EMF:

- further investigations to reduce uncertainties with respect to the nature and extent of existing site contamination and LFG/ground gas
- development of a SMP and related CUFP
- preparation of a Hazardous Ground Gas Management Plan covering tunnel and facility construction and operation
- surcharging feasibility studies of placed fill:
  - conducting further LFG investigations across the surcharged area and between the site boundary and any identified sensitive receptors
  - if fill surcharging is proposed and unacceptable LFG risks to nearby receptors are identified, design and construction of suitable hazardous gas mitigation measures to intercept and treat such gases
- implementation of mitigation measures to control groundwater drawdown proposed for the east and west tunnel portals, such as use of deep diaphragm walls.

During the Hearing, the Proponent confirmed most of the Stabling Facility site would be raised-up in the long-term by approximately two metres from the current, general site boundary levels. It confirmed this does not include the likely placement of higher, temporary soil surcharge stockpiles for future placed fill improvement.

9.4.3 Discussion

The Stabling Facility is proposed to be constructed on a former sand quarry (the 'Delta site'), which is currently partially backfilled with sand wash slimes and other general fill. The closed Henry Street landfill is located directly to the north, opposite the Henry Street Linear Reserve. The closed Ball Road private landfill is located to the immediate west of nearby residential areas (Golf View Road and Nicholas Grove), that abut the west site boundary.

The IAC considers there have been limited EES contamination investigations at the site. These investigations have to-date, indicated relatively low to moderate levels of fill contamination, that is, not associated with high organic loads, such as what may be encountered in a putrescible waste landfill, but instead, with more moderate, organic impacts, probably derived from former urban land use [114]. The term 'clean fill site', sometimes used in the EES and at the Hearing, as a general label to this site in that sense, is perhaps, not the best descriptor. The IAC considers additional site investigations may find further, or more significant placed fill contamination.

Groundwater quality around the site was rated in EES as 'poor' (groundwater is likely to be impacted by leachate leakage from the surrounding closed landfills).

Future proposed ground improvement works for existing and new fill at the site (such as surcharging, or similar), or other nearby sites (i.e. former Ball Road landfill) may influence the lateral migration of existing LFG (i.e. methane and carbon dioxide). Therefore contingency mitigation measures to prevent migration of LFG as currently proposed by the EPRs could require

[114] D81, Dr Coutts Evidence

implementation. Dr Coutts was questioned by the IAC on the requirement to collect and treat such intercepted LFG to the requirements of the Victorian EPA Landfill Best Environmental Practice Measures. The IAC notes he only responded to this questioning by pointing to the United Kingdom guidance on LFG [115].

The IAC notes while predictive dust modelling for this site during construction was appraised for three separate exposure scenarios, there has been no corresponding quantitative HHRA undertaken. The IAC is concerned the local residential population to the immediate west and south of the site may be more sensitive to future dust exposures, contaminants in dust and increased vehicle emissions from trucks. The is particularly so given the local area having been previously exposed to prolonged periods of landfilling and civil earthworks across the last 20 to 25 years. This may make the local population more susceptible to new dust exposures, that could be expected to occur across a sustained construction period.

The Human Health Impact Assessment from the EES did not identify sensitive community sub-groups within close proximity to the site, nor did it research background health issues for this community. This more detailed information should have been obtained and considered.

9.4.4 Findings

The IAC finds:

- A further EPR should be provided to complete a quantitative HHRA prior to construction of the Stabling Facility and the final selection of risk mitigation measures. This should consider additional investigations across fill, soil, groundwater, LFG and soil vapour. The HHRA should consider:
  - inputs from all site contamination investigations
  - revised dust exposure modelling for the construction period (including allowance for proposed spoil surcharge piles)
  - dust exposure measurement (baselining) appraisal for the local area, with inputs from this into updated dust modelling
  - specific consideration of local health baselines for the residential population to dust and fume emission exposure.
- The updated HHRA appraisal must be peer reviewed by a suitably qualified and experienced HHRA professional (for example, from EPA's Applied Science Unit).
- For the possible establishment and operation of any future LFG control/mitigation systems, final point sources from such gas capture and treatment systems must treat captured air emissions prior to atmospheric discharge in accordance with EPA Publication 788.3 'Siting, Design, Operation and Rehabilitation of Landfills' (i.e. the Landfill 'BPEM'), August 2015 (or versions as updated).
- Gasworks-derived waste, classed as PW, as excavated from the Cheltenham station site is not to be temporarily or permanently stored at the Stabling Facility site.

9.5 Spoil Management

9.5.1 What did the EES say?

Of the estimated 3.5 million cubic metres of excavation spoil (in-situ) from the combined rail tunnels and aboveground sites, 29.4 per cent is estimated to be classed as PW. This percentage

[115] EPA Victoria Landfill BPEM, Publication 788.3

includes waste acid sulfate materials, normally requiring licensed disposal to off-site landfills/treatment facilities. Most of the produced spoil would aim to be reused, either for the Project, or at other off-site locations.

The key issues to be resolved are:

- the efficacy of, and lack of evaluation rigour for the exhibited SMS
- the risks associated with the onus of responsibility on the future Contractor for SMPs.

9.5.2 Evidence and submissions

Dr Coutts advised the Project spoil will be managed in accordance with the SMS. The appointed contractor must develop a SMP, which includes a CUFP, should construction conditions prove different to those anticipated. The SMS was included in Technical Appendix F.2 to the Contaminated Land Impact Assessment.

Kingston questioned Dr Coutts in relation to:

- the SMS, potential Per-and Polyfluoroalkyl Substances (PFAS) impacts in spoil and how this may class under current EPA Regulations and guidance
- 'EPA Designation – Classification of PFAS-impacted' (20 January 2022) and other related EPA guidance for waste classification and disposal categories [116]
- possible issues with off-site disposal of spoil matching a classification of M270 (i.e. PFAS criteria exceeded).

Dr Coutts advised he had not considered particular aspects related to PFAS and licensed landfills in Victoria, and his knowledge of landfill licensing status and capacity was limited. He confirmed in TN21 he did not know of any Victorian landfill which could receive such M270 waste. In oral evidence, Dr Coutts indicated he was not responsible for the preparation of the SMS and while he had not conducted a peer review of the SMS, he expressed confidence in it on face value, through its methodology and suggested outcomes. (Dr Coutts is listed on the SMS as the 'Verifier').

Kingston questioned Dr Coutts in relation to proposed Temporary Storage Areas (TSAs) for spoil management described within the SMS. Dr Coutts was unaware of any predefined TSAs nominated across the Project construction sites in the EES or SMS.

EES Technical Appendix F.2 states: '*EPA Victoria has indicated that it will develop a determination for Waste Acid Sulfate Soil*'. The EPA indicated this was incorrect and advised waste acid sulfate soil (WASS) is pre-classified as PW (under waste code 'N123'), where a registration activity (L08 – receiving WASS for treatment) has been developed for industry to provide a 'low-burden' pathway for lands to lawfully receive WASS for treatment or amelioration [117]. Such receiving lands are required to obtain a registration to be lawfully authorised to receive this waste. If the WASS is proposed to be strategically re-buried beneath a groundwater table, the receiving land requires an 'A18 Discharge to Aquifer' permit. Where WASS/ASR is required to be disposed to an off-site landfill, the material needs to be received by a landfill, suitably authorised to receive WASS/ASR.

The EPA submitted the SMS was *'limited in detail'* and advised further detailed appraisal is required to assess the potential capacity for waste spoil (both for off-site reuse and disposal facilities) and in consideration of the cumulative effects from other major projects [118]. This more

[116] D321
[117] D434
[118] D434

detailed appraisal is to be covered by further spoil management documents for the Project (such as the SMF and its related SMPs).

The EPA noted the *EP Act's* Regulations provide for management of TBM spoil on an ongoing basis. An EPA permit (L09) may be sought for disposing of TBM spoil. The EPA submitted the Proponent had indicated there would be no requirement for an L09 Permit. Instead, the EPA indicated the Proponent intends to pursue appropriate site re-use opportunities for spoil, or (if appropriate, where re-use opportunities are not available) to dispose of excess spoil at off-site facilities already licensed, or permitted to receive and dispose of such waste[119].

Kingston and EPA suggested a lack of clarity within the EES and SMS regarding the use of various defined Project sites to manage spoil taken from other Project sites.

The EPA provided comments about the SMS and the EES and indicated all previously raised issues for spoil management had been addressed through changes to the EMF.

In closing, the Proponent commented

- '*a relatively small proportion of the spoil is anticipated to contain PFAS at elevated levels*'
- PFAS-contaminated spoil from the Westgate Tunnel Project is presently being disposed of at the Hi-Quality facility at Bulla
- '*it is not SRLA's intention that contaminated spoil generated at other construction sites will be transported to and processed at the Stabling Facility*'
- the landowners of Lantrak and Alex Fraser sites could only utilise these sites for long-term placement of Project spoil in accordance with their operating licences[120].

9.5.3 Discussion

For the estimated 3.5 million cubic metres of spoil to be excavated from Project tunnels and stations, there has been a reasonable amount of soil investigation data collected for the EES to allow the Proponent to provide a suitable preliminary waste classification estimation [121]. The IAC understands and accepts the current soil and groundwater investigations across the Project alignment are at a preliminary phase, and, as updated, or new land history data sources are identified, these will be further accounted for by targeted investigations.

Waste generated as part of construction and operation of the Project, including waste spoil (spoil not reused on-site), must be managed in accordance with the *EP Act* and its associated Regulations. Further, across Project construction:

- approximately 26 per cent of spoil (0.92 million cubic metres) will be WASS, or ASR from tunnels and stations, which classes as a specific type of PW
- excluding WASS/ASR, approximately 3.4 per cent of spoil will class as other PW (i.e., across various PW Categories 'A, B, C, and D'), with most of this derived from Cheltenham station
- the remaining spoil balance (approximately 71 per cent) is expected to class as 'Fill Material' under EPA Publication 1828.2, 'Waste Disposal Categories – Characteristics and Thresholds'.

The IAC accepts there would be an ongoing process with the EPA for Project spoil management, where pending sub-Management Plans under the SMS are to be developed and reviewed by the

[119] D434
[120] D775
[121] As a 'banked', or 'in-situ' volume.

EPA, with a particular focus on spoil re-use. In relation to the potential pass through of spoil at the Stabling Facility during construction:

- approximately 34 per cent of total Project spoil (including that derived from Cheltenham, the Stabling Facility and the component adjoining tunnels to these facilities) may pass through the Stabling Facility for proposed spoil management, of which only six per cent is estimated to class as PW (if WASS/ASR is excluded from the PW estimate)
- if WASS/ASR is included in the above estimate, the PW proportion is higher (at 52 per cent)
- remaining spoil volumes from the Project are not planned to be sent to the Stabling Facility.

The Proponent indicated in its closing submission '*SRLA wishes to make clear that it is not SRLA's intention that contaminated spoil generated at other construction sites will be transported to and processed at the Stabling Facility*' [122]. This is supported by the IAC and should be captured in EPR C3 with appropriate consideration of waste types.

The IAC is concerned there are several unknown risks associated across the various assumptions and limitations made in the SMS. The IAC notes the SMS is a key document based on a reference design, where the responsibility for Project spoil management is planned to be transferred to a future, yet-to-be appointed contractor (to finalise the linked SMF and various SMPs for sites across the Project sites).

Should future Project spoil waste be found by relevant EPA publications to match a classification of M270, the IAC notes there may potentially be difficulty in arranging an off-site facility in Victoria that is suitably licensed to take this waste within the required Project timeframes (if not suitably pre-arranged).

9.5.4 Findings

The IAC finds:

- There is a lack of detail, evaluation and efficacy with elements of the exhibited SMS.
- The Proponent, EPA and future contractors need to work in continuous 'lock-step' through the approvals process for future spoil management for all Project sites.
- Excavated former gas works waste fill from Cheltenham station should not be taken to the Stabling Facility (or other Project sites) for stockpiling, treatment, or final disposal.

9.6 Rail Tunnels – Clayton Road Landfills

9.6.1 What did the EES say?

Tunnel sections near Clayton Road South (Heatherton) are expected to disturb subsurface areas, previously impacted by landfill leachate and LFG. Additional mitigation measures are proposed to protect tunnel workers and surrounding areas of human occupation for these areas.

The key issue to be resolved is:

- risk of increased LFG exposure from tunnel construction (surrounding landfills).

[122] D775

9.6.2 Evidence and submissions

Dr Coutts responded to submitters who expressed concern about potential adverse impacts from LFG and dissolved methane in the subsurface for this area. EES updates from the Proponent's investigations near the southern portion of Clayton Road were described by Dr Coutts. He advised the further investigations since publishing the EES reinforced the previous findings. Although it was likely that surrounding landfills at this area and natural geology shared groundwater exchange, he noted significant leachate dilution was thought to be occurring in the groundwater.

The EPA in its Recommendation 8, called for a new EPR, for LFG migration appraisal and control for tunnels and off-site buildings [123]. In closing, the EPA advised supplementary information tabled in D745, indicated the estimated low risks associated with this recommendation. The EPA agreed with this updated risk appraisal and agreed the associated mitigation measures were sufficiently captured across EPRs (GW2, GW3 and C4) [124].

Risks from the closed or operational landfill facilities near this area were raised by several submitters.

The Proponent responded to the EPA's discussion of 'Recommendation 8', that monitoring and mitigation of LFG migration will be an important component of the environment management regime for the Project. In this regard, the IAC accepts that TN50 suitably addresses the potential risk for methane and other ground gases to enter into either the tunnels or tunnel cross-passages during construction (the risk was rated to be suitably low by the Proponent). The Proponent indicated the potential for LFG migration to occur in the vicinity of the tunnelling or cross-passage works from groundwater drawdown with construction would be appropriately monitored and mitigated through EPRs: GW1, GW2, GW3 and C4.

The EPA confirmed following consideration of these issues, Recommendation 8 was suitably addressed.

9.6.3 Discussion

The IAC notes the tunnelled section in the southern portion of Clayton Road passes close to several landfills, some of which are now closed and some of which may not have modern well-engineered lining systems. As such, groundwater quality is likely to have been influenced from these landfills from landfill leachate impact. Dr Coutts indicated in his evidence, current Project soil testing investigations do not however, show any significant influence of landfill leachate on soil quality through the Project tunnelling zones for this same area.

The IAC considers construction of tunnel cross passages may require additional mitigation measures (through a combination of monitoring and mitigation) to manage risks from likely, local groundwater drawdowns and tunnel inflows of groundwater containing dissolved LFG (where the main associated gas risk comes from methane). The Proponent suggested mitigation measures in the revised Day 4 EPRs would control such risks to a suitable level.

The IAC is satisfied the Project reference design, the EMF and related EPRs suitably address contaminated land and LFG risk associated with the rail tunnels for the southern portion of Clayton Road, Heatherton (and for other Project locations, where LFG or landfill leachate in groundwater poses a concern).

[123] D434
[124] D765

9.6.4 Findings

The IAC finds:

- The proposed mitigation measures suitably address contaminated land and LFG risk associated with the rail tunnels.

9.7 Recommendations

The IAC recommends:

Environmental Management Framework

Include the following changes:

- **New EPR C7 to require suitable air cover and treatment controls at the SRL Cheltenham station.**
- **Revised EPR C3 (1) to require EPA review and acceptance of an updated Spoil Management Strategy and review and acceptance of the Spoil Management Framework and all Spoil Management Plans.**
- **Revised EPR C3 (2) to regulate temporary spoil storage for gasworks-derived waste fill.**
- **Revised EPR C4 (2) to require treatment of air emissions in accordance with EPA Publication 788.3 'Siting, Design, Operation and Rehabilitation of Landfills'.**
- **New EPR C8 to require a quantitative Human Health Risk Assessment be completed, prior to construction at the Stabling Facility.**

These changes are included at Appendix G.

9.8 Overall conclusions on contaminated land and spoil management

Subject to the recommendations of the IAC, there should be no impacts from contaminated land and spoil management that preclude the Project from being approved or the evaluation objective being achieved.

10 Greenhouse gas emissions and resource efficiency

10.1 Introduction

Greenhouse gas (GHG) emission and resource efficiency is discussed in:

- EES Technical Summaries:
  - Greenhouse Gas
  - Attachment H – Sustainability Objectives and Targets (October 2021)
- Technical Appendices:
  - I.1 – Greenhouse Gas Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed 10 mitigation measures in the EPRs, to manage the impacts of the Project on GHG emissions and resource efficiency. These included:

- EPRs: SGG1 – SGG10.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TN:

- TN23 - Greenhouse Gas Requests for Information (D383).

Additionally, the IAC had regard to:

- relevant submissions and evidence
- Attachment H of the exhibited EES: 'Sustainability Objectives and Targets'.

Table 6 lists the GHG emission and resource efficiency evidence.

Table 6 Greenhouse gas emission and resource efficiency evidence

Party	Expert	Firm	Area of expertise
Proponent	James Wilkinson[125]	Jacobs	GHG & Sustainability

10.2 Project wide

10.2.1 What did the EES say?

GHG emissions from Project construction and operation are expected to contribute less than 0.2 per cent of Victoria's average annual emissions. The Project provides a suitable focus for reducing waste and efficient use of energy and resources.

Construction is estimated to result in a marginal increase to the Victorian and Local Government Area (LGA) emissions profiles out to 2030. A range of future mitigation measures to reduce construction emissions are still to be investigated, where current Project emission estimates do not account for such anticipated further reductions.

[125] Evidence was filed, but not called at the Hearing

Year 1 Project operation produces an estimated decrease of 14,200 tonnes of equivalent carbon dioxide emissions (t CO_2e), equating to a decrease in emissions of 0.1 per cent for the Greater Melbourne area (despite the expected increase in Melbourne's transportation capacity from the Project).

The Project's impact on the urban heat island effect and how the Project responds to this, is covered in Chapter 7. Elsewhere through the EES, there was relatively minor examination and comment about other aspects of GHG and sustainability.

The key issue to be resolved is:

- whether there will be advisers impacts from GHG emissions.

10.2.2 Evidence and submissions

Mr Wilkinson prepared Technical Appendix I.1- EES GHG Assessment and he was a peer reviewer of the main EES GHG chapter.

The Proponent submitted GHG emission estimates from Project sources along the alignment which considered both construction and operational phases, appraising both direct and indirect emissions, based on various emission factors (used as a proxy measure for each unit of activity [i.e., equating back to t CO_2e]).

The assessment considered:

- effects of induced Project changes to the wider Melbourne transportation network, via the Victorian Integrated Transport Model (VITM), as per the assessment methodology discussed in Chapter 15
- State government future commitments to the use of trains, powered by renewable energy, adoption of 'zero emission' road buses, the expected increase in use of electric vehicles and the general decarbonising of the Victorian electricity grid.

The assessment considered 'with or without scenarios' for the Project to 2036 (the first year of Project operation).

The Proponent discussed the assessment methodology, where since EES exhibition, there were some updates to the publicly available information sources used for the emissions estimates (which includes rates of electric vehicle adoption and projected estimates for the rate of emissions intensity reduction for the Victorian electrical grid). These changes resulted in:

- further reduction in total emissions of 70,711 t CO_2e, or 3.2 per cent of the total emission footprint from the Project, as was reported from the EES (or, 3.2 per cent less)
- a slight reduction (approximately 15 per cent) of predicted transport mode shift benefit for Year 1 operation.

The Proponent suggested these changes did not significantly alter the primary findings of the GHG assessment, considering the Project's overall total lifetime emissions footprint.

All Councils indicated the Project is of a very significant scale and matched general impact to their LGAs.

Kingston contended the substantial elements it suggested for the Project's design for Cheltenham and the Stabling Facility to mitigate such impacts (including design elements across GHG, urban heat island and water sustainability) had been essentially ignored by the Proponent. It requested the introduction of the green roof infrastructure concept for the Stabling Facility be further considered (for example, through the UDS).

Bayside and Kingston both called for securing the provision of 100 per cent renewable energy across all Project construction and operational phases.

Bayside sought suitable emissions reduction targets be introduced in the EMF, with annual reporting of progress across construction and operation.

Monash raised the potential for an increase in GHG emissions from tree loss, with a request to expand EPR SSG1 to cover trees, urban heat island, water management and climate change resilience (as did some other submitters).

Bayside, Kingston and Monash all called for suitable design and procurement of low carbon materials and recyclable materials as a priority.

Prior to the Hearing, EPA participated in the Project TRG convened by the DELWP. EPA served in this role as the independent regulatory body across various environmental aspects, where it reviewed the technical adequacy of the various EES technical reports. This included review and comment across the EMF (D434). EPA indicated:

- GHG emissions may create a risk of harm to human health or the environment, as they contribute to an increase in climate change risks
- the method and approaches outlined in the EES for the impact assessment were appropriate.

EPA advised that as the Project progresses, it will be considering impacts of climate change in its decision making on permissions and licences.

The Proponent proposed changes to EPR SGG1, in response to submissions on the Project's mitigation commitments and public reporting. This related to development of sustainability targets for reducing GHG emissions, minimising and managing waste, minimising potable water consumption and achieving sustainable use of resources so far as reasonably practical, across design, construction and operation. Such targets were proposed to be consistent with the report prepared by the Proponent, 'Sustainability Objectives and Targets' (October 2021), or possibly an equivalent set of targets, where the progress of achieving these is to be publicly reported across construction and operation. Sustainability targets currently proposed include:

- Leadership
- Energy and carbon
- Water
- Materials and waste
- Transport and mobility
- Community and social legacy
- Health and wellbeing
- Environmental enhancement and protection
- Resilience and climate change.

Other submitters raised general concerns, including:

- aiming for carbon neutrality for the Project under 'full carbon accounting' (S263)
- use of Australian offset projects for offsetting residual carbon across construction, (Deakin University, D251)
- locally sourced construction materials to be given priority (D259).

10.2.3 Discussion

The amended EPRs proposed by the Proponent would reduce the impact of GHG 'so far as reasonably practical' to meet the GED.

The further refined, proposed sustainability rating schemes adopted by the Project, post exhibition of the EES (e.g., the Infrastructure Sustainability Council Infrastructure Sustainability rating tool and the Green Building Council Australia (GBCA) rating tool 'Green Star Buildings') are generally considered as 'best practice' in Australia. EPRs SGG3, SGG4 and SGG6 have been adjusted to introduce these as follows:

- SGG3 which relates to the main tunnels works and relevant elements of the Stabling Facility must achieve sustainability outcomes aligned to a minimum 'Gold' rating under the ISC-IS rating [126]
- SGG4 which relates to 'stations', must achieve a Green Star rating of ≥ 5-star (certified to the GBCA rating tool Green Star Buildings) [127]
- SGG6 which relates to the Stabling Facility Operational Control Centre, must achieve a Green Star Rating of ≥ 5-star (certified to the GBCA rating tool Green Star Buildings). The IAC notes SGG5 applies for the Stabling Facility Operational Control Centre, where it must achieve a certified National Australian Built Environment Rating System (NABERS) sustainability rating to ≥ 6-star [128].

The IAC accepts the Proponent's closing submission, which noted, apart from the urban heat island effect, there was little disagreement on GHG through submissions and the Hearing.

10.2.4 Findings

The IAC finds:

- The proposed EMF will provide an appropriate basis to achieve the EES evaluation objective relevant to GHG emissions, reduced waste usage and ensure the efficient use of resources.

10.3 Overall conclusions on greenhouse gas emissions and resource efficiency

There are no greenhouse gas emissions or resource efficiency impacts that preclude the Project being approved or the evaluation objective being achieved.

[126] ISC IS rating tool to Version 2.1.
[127] GBCA rating tool to Version v1A.
[128] NABERS is a sustainability measurement tool across such building sectors applicable to offices and data centres.

11 Landscape, visual, recreational values and built form

11.1 Introduction

Landscape, visual, recreational values and built form is discussed in:

- EES Technical Summaries:
  - Landscape and Visual
  - Land Use Planning
- Technical Appendices:
  - N.1 – Land Use Planning Existing Conditions
  - N.2 – Land Use Planning Impact Assessment
  - O.1 – Landscape and Visual Existing Conditions
  - O.2 – Landscape and Visual Impact Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed seven mitigation measures in the EPRs to manage the impacts of the Project on landscape, visual, recreational values and built form. These included:

- EPRs: LV1 – LV7.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN06 - Urban Design Panel and Public Open Space Expert Panel (D234)
- TN26 - Zone and aerial plans of Stabling Facility (D402)
- TN33 - Draft Public Open Space Framework (D432)
- TN46 - Uniting AgeWell, Box Hill (D726).

Additionally, the IAC had regard to:

- relevant submissions and evidence
- Attachment G of the exhibited EES: Public Open Space Framework (POSF)
- Attachment B and B1 of the exhibited EES 'Urban Design Strategy' and Urban Design Strategy Peer Review report'.

Table 7 lists the landscape, visual, recreational values and built form evidence.

Table 7 Landscape, visual, recreational values and built form evidence

Party	Expert	Firm	Area of expertise
Proponent	Hayden Burge [129]	Landform Architects	Landscape
Proponent	Ronald Jones	Jones & Whitehead	Urban design
Proponent	Michael Barlow	Urbis	Land use planning
Monash	Craig Czarny	Hansen Partnership	Landscape and urban design

[129] Evidence filed but not called at the Hearing

Whitehorse	Craig Czarny	Hansen Partnership	Landscape and urban design
Whitehorse	David Barnes	Hansen Partnership	Land use planning
Kingston	Claire Martin	Oculus	Landscape
Kingston	Gerhana Waty	Hansen Partnership	Urban design

11.2 Project wide

11.2.1 What did the EES say?

The EES found that landscape and visual impacts would be confined to above ground works and be more pronounced during construction rather than operation. Operational impacts would principally be addressed through future, more detailed planning processes and through the implementation of the UDS.

Open space, recreational and public realm impacts would be confined to above ground works and would occur during construction and operation. Key impacts would be associated with temporary and permanent loss of open space, including the Sir William Fry Reserve, planned open space at the Stabling Facility, the Remembrance Garden at Clayton, Sinnott Street and Gardiners Creek Reserves at Burwood and Box Hill Gardens at Box Hill.

Impacts would be addressed through the provision of replacement open space and implementation of the POSF and UDS.

The key issues to be resolved are:

Project Wide:

- replacement open space
- role and adequacy of the POSF (including Council involvement in the POSEP and Ministerial approval)

11.2.2 Replacement public open space

(i) What did the EES say?

The EES acknowledged the impacts associated with the temporary and permanent loss of open space and proposed various mitigation measures. These include general guidance about the provision of replacement open space in EPR LUP4, the implementation of the overarching POSF and UDS (required under the SCO14 ID) that were exhibited with the EES and the future preparation of place-specific Public Open Space Management Plans (POSMP).

(ii) Evidence and submissions

The Proponent generally supported the relevant elements of the exhibited EES but recommended various changes following its consideration of submissions and evidence, particularly the evidence of Mr Barlow.

Mr Barlow highlighted the relevance and significance of the following strategy in Clause 19.02-6S (Open Space) of the Planning Policy Framework (PPF):

> Ensure that where there is a reduction of open space due to a change in land use or occupation, additional or replacement parkland of equal or greater size and quality is provided.

Mr Barlow recommended EPR LUP4 be modified to reflect this strategy and that it be the '*…starting point for the mitigation of the permanent or long-term loss of open space*' [130]. He provided a redrafted LUP4 to reflect this, but limited it to the '*permanent*' loss of open space and included the qualification that replacement open space be provided where '*reasonable and practicable*'. Under cross examination, he agreed this qualification should be deleted. Mr Barlow recommended the POSF include a cascading set of additional principles to mitigate the loss of open space at the Box Hill Gardens and Sir William Fry Reserve. The Proponent included these revisions in its final EMF and POSF.

Kingston, Monash and Whitehorse supported the intention to reflect Clause 19.02-6S in the revised EPR LUP4 but opposed the Proponent's caveat that it only apply where reasonable and practicable. They sought associated changes to the POSF in relation to the treatment of open space impacted for 18 months or longer and the area within which replacement open space should be identified [131].

(iii) Discussion

The IAC agrees with Mr Barlow that Clause 19.02-6S of the PPF should be the starting point for considering replacement open space. Notably, the Clause does not include the qualification that it only be provided where '*reasonable and practical*'. The IAC considers this should not be the approach adopted for the Project. The loss of open space will be a highly significant Project impact that will be felt during the construction and operational phases. The provision of replacement open space will be a key factor in the Project's longer term success and community benefit. There will be challenges in identifying and securing replacement areas, but it is critical this impact be appropriately mitigated. The IAC believes the EMF and POSF should accurately reflect this State-wide strategy and the Project should have a clear and unambiguous commitment to its implementation.

Mr Barlow's recommended version of LUP4 sought to limit the provision of replacement open space to mitigate 'permanent' loss, although his evidence report also referred to 'long-term loss'. The IAC agrees with the Councils that the long-term loss of open space is a relevant consideration in determining which open space should be replaced given the extent and duration of the impacts on some of these areas. This is discussed later in this chapter in relation to specific sites.

The IAC's recommended versions of the EPRs and POSF include changes to reflect these findings, together with various consequential changes necessary to implement them.

(iv) Findings

The IAC finds:

- The provision of replacement open space should be consistent with Clause 19.02-6S (Open Space) of the PPF.
- Replacement open space should be provided for the temporary loss of open space, where justified by the extent and duration of the displacement.

[130] D73
[131] D752

11.2.3 Public Open Space Framework

(i) What did the EES say?

The EES included a draft POSF required to be prepared under EPR LUP4. The POSF is to be approved by the Proponent after receiving advice from the POSEP.

The draft POSF includes overarching principles and objectives, requires the preparation of location specific POSMPs and includes a table that describes the impacts, objectives and stakeholders for impacted open space areas.

The POSEP would be established in accordance with the POSF, chaired by an independent expert and comprise independent experts with specialist expertise in open space, urban design, community consultation and landscape architecture. It would consult with stakeholders including Councils, the community and users of the open space.

(ii) Evidence and submissions

The Proponent recommended various changes to the POSF and associated mitigation measures following its consideration of submissions and evidence. The key changes included references to replacement open space previously discussed, referencing the POSEP in SCO14 ID, the POSEP consultation arrangements and various place-specific changes.

Kingston, Monash and Whitehorse sought changes to the exhibited SCO14 ID and other approval documents, including:

- a requirement that Councils be represented on the POSEP in respect of land within their municipalities
- the inclusion in the SCO14 ID of the 'key principles' to be addressed in the POSF
- requirements that the POSF be approved by the Minister and be subject to amendment limitations.

The Councils sought further changes in relation to specific sites (discussed later in this chapter), including changes to EPR LUP4 that would specify matters to be addressed in the POSMPs.

(iii) Discussion

Council involvement in the POSEP

The Proponent was satisfied the proposed consultation arrangements were adequate and noted various practical concerns and impediments to Council membership of the POSEP. It included a new reference to the establishment and composition of the POSEP in its final SCO14 ID. The Councils submitted their role as open space managers and the importance of successfully mitigating open space impacts warranted their membership on the POSEP, albeit confined to issues within their municipalities.

The mitigation of open space impacts, including the identification of replacement areas and the treatment of areas that will be impacted during construction is a key issue. The success or otherwise of the relevant mitigation measures will be an important factor the Project's successful delivery and community benefit. The IAC believes the Councils should have a key role in this process as open space owners and managers on behalf of their communities and this should be better reflected in the Project. In fact, the IAC believes the limited opportunities for direct Council involvement in the POSEP (and UDAP) is a significant shortcoming in the exhibited EES.

For these reasons, the IAC recommends the Councils be members of the POSEP in relation to the open space within their municipalities. This will require changes to the POSF and SCO14 ID that have been included in the recommended versions at Appendices H and F respectively. The detail of how this might be arranged and managed are matters for the Proponent in consultation with the Councils.

Referencing the POSF in the SCO14

The Councils sought to elevate the status of the POSF by seeking a reference to it in the SCO14 ID, together with a description of the key principles it is intended to address. As noted, the Proponent included a reference to the POSEP in its final SCO14 ID but did not include the additional material sought by the Councils.

The IAC considers transparency of SCO14 ID would be improved and the important role of the POSF better acknowledged if it described its purpose as well as the membership of the POSEP.

The relevant changes are in included in the recommended SCO14 ID at Appendix F.

Ministerial approval of the POSF

The Councils submitted the POSF should be approved by the Minister for Planning under SCO14 ID, consistent with similar requirements for the UDS and Urban Design and Landscape Plans (UDLP). The Proponent did not support this approach.

The POSF is the key document that will determine the Project wide and place-specific open space mitigation measures, and inform other important processes such as the UDS, UDLP and precinct planning. Given the significance of open space impacts and the key role of the POSF in mitigating these, the IAC is satisfied that it should be approved by the Minister for Planning. This is consistent with the requirements relating to the UDS and UDLPs.

The relevant changes are included in the recommended SCO14 ID at Appendix F and are based on similar provisions relating to the UDS.

EPR LUP4 and future Public Open Space Management Plans

The Councils submitted EPR LUP4 should specify matters to be addressed in future POSMPs. The IAC believes these matters need only be referenced in the POSF and including them in LUP4 would be unnecessarily repetitive.

Further review of the POSF

MTTY noted identification of public open space in POSF Figure 2 had various errors, particularly in relation to the boundary of the Stabling Facility site where open space seems to have been identified on the basis of vegetation cover rather than function or ownership.

Whitehorse submitted the Whitehorse Road Linear Reserve (included in the POSF description of affected open space areas) should be referenced in the POSF summary table.

The IAC notes these submissions and recommends the Proponent review the accuracy of all the open space maps and open space area calculations in the POSF. The POSF should include a reference to the Whitehorse Road Linear Reserve in the summary table.

(iv) Findings

The IAC finds:

- Implementation of the POSF and the role of the POSEP will be key factors in mitigating open space impacts.
- Kingston, Monash and Whitehorse can make significant contributions to open space mitigation measures and should be members of the POSEP.
- The POSF and POSEP should be referenced in the SCO14 ID, including a requirement that the Minister for Planning approve the POSF.

11.3 Cheltenham

11.3.1 What did the EES say?

The Project will impact on 4.37 hectares of the Sir William Fry Reserve (51 per cent of the total park area) during construction. This includes 0.4 hectares of active open space (skate park and half-court basketball) and 1.14 hectares of passive open space that will be permanently lost. The key mitigation measures include the provision of replacement open space and the relocation of active recreation facilities. The UDS includes various Project wide and place-specific requirements, including requirements for Cheltenham Station and the Reserve.

The key issue to be resolved is:

- replacement of public open space lost within the Sir William Fry Reserve.

11.3.2 Evidence and submissions

The Proponent submitted impacts on the reserve would be effectively mitigated, particularly by the provision of replacement open space, and reduction in its overall area would not compromise its utility or role. Mr Barlow was satisfied the impacts on the Sir William Fry Reserve could be mitigated.

Kingston highlighted the important regional role of the Sir William Fry Reserve and the area that would be permanently lost. It sought:

- an increase in the 'public realm' elements of the Cheltenham Surface and Tunnel Plan
- installation (replacement) of a regional level skate park and half-court basketball facility
- enhanced passive open space areas, including replacement open space on nearby land (preferably on the former Highett Gasworks land).

Kingston proposed extensive changes to the draft POSF and EPR LUP4 to address these and other concerns (D656).

Bayside expressed concerns about the loss of open space within the reserve and the lack of certainty about where replacement open space would be provided.

Other submitters expressed similar concerns about the loss of open space and either sought a reduction in the area that would be impacted or the relocation of the station.

11.3.3 Discussion

The IAC acknowledges the loss of open space within the Sir William Fry Reserve would be a significant impact, particularly during construction when a large area will be temporarily unavailable. The loss of open space once the Project is constructed would be less significant and can be effectively mitigated through the provision of replacement open space and the relocation of active recreation facilities. The IAC does not agree with submitters the appropriate mitigation measure is to locate the station elsewhere, outside of the Reserve.

The IAC has reviewed the matters raised by Kingston and its proposed changes to the POSF (particularly the Summary Table). The IAC supports some of these changes and has included them in its recommended POSF at Appendix H. Others are beyond the scope of the Project or entail an unnecessary level of detail.

The IAC agrees with Kingston the former Highett Gasworks site is an appropriate candidate for replacement open space (as noted in TA N.2) and this should be referenced in the POSF. The IAC recommends replacement open space be provided before construction commences and has included this in the recommended POSF at Appendix H.

As discussed in Chapter 12, the IAC agrees with Kingston (and many other submitters) that the 'sites subject to future precinct planning' in the Surface and Tunnel Plans should not be interpreted solely as development footprints and could provide opportunities for enhancing and/or enlarging the public realm. This is applicable to Cheltenham and the Sir William Fry Reserve.

11.3.4 Findings

The IAC finds:

- 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.

11.4 Stabling Facility

11.4.1 What did the EES say?

The EES Map Book included a construction plan and an indicative operational layout plan with the notation:

> Potential stabling facility layout assessed for EES purposes. Future Design subject to operational requirements [132].

The Surface and Tunnel Plan included in the exhibited SCO14 ID identified the site but provided little guidance about how it might be developed, other than to identify the tunnel portals, the mainline tracks and various pedestrian and cycling paths.

The key issues to be resolved are:

- design of the Stabling Facility.

11.4.2 Evidence and submissions

The Proponent advised the detailed design of the Stabling Facility was yet to be completed, but outlined the key parameters that would inform its design and layout, together with the guidance documents that would inform the design, including the EMF and UDS. The EMF included design EPRs relating to visual screening, revegetation and various environmental impacts. The UDS included various place-specific requirements relating to integration, connectivity, environment and buildings and structures.

The Proponent recommended various minor additions and changes in response to submissions and evidence, including a revised Surface and Tunnel Plan that included landscape buffer areas along the four site boundaries [133].

[132] EES Map Book, Map 5
[133] D761

Mr Barlow gave evidence the large site area and comprehensive mitigation measures, including the EPRs and RSG, would enable amenity impacts during construction and operation to be mitigated.

The primary position of many submitters was the Stabling Facility should be located on a different site, however some provided commentary on various design issues that should be addressed should the site proceed.

Kingston provided an alternative advocacy design for the site that included an extensive, publicly accessible 'green' roof over the western area of the site, various environmental and community elements and the retention of Old Dandenong Road [134]. If the advocacy design was not supported, Kingston identified key elements that should be included in the design, including visual screening to be provided by a combination of landscaping and the introduction of green roof infrastructure. Other elements, including pedestrian and cycling paths and the retention of Old Dandenong Road are discussed in Chapter 15.

Other submitters argued the site's development footprint should be minimised and landscaped buffer areas along the boundaries should be maximised. Areas of particular concern were the interface with houses on Nicholas Grove, the visual impacts along Kingston Road and the protection of the Henry Street Trail and Kingston Walk Linear Reserve. As well as mitigating landscape and visual impacts, the treatment of those boundary areas could assist in addressing other amenity issues such as noise and dust discussed in Chapter 6, and biodiversity issues discussed in Chapter 7.

11.4.3 Discussion

The IAC believes deferring the design of the Stabling Facility until after the EES process was not an ideal approach. The Proponent was able to provide reasonably detailed Surface and Tunnel Plans for the stations and the EES would have benefited if similar plans had been available for the Stabling Facility, or at least some more detail about the extent of the site that might be developed. The lack of a more detailed plan or guidance has limited the ability of the IAC, Kingston and other stakeholders (particularly the local community) to assess specific impacts of the Stabling Facility and the adequacy of the mitigation measures. Instead, the assessment is largely confined to the general design guidance and mitigation measures provided in the EMF and the UDS.

The IAC agrees with submitters the development footprint of the site should be minimised to the maximum practical extent, and notes Mr Barlow's observation the large site area will likely provide a degree of design flexibility and the opportunity to mitigate visual and other impacts. This is particularly so in relation to the landscaped buffers along the site boundary and the contribution they can make to addressing visual, biodiversity and arboricultural impacts and augmenting open space and local connectivity.

The IAC has reviewed the relevant mitigation measures and is satisfied the place-specific requirements in the UDS provide an acceptable framework for addressing various design issues, although it agrees with Kingston the UDS should include a requirement to consider the provision of green roof structures. The IAC accepts the Proponent's advice that design and cost issues associated with the extensive green roof included in Kingston's alternative design preclude this approach being adopted, but believes consideration should be given to whether discrete elements of the site and infrastructure could include this treatment. This additional reference in UDS

[134] The Southern Stabling Facility Design Advocacy Report that was appended to Kingston's initial written submission

Outcome SF4 is recommended below and a similar reference is included in EPR LV7, included in the recommended EMF at Appendix G.

11.4.4 Findings

The IAC finds:

- The assessment of landscape, visual and other impacts would have been assisted by the EES including a more resolved plan for the Stabling Facility.
- The UDS and EMF include appropriate guidance for the design of the Stabling Facility, subject to further consideration of including green roof structures.

11.5 Clayton

11.5.1 What did the EES say?

The Project will impact on 0.2 hectares of the Remembrance Gardens (54 per cent of the total park area) during construction and permanently remove 0.04 hectares associated with a SRL station entrance. The mitigation measures relate to maintaining access during construction, maintaining access to Clayton Hall and reinstating the Gardens post-construction. It did not propose the provision of replacement open space. The UDS includes various Project wide and place-specific requirements, including requirements for the Clayton Station and Remembrance Gardens.

The key issues to be resolved are:

- impacts on the Remembrance Gardens.

11.5.2 Evidence and submissions

The Proponent submitted the impacts on the Remembrance Gardens, while significant during construction, would be limited in the longer term and would be effectively mitigated. Mr Barlow agreed with this assessment and did not believe that any additional mitigation measures were necessary.

Monash raised various matters in relation to the Remembrance Gardens and submitted the POSF and EMF should require replacement open space before construction activity in the Remembrance Gardens commences.

11.5.3 Discussion

The IAC agrees with Monash that the impacts during construction will be significant given that most of the Remembrance Gardens will be inaccessible, its utility will be significantly impacted and station construction will extend over six years. It has concerns about operational impacts, particularly the likely transformation of the Remembrance Gardens from an area of passive recreation and contemplation to a pedestrian thoroughfare that funnels movement to and from the station. The IAC does not agree with the EES or Mr Barlow's assessment that development of the station entrance will somehow improve the Remembrance Gardens.

It would not be possible to effectively mitigate construction impacts without providing replacement open space given the nature and duration of the impacts. The IAC's concerns about operational impacts would be difficult to mitigate given the small size of the Remembrance Gardens, the provision of the station entrance and associated pedestrian infrastructure and the expected change in the park's utility and function.

When considering how these impacts might be mitigated and whether replacement open space should be provided, the IAC has had regard to its recommendation (in Chapter 15.5) that Carinish Road remain open. A consequence of this would be the loss of proposed open space associated with the road closure, an outcome that would compound the impacts on the Remembrance Gardens and the general lack of open space in the immediate area.

For these reasons, the IAC considers the area of the Remembrance Gardens unavailable during construction should be treated in the POSF as permanently lost and require replacement open space. This does not negate the need to reinstate the Remembrance Gardens following construction but provides for additional open space to be provided. This might, for example, involve the provision of a 'public plaza' on Haughton Street as recommended in the Clayton Activity Centre Precinct Plan. How and where this replacement open space might be provided will require consultation with Monash and will be facilitated through its recommended role as a member of the POSEP. However, it would be desirable the replacement open space be provided in the immediate vicinity of the station and before construction commences.

11.5.4 Findings

The IAC finds:

- The construction and operational impacts on the Remembrance Gardens cannot be satisfactorily mitigated without the provision of replacement open space within an area in close proximity.

11.6 Burwood

11.6.1 The Burwood Highway pedestrian crossing

(i) What did the EES say?

The EES did not support an at-grade crossing of Burwood Highway and preferred an overpass to an underpass. The overpass is referenced in the UDS and the Burwood Surface and Tunnel Plan.

The key impacts to be resolved are:

- the Station and pedestrian crossing of Burwood Highway
- Gardiners Creek reinstatement and pedestrian crossing
- impacts on the Sinnott Street Reserve

(ii) Evidence and submissions

The Proponent supported the use of a pedestrian overpass and cited various issues associated with constructing an underpass, including additional cost, required length, safety, engineering complexity and construction impacts on Burwood Highway [135]. Mr Jones noted the benefits of an underpass and the technical constraints referred to by the Proponent. Mr Barlow preferred having a station entry on the north side of Burwood Highway but acknowledged the technical constraints to achieving this.

Whitehorse initially sought an extension of the underground station box to the northern side of Burwood Highway but subsequently accepted the exhibited site and submitted it be linked to the

[135] D214 and D723

northern side of the Highway by an underpass instead of an overpass. Mr Czarny found the station site was generally appropriate and he preferred an underpass to an overpass.

The DoT supported the overpass because it would provide an acceptable level of pedestrian connectivity and minimise the amount of time the Burwood Highway would need to be closed for construction (compared to an underpass).

Deakin University supported either approach but was concerned that it be effective and well designed. To address its concerns, the University provided some additional place-specific UDS requirements that the Proponent supported.

Presbyterian Ladies' College (S357) preferred an overpass instead of an underpass for safety reasons and sought a link directed to the College from its northern side. This link could be provided through the inclusion of stairs to the west of the overpass as shown on the Proponent's preliminary design in D393.

(iii) Discussion

The IAC agrees with the Proponent that a well-designed pedestrian overpass can provide a safe, effective and convenient crossing, although it acknowledges an underpass could have a range of positive benefits as noted in submissions and evidence. However, an underpass would have significant design, construction and cost challenges and the IAC is not satisfied that it has enough information on which to recommend this approach be adopted.

The design of the overpass will be critical to its success and the IAC supports the additional requirements included in the UDS to guide this process. The IAC notes the concerns raised by the Presbyterian Ladies' College and is satisfied they can be addressed through detailed design processes.

(iv) Findings

The IAC finds:

- A well-designed pedestrian overpass can provide a safe, convenient and effective crossing of Burwood Highway.

11.6.2 Gardiners Creek naturalisation and crossings

(i) What did the EES say?

The EES provides for the naturalisation of Gardiners Creek between the Burwood Highway bridge and existing pedestrian/bicycle bridge crossing adjacent to Sinnott Street. This is reflected in various EPRs, including EPR SW8 that requires development and implementation of a management plan for the naturalisation of this reach. The UDS includes comprehensive references to the treatment of Gardiners Creek.

The EES relied on the existing east-west crossings at the Burwood Highway bridge in the north of the Project area and pedestrian and cycling crossing adjacent to Sinnott Street in the south.

(ii) Evidence and submissions

The Proponent outlined the intended processes and general works associated with the Gardiners Creek naturalisation management plan, including the outcomes sought and the extent of consultation. It noted the submissions that sought an extension of the area to be naturalised (including extending south to Highbury Road) but submitted this was beyond the scope of the

Project and that it would involve complex issues and a range of other stakeholders. However, it acknowledged that extending the area to be naturalised would be a positive outcome and could be addressed through future precinct planning.

The Proponent did not support an additional crossing of Gardiners Creek and submitted the existing crossings were adequate.

Whitehorse and other submitters advocated that the management plan and naturalisation extend further along the creek, including the southern reach to Highbury Road.

Whitehorse sought an additional pedestrian and cycling crossing of Gardiners Creek to connect with public open space on its western side and to McIntyre Street. Mr Czarny believed it would be appropriate to provide a number of crossings. Other pedestrian and access issues are discussed in Chapter 15.8.

(iii) Discussion

The proposed naturalisation of Gardiners Creek in the vicinity of the Project would be a positive outcome and there would be obvious benefits in extending the area further south as sought by submitters. However, the IAC does not believe there is an adequate nexus between the Project and the Gardiners Creek section to the south of the existing pedestrian bridge to require an extension to the management plan and creek section to be naturalised. The IAC agrees with the Proponent that naturalisation of this additional section could be addressed through future precinct planning.

The IAC is not satisfied the need for an additional pedestrian and cycling crossing has been demonstrated given the proximity of the two existing crossings. In addition, the steep topography on the western side of Gardiners Creek would seem to be a significant constraint to providing an accessible crossing in the central area of the site. For these reasons, the IAC does not support an additional crossing, but notes this could be reconsidered during detailed design.

(iv) Findings

The IAC finds:

- The sectional extent of the proposed naturalisation of Gardiners Creek is appropriate and has a clear nexus to the Project.
- The need for an additional pedestrian and cycling crossing of Gardiners Creek has not been justified, but should be reconsidered during detailed design.

11.6.3 Sinnott Street Reserve

(i) What did the EES say?

The Project requires the occupation of the Sinnott Street Reserve during construction, although some of it will be returned to the public realm in accordance with the Burwood Surface and Tunnel Plan. The adjoining industrial site to the west will be acquired for the Project and some of it will be used to augment the Gardiners Creek Reserve. There will be no net loss of open space in this area following the Project's construction.

(ii) Evidence and submissions

The Proponent noted the POSF references to the Sinnott Street Reserve, including the provision of a temporary playground within the same catchment and new open space within the station

precinct, consistent with the Surface and Tunnel Plans. The UDS includes place-specific requirements relating to open space within the Project area.

Whitehorse submitted the Project should require:

- replacement open space within 500 metres of the Sinnott Street Reserve prior to construction
- the return to Whitehorse of the parts of the Sinnott Street Reserve not required for operations.

Other submitters raised concerns about the loss of open space from within the Reserve and made suggestions about how future open space might be configured and developed.

(iii) Discussion

During the Project's construction, open space within the Gardiners Creek Reserve (on its western side) will still be available for public use, as will the Bennettswood Reserve on the northern side of the Burwood Highway. The IAC is satisfied the availability of these two areas negates the need for replacement open space to be provided during construction. Once construction is complete, there will be a net increase in the amount of land within the public realm and no need to provide replacement open space.

The design and ownership of open space areas created by the Project can be determined through future planning processes in consultation with the relevant stakeholders, including Whitehorse as a member of the POSEP.

(iv) Findings

The IAC finds:

- There is no justification for providing replacement open space for the loss of the Sinnott Street Reserve during construction.

11.7 Box Hill

11.7.1 What did the EES say?

The EES identified 1.67 hectares of the Box Hill Gardens (approximately 24.9 per cent) would be inaccessible during construction. This area would be used for construction activities associated with SRL East and potentially SRL North[136]. The construction period for the station would extend over five years and up to nine years if used in conjunction with SRL North construction program. Once construction is completed, the area would be returned to the Box Hill Gardens.

The EES recommended various mitigation measures, including EPR HH7 (Minimise impact and undertake reinstatement of Box Hill Gardens), EPR LUP4 that requires preparation of POSMPs (including a plan for the Box Hill Gardens), a set of 'objectives' in the POSF and general references in the UDS. It did not recommend that replacement open space be provided.

Th e key issue to be resolved is:

- impacts on the Box Hill Gardens and the UAW facility.

[136] EES Project Description

11.7.2 Evidence and submissions

The Proponent acknowledged the extent of construction impacts on the Box Hill Gardens, but submitted development of a POSMP as required under EPR LUP4, together with the other mitigation measures would adequately address concerns raised in submissions and provide the mechanisms to address detailed design issues. It noted the requirement under EPR HH7 to prepare a 'reinstatement' plan once construction is completed.

The Proponent proposed various additions and revisions to the EPRs and POSF in response to Mr Barlow's evidence and following its consideration of submissions and other evidence. The key change was the inclusion of an objective in the POSF to provide one hectare of replacement open space, or if not possible, enhancements to existing open space.

The Proponent had discussions with UAW during the Hearing about the potential impacts on the aged care facility that are outlined in TN46. This facility is located along the northern boundary of the Gardens and would share a direct interface with the Project's construction area. The Proponent advised it had agreed to a tailored mitigation response in a new EPR SC6.

Whitehorse highlighted the community significance of the Box Hill Gardens and the impact of losing access to a significant area during the lengthy construction period. In addition to seeking general changes to the open space mitigation measures, Whitehorse submitted the future POSMP should include:

- provision within 1km of the Box Hill Gardens, prior to commencement of construction activities within the Gardens, of
  - i. a new passive open space of at least 1 hectare in size; and
  - ii. a play space to supplement the existing play space at the Box Hill Gardens;
- maintenance of pedestrian access to Box Hill Gardens on its northern and southern extents from Station Street; and
- prior to completion of construction at Box Hill Gardens, preparation in consultation with Whitehorse City Council of a new master plan for the Box Hill Gardens; and
- reinstatement of the Box Hill Gardens in accordance with the new master plan [137].

Whitehorse sought provision of a six-metre separation between the Project Land and the UAW facility.

Mr Czarny agreed the impacts on the Gardens would be significant during the construction period and suggested various approaches that might ameliorate visual impacts.

Other submitters raised concerns about the loss of open space and made suggestions about how the Box Hill Gardens might be configured and developed when construction is completed.

11.7.3 Discussion

The IAC accepts the use of the Box Hill Gardens during construction would significantly reduce the extent of private land that would need to be acquired for the Project. On balance, this is an acceptable outcome, although it is important that mitigation measures appropriately address the significant impacts this will have on the utility of the Box Hill Gardens and the broader social impacts.

Consistent with its overarching findings about the provision of replacement open space discussed earlier, the IAC believes the extent and duration of impacts on the Box Hill Gardens warrant the

[137] D472, p4

provision of replacement open space as proposed by Whitehorse and subsequently agreed by the Proponent. Whitehorse sought a replacement area of at least one hectare (a smaller area than the 1.67 hectares that would be temporarily lost) and the IAC supports this approach. The IAC agrees the replacement open space should be provided before construction within the Box Hill Gardens commences and within one kilometre of the station (instead of 1.6 kilometres as proposed by the Proponent). Replacement open space within a one kilometre radius is more likely to serve the immediate catchment that uses the Gardens.

The IAC notes the existing play space is outside the Project's construction area and does not appear to be directly impacted. For this reason, the IAC is not satisfied that an additional play space is necessary, although this can be reviewed during the preparation of the POSMP and once the construction area boundary is finalised.

The IAC agrees with Whitehorse that an open space link should be provided along the northern interface between the Gardens and UAW facility during construction. This would serve the dual purpose of providing a visual buffer for the facility and a pedestrian link to the Box Hill Gardens from the east. Whitehorse proposed a six-metre separation, but the IAC believes it should have a minimum depth of 10 metres in order to properly and safely function as a pedestrian access to the Gardens and visual and amenity buffer. A 10-metre buffer might also enable the retention of existing trees near the Station Street entrance. The IAC considered whether a wider buffer should be provided but is concerned this might necessitate an expansion of the construction area to the west and potentially impact on existing infrastructure such as the play space and Xerophytic Garden.

The IAC is satisfied that these considerations can be addressed during detailed design (including the preparation of the POSMP) and in consultation with Whitehorse and UAW. In the interim, EPR SC6 should be amended to provide a minimum 10-metre-wide buffer along this interface.

The IAC has reviewed the other more detailed changes to the POSF sought by Whitehorse and has included those that it supports.

11.7.4 Findings

The IAC finds:

- The significant construction impacts on the Box Hill Gardens warrant the provision of replacement open space within a one kilometre radius.
- The Project should provide a minimum 10-metre wide buffer along the construction area interface with the UAW facility.
- The preparation of the Public Open Space Management Plan is the appropriate mechanism to address detailed design issues.

11.8 Recommendations

The IAC recommends:

Environmental Management Framework

Include the following changes:

- **Revised EPR LUP4 to provide additional guidance about the preparation of the POSF and its approval by the Minister for Planning.**
- **Revised ERP SC6 to designate the 10-metre buffer from the Uniting AgeWell site.**

These changes are included at Appendix G.

Public Open Space Framework

Adopt the recommended version included at Appendix H, subject to:

- **reviewing the accuracy of the open space maps and open space area calculations.**
- **including a reference to the Whitehorse Road Linear Reserve in the summary table.**

SCO14 Suburban Rail Loop East Incorporated Document

Adopt the recommended version included at Appendix F.

Urban Design Strategy

Include the following additional consideration under outcome SF4, 4a:

i. Include green roof structures where appropriate and feasible.

11.9 Overall conclusions on landscape, visual recreational values and built form

Subject to the recommendations of the IAC, there are no landscape, visual recreational values or built form impacts that preclude the Project being approved or the evaluation objective being achieved.

12 Land use planning and infrastructure

12.1 Introduction

Land use planning and infrastructure is discussed in:

- EES Technical Summaries:
  - Land Use Planning
- Technical Appendices:
  - N.1 – Land Use Planning Existing Conditions
  - N.2 – Land Use Planning Impact Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed four mitigation measures in the EPRs to manage the impacts of the Project on land use planning and infrastructure. These included:

- EPRs: LUP1 – LUP4.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN06 - Urban Design Panel and Public Open Space Expert Panel (D234)
- TN13 - Urban Design Advisory Panel and Main Works Incorporated Document (D297)
- TN15 - Urban Design Strategy Proposed Amendments (D308)
- TN18 - Land use, Social and community, Draft Planning Scheme Amendment, Urban Design (D338)
- TN26 - Zone and aerial plans of Stabling Facility (D402)
- TN29 - Expert witness (Mr Jones) response to questions on notice (D410)
- TN44 - Ground Movement – Infrastructure Protection Specific Controls Overlay (SCO15) (D539)
- TN46 - Uniting AgeWell, Box Hill (D726)
- TN48 - Ground Movement – Infrastructure Protection Specific Controls Overlay (SCO15) (D741)
- TN51 - Urban Design Strategy – Proposed Amendments (D766).

Additionally, the IAC had regard to:

- relevant submissions and evidence
- Attachment F of the exhibited EES: 'Interim Land Use Guideline'.

Table 8 lists the land use planning and infrastructure evidence.

Table 8 Land use planning and infrastructure evidence

Party	Expert	Firm	Area of expertise
Proponent	Michael Barlow	Urbis	Land use planning
Whitehorse	David Barnes	Hansen Partnership	Land use planning
Monash University	Noel Matthews [138]	Arup	Land use planning

[138] Evidence filed but not called at the Hearing

Monash	Craig Czarny	Hansen Partnership	Landscape and urban design
Whitehorse	Craig Czarny	Hansen Partnership	Landscape and urban design
Kingston	Claire Martin	Oculus	Landscape
Kingston	Gerhana Waty	Hansen Partnership	Urban design
Monash	Ross Hunter	Ranbury Management Group	Rail infrastructure
Monash University	Alex Falvey [139]	Arup	Rail Infrastructure
MTTY	Peter Tesdorpf	Land Use Town Planning Service	Land use planning

12.2 Project wide

12.2.1 What did the EES say?

The EES noted the potential impacts of the Project's tunnel components would be limited, although there would be a need to protect underground Project infrastructure from inappropriate surface development. Above ground impacts would be confined to the stations, Stabling Facility and ESF sites as determined during the site options assessment that considered land use impacts. The principal mitigation measures include the proposed EPRs to minimise the Project footprint and impacts on existing land uses. Other mitigation measures included Construction Environment Management Plans, Interim Land Use Guidelines, the POSF and Business and Residential Support Guidelines. The Project would be approved through SCO14 ID and Project infrastructure would be protected through SCO15 ID.

The SCO14 ID would require approval of the UDS and UDLPs that would guide future land use planning within these areas. Although not part of the EES, future precinct planning would provide broader long-term planning. These processes would involve the further consideration of existing structure plans and other policy and guidance documents.

The key issues to be resolved are:

Project wide:

- land use impacts, including integration, displacement and consistency with existing planning guidance
- the role of the Surface and Tunnel Plans and future precinct planning
- SCO14 and the Suburban Rail Loop East Incorporated Document
- SCO15 and the Suburban Rail Loop East Infrastructure Protection Incorporated Document
- the Urban Design Strategy and Urban Design Advisory Panel.

[139] Evidence filed but not called at the Hearing

12.2.2 Project wide land use impacts

(i) What did the EES say?

The EES described the existing land uses that would be impacted by the Project together with relevant State and municipal planning policies, including local and activity centre structure plans. It concluded the Project was generally consistent with existing planning policies, particularly those that sought to reinforce the role of activity centres. The EES noted it had regard to those policies. It acknowledged some detailed elements of the Project were inconsistent with specific plans, but noted these plans pre-dated the incorporation of the Project in the Plan Melbourne Addendum.

The EES proposed various mitigation measures to address land use issues, including overarching EPRs that sought to minimise the Project footprint and supporting documents such as the Interim Land Use Guidelines, UDS and POSF.

(ii) Evidence and submissions

The Proponent relied on Mr Barlow's evidence that described the relevant planning policies and assessed the land use impacts of key elements of the Project. Mr Barlow concluded land use impacts would be broadly positive and was satisfied adverse impacts could be managed through recommended mitigation measures. He acknowledged the relevance of the various structure and activity centre plans and was satisfied the Project was consistent with the broader planning objectives and outcomes these sought.

Kingston, Whitehorse, Monash and Bayside described the relevant local planning policies and identified various elements of the Project they believed required further refinement to take account of those policies.

Whitehorse called evidence from Mr Barnes who generally supported the Project, but raised detailed issues in relation to the EMF, draft PSA and Surface and Tunnel Plans.

(iii) Discussion

The Project's land use impacts will be limited by the extensive use of tunnelling, although above ground impacts will be much more pronounced, particularly within activity centres. This is largely unavoidable given the nature of the Project, the necessary location of the station sites and the method of construction.

The IAC is satisfied the Project's design, including the proposed Surface and Tunnel Plans, adequately responds to existing local planning polices, subject to the specific issues and mitigation measures discussed elsewhere. As noted in the EES and by Mr Barlow, although local planning policies predate the Project and its inclusion in the Plan Melbourne Addendum, the Project is consistent with and will help achieve broader and long-term land use objectives for the relevant activity centres.

Future, more detailed Project planning (including the UDLPs and precinct planning) in consultation with the Councils and other stakeholders will provide the opportunity to review and implement the relevant elements of the existing local policies.

(iv) Findings

- The above ground elements of the Project will have significant land use impacts, particularly across the station sites in activity centres.

- The Project's design and the recommended mitigation measures should acceptably avoid or minimise land use integration, displacement and infrastructure issues.
- Future planning processes, including the UDLPs and precinct planning, will further address local land use planning objectives and issues.

12.2.3 Surface and Tunnel Plans and future precinct planning

(i) What did the EES say?

The EES described the various planning and approval processes the Project will require, including draft PSA GC197 and SCO14 and SCO15. The SCO14 ID requires the Surface and Tunnel Plans be approved by the Minister. The plans can be amended with the Minister's approval, subject to the provision of various material by the Proponent.

The Surface and Tunnel Plans were exhibited with the EES as part of the PSA. The SCO14 ID provides the overarching approval for the Project, subject to use and development being 'generally in accordance' with the approved Surface and Tunnel Plans.

The Surface and Tunnel Plans identify the tunnel alignments and Project Land associated with the SRL stations, Stabling Facility and Emergency Support Facility. The station plans identify underground station boxes, above ground station facilities and various transport and movement elements. They further identify 'sites subject to future precinct planning processes'.

The SCO14 ID requires the Minister's approval of UDLPs prior to the development of permanent above ground works. Future precinct planning will occur after the EES process, this process is described in D540 and TN18. Relevantly, Clause 23 of the IAC's Terms of Reference notes that precinct planning will be undertaken separately to the IAC process.

(ii) Evidence and submissions

The Proponent advised the sites identified for future precinct planning on the Surface and Tunnel Plans were identified following an integrated multidisciplinary assessment. It outlined the various factors considered. In response to concerns about the role of these sites and the nature and extent of how they might be developed, the Proponent submitted:

> (i) The areas are described as "sites", as distinct from "buildings" or "building envelopes";
>
> (ii) The areas are specifically set aside for precinct planning, and their use and development for purposes other than the Project (i.e. rail and associated infrastructure) is specifically excluded from the exemption provided by the proposed Incorporated Document;
>
> (iii) They are specifically relied upon and purposed in the Incorporated Document as being subject to the Interim Land Use Guidelines and exempted from approval requirements consistent with the approach under EPR LUP2; and
>
> (iv) Given that the UDLPs must be generally in accordance with the Surface and Tunnel Plans, the colouration of the areas is more practically understood in contradistinction to, and affirmation of, the "green" public realm areas, noting also the depiction of these areas did not appear to attract any criticism [140].

Mr Barlow noted development of these sites would be determined through UDLPs and future precinct planning and agreed they should not be regarded as building envelopes as feared by some submitters. He accepted they could be used for a range of uses, including additional open space

[140] D775, p25

but did not believe the notation on the Surface and Tunnel Plans needed to be changed. Mr Jones gave evidence that the sites should be understood as future building sites, although they might include small scale public open spaces.

Kingston, Monash and Whitehorse raised concerns about the future treatment of these sites and the uncertainty about how they might be developed. The Councils proposed various changes to their location and configuration, based in part on urban design and planning evidence, as discussed later in this chapter.

Mr Czarny raised various issues about the identification of these sites and believed the EES should have provided more detailed site specific information and development guidance, including a three-dimensional understanding of built form.

Mr Barnes was critical of the lack of design detail in the Surface and Tunnel Plans (and the EES more generally).

(iii) Discussion

The IAC accepts development of these sites will be determined through future planning processes, and that as a matter of broad planning principle, high density development in support of the stations would be a positive and justifiable outcome. However, the IAC does not believe they should be characterised as 'building footprints' and agrees with Mr Barlow there should be some flexibility about what they include and how they are designed. Although the Proponent outlined the process for identifying these areas in TN18, it did not provide detailed evidence or submissions about how individual sites were defined, apart from the general evidence provided by Mr Jones. This limited the opportunity to understand the rationale for selecting and configuring the sites and understanding their potential for future development.

While some submitters and experts believed the EES should have provided more guidance about how these areas might be developed, the IAC does not believe this is a major flaw. The Surface and Tunnels Plans provide a broad framework for future development that will be informed by the extensive guidance in the UDS. This is an acceptable approach and recognises the sites will be subject to future planning processes, including stakeholder engagement. That the IAC has recommended all Councils should be included as members of the UDS and POSF will value add to this process.

However, the IAC believes that there should be more flexibility about how these sites are described and interpreted. In this context, the IAC agrees with Mr Barlow's evidence they should not be strictly interpreted as building footprints and should at least provide for other opportunities to be considered as part of the future land use mix. These could include additions to the public realm, community facilities and pick up/drop off (PuDo) parking spaces [141].

For these reasons, the IAC believes the legend in the Surface and Tunnel Plans should be changed to '*Site subject to future precinct planning process, including possible additions to the public realm, community facilities and pick-up/drop-off spaces*'. This additional flexibility would likely address some of the concerns raised by submitters.

(iv) Findings

The IAC finds:

[141] This is discussed in Chapter 15 of this Report

- The designation of sites subject to future precinct planning processes in the Surface and Tunnel Plans should provide more flexibility about possible future land uses.

12.2.4 SCO14 and the Suburban Rail Loop East Incorporated Document

(i) What did the EES say?

The draft PSA established the SCO14 ID as the overarching Project approval. The exhibited SCO14 ID required the preparation and implementation of Surface and Tunnel Plans, the EMF, UDS and UDLPs and the establishment of the UDAP. It addressed native vegetation removal, roadworks, preparatory buildings and works and the availability of approved plans and documents.

The Minister for Planning is the responsible authority for administering and enforcing SCO14.

The EES assessed various options for approving the Project and concluded the use of the SCO and an ID was the preferred approach.

(ii) Evidence and submissions

The Proponent provided its final version of the SCO14 ID (D791) following its consideration of submissions and evidence, together with revised Surface and Tunnel Plans (D761, D762, D763 and D764). Mr Barlow supported SCO14 ID, subject to some minor changes.

Kingston, Monash and Whitehorse generally supported the use of the SCO, but sought various changes to SCO14 ID provided in D771 (Kingston), D481 (Monash) and D472 (Whitehorse). Many of the changes were agreed by the three Councils (and Bayside), including provisions relating to consultation requirements when amending the Surface and Tunnel Plans, the approval of the POSF and Council involvement in the UDAP and POSEP. Place-specific changes primarily related to the Surface and Tunnel Plans and POSF.

Mr Barnes supported use of the SCO and an incorporated document but recommended various changes to the SCO14 ID in relation to consultation arrangements.

Manningham supported various changes sought by the other Councils and submitted clause 4.2(m) of the SCO14 ID was 'beyond power' and should be removed [142].

(iii) Discussion

The IAC is satisfied the SCO is an acceptable Victorian Planning Provisions (VPP) tool to approve the Project and the SCO14 ID provides an appropriate approval framework.

As discussed elsewhere, the IAC supports additional requirements in SCO14 ID for the Minister to approve the POSF and Council membership of both the UDAP and POSEP.

The IAC agrees with the Councils they should be notified of proposed amendments to the Surface and Tunnel Plans and have the opportunity to provide comment within 28 days. It does not agree proposed amendments need to be formally advertised or the Minister should only approve amendments where there is 'no net detriment'. The relevant changes are in the recommended SCO14 ID at Appendix F. The IAC is satisfied these changes provide an appropriate balance between formalising stakeholder involvement and maintaining an efficient approval process.

[142] Clause 4.2(m) specifies the Project can include 'Any use or development that the Minister for Planning confirms in writing is for the purposes of the Project.

The various place-specific issues raised by the Councils are discussed and assessed in the relevant chapters of this report. Where appropriate, the IAC has recommended changes to the Surface and Tunnel Plans and other documents before the draft PSA is approved. The Councils listed their recommended changes to the Surface and Tunnel Plans as matters to be addressed in SCO14 ID, but the IAC believes its recommended changes should be made before the PSA is approved.

The IAC does not share Manningham's view about the legality or application of Clause 4.2(m) and is satisfied this is an appropriate Ministerial discretion.

(iv) Findings

The IAC finds:

- The SCO and Suburban Rail Loop East Incorporated Document provide an acceptable framework for approving the Project.
- The SCO14 Suburban Rail Loop East Incorporated Document should require proposed amendments to the Surface and Tunnel Plans be referred to the relevant Council before approval.

12.2.5 SCO15 and the Suburban Rail Loop East Infrastructure Protection Incorporated Document

(i) What did the EES say?

The draft PSA established the SCO15 ID as the mechanism to protect the structural integrity of the tunnels and associated infrastructure. The exhibited SCO15 ID specified permit, application and referral requirements and decision guidelines. It included Project Infrastructure Protection Area plans that identified the extent of the overlay, lot boundaries, local government areas and 'Project Infrastructure Protection Area A' maps. The Protection Area A maps identify more sensitive areas that are subject to more expansive permit requirements than the remainder of SCO15. These were identified in the Infrastructure Protection Report included in the EES.

The relevant Councils would be the responsible authority for administering applications and the Secretary to DoT would be a determining referral authority.

The EES assessed various options for protecting Project infrastructure and concluded the use of the SCO and an ID was the preferred approach.

(ii) Evidence and submissions

The Proponent advised its approach to protecting Project infrastructure is closely modelled on the MTP Design and Development Overlay introduced into the Melbourne and Stonnington Planning Schemes. It advised it would encourage pre-lodgement consultations to assist permit applicants in preparing their applications and reduce the potential for delay or requests for information during the application process.

The Proponent provided its final version of the SCO15 ID following its consideration of submissions and evidence [143]. This included various refinements to the buildings and works that would require a permit, specifying building and works that would not require a permit and exempting buildings and works within the Public Use Zone where the plans had been approved by the referral authority.

[143] D790

Mr Barlow supported SCO15 ID and did not agree with submissions that sought the Proponent pre-approval before an application is lodged. He believed that would effectively provide the SRLA with a power of veto and potentially remove appeal rights that an applicant would have if it disagreed with the Proponent's technical advice.

He believed consideration should be given to creating a guide to assist applicants 'navigate' the approval process. The guide should:

- Explain the purposes of the control building on the work already found in the SRL East – Infrastructure Protection Report.
- Provide information on what information is required for an application and where detailed information can be obtained on matters such as load factors, tunnel depth etc.
- Provide examples of development and works that are exempt from the requirement for a permit (for locations outside Area A) and examples of where a permit will be required.
- Provide contact information for the SRLA to assist in the review process [144].

The Proponent included a reference to the preparation of guidelines in its final version of SCO15 but did not include a commitment to preparing a guide.

Monash and Whitehorse generally supported the use of the SCO but sought changes to the SCO15 ID that were provided in D481 (Monash) and D472 (Whitehorse). These changes were supported by Kingston and included:

- requiring applicants to seek pre-approval from the SRLA prior to lodging permit applications
- exempting development from requiring a planning permit where the referral authority had consented to the application within the previous three months
- requiring referral authorities to prepare standard requirements or conditions applicable in specified circumstances.

Mr Barnes gave evidence that permit applications should only proceed to Council where they were likely to comply with the requirements of the Secretary of DoT.

Manningham expressed concerns about the cost implications for development but did not propose specific changes to SCO15 ID.

Submitters raised concerns about the configuration of the SCO15 ID mapping (the Project Infrastructure Protection Area maps) and preferred that it follow title boundaries. Some submissions raised concerns about potential ground movement and land stability issues that are discussed in Chapter 14.4.

(iii) Discussion

The IAC is satisfied the SCO is an acceptable VPP tool to protect Project infrastructure and the SCO15 ID provides an appropriate management and approval framework.

The IAC does not support the pre-approval and exemption changes sought by the Councils and agrees with Mr Barlow's evidence that pre-approval by the referral authority could have unintended consequences for appeal rights.

However, the IAC agrees with Mr Barlow that the Proponent should prepare a 'guide' to assist applicants. This could include guidance about standard conditions or requirements as suggested

[144] D73, p101

by the Councils. This requirement is included as an additional LUP EPR in the recommended EMF at Appendix G.

The IAC agrees with the Proponent the Project Infrastructure Protection Area maps appended to the SCO15 ID should reflect the impact areas identified in the Infrastructure Protection Report and need not follow title boundaries. This may minimise the number of unnecessary permit applications.

Finally, the IAC notes the Project Infrastructure Protection Area maps need to be amended to reflect the changed tunnel alignment through Monash University (as will the SCO14 and SCO15 mapping).

(iv) Findings

The IAC finds:

- The SCO15 and Suburban Rail Loop East Infrastructure Protection Incorporated Document provide an acceptable framework for protecting Project infrastructure.
- The Proponent should prepare and provide a guide for planning permit applications under SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document.

12.2.6 The Urban Design Strategy and Urban Design Advisory Panel

(i) What did the EES say?

The SCO14 ID required a UDS be approved by the Minister for Planning prior to the commencement of development. It can be amended by the Minister subject to the amendment request including various supporting material, including advice from the UDAP. The UDS must address various urban design matters and would inform future planning and design processes, including the preparation of UDLPs that must be prepared under the SCO14 ID together with future precinct planning. A draft UDS was exhibited with the EES.

The SCO14 ID requires the UDAP to include representatives from:

- Office of the Victorian Government Architect
- Department of Transport
- Suburban Rail Loop Authority.

It must include two independent design experts.

(ii) Evidence and submissions

The Proponent outlined the preparation and role of the UDS, and noted it was a more sophisticated iteration of similar documents prepared for other major projects. An initial draft UDS was peer reviewed by Mr Jones and changes to the exhibited version were recommended following the Proponent's consideration of submissions and evidence. A key change to the UDS was the inclusion of consultation requirements in SCO14 ID before the UDS is approved or amended. The Proponent recommended various detailed changes to the UDS described in its final version of the document and provided responses to the various changes sought by submitters [145].

The Proponent did not support the inclusion of Council representatives on the UDAP. It noted it was satisfied the UDAP Terms of Reference adequately provided for consultation with the relevant Councils. Its concerns about Council involvement included confidentiality of the tender process,

[145] D768, D769

the need for the UDAP advice to remain within the scope of the Project and ensuring the UDAP is of workable size.

Mr Barlow supported the UDS and recommended SCO14 ID include consultation requirements that were included in the Proponent's final SCO14 ID (D791). He did not support Council membership of the UDAP, citing concerns about its size and functionality.

Mr Jones supported the UDS and recommended various changes following his consideration of submissions. He agreed Councils should be involved in the UDAP in relation to matters within their municipalities and it was reasonable they be involved throughout the UDS decision making process.

Kingston, Monash and Whitehorse generally supported the UDS, but sought various detailed changes to the Project wide and place-specific requirements. They submitted they should be members of the UDAP because of their detailed local understanding of the sites within their municipalities, experience in local structure planning and the ability to represent their local communities.

Specific changes to the UDS sought by these Councils were described in D655 (Kingston), D751 (Monash and Whitehorse in relation to section 5.13), D480 (Monash) and D472 (Whitehorse). Some of these changes involved the Surface and Tunnel Plans and others and are discussed elsewhere.

Mr Czarny generally supported the UDS and noted that it was a more advanced document compared to similar documents for other projects. However, he identified various gaps. including a lack of three-dimensional building analysis and guidance. He recommended specific changes in relation to Glen Waverley, Burwood and Box Hill station areas.

Ms Waty generally supported the UDS but recommended various overarching changes to section 5.13 (Development outside Project scope) and place-specific changes in relation to Cheltenham, including changes to the Cheltenham Surface and Tunnel Plan. She provided commentary on Kingston's alternative concept for Cheltenham.

Ms Martin believed the UDS had various deficiencies, including a lack of measurable quantitative and qualitative performance-based requirements. She provided her assessment of the relevant UDS and POSF elements in relation to Cheltenham and the Stabling Facility, and Kingston's alternative concepts.

Bayside supported the submissions made by Kingston and the evidence and changes proposed by Ms Waty and Ms Martin.

Manningham recommended SCO14 ID include a specific requirement to document consultation with relevant Councils and responses to issues they raised.

Deakin University sought membership of the UDAP in relation to the Burwood Station precinct and land adjoining the University.

(iii) Discussion

The IAC is satisfied the UDS is a comprehensive, well considered document that will appropriately guide the Project's detailed planning and design through the UDLPs and precinct planning. The IAC supports the refinements proposed by the Proponent and has reviewed the detailed changes sought by submitters, including Kingston, Monash and Whitehorse.

The IAC does not believe the overarching changes to section 5.4 sought by Kingston and to section 5.13 recommended by Ms Waty need be included in the UDS. The IAC is satisfied the issues these changes are intended to address are adequately covered for in the UDS and would add an unnecessary level of detail, repetition or prescription.

Place-specific changes proposed by submitters and recommended in evidence are discussed further in other relevant chapters of this report.

The IAC agrees with Kingston, Monash and Whitehorse they should be represented on the UDAP in relation to their municipal areas. The UDS will have a key role in the successful design and implementation of the Project, as will the guidance provided by the UDAP. As noted in relation to Council membership of the POSEP, the IAC believes the lack of Council membership of the UDAP is a significant shortcoming in the exhibited EES. The Councils can make a significant contribution to the UDAP because of their local knowledge, experience in structure planning and urban design, and ability to represent the interests of their local communities.

The Proponent opposed this approach and preferred that general consultation arrangements be formalised in SCO14 ID as the mechanism for providing Council input. Its concerns about the UDAP becoming too large and unwieldy, and straying from the Project's scope are overstated and can be addressed through management mechanisms such as UDAP Terms of Reference. Whether or not Council membership in the UDAP might raise confidentiality issues through subsequent tendering processes is not something the IAC can usefully comment on, other than to note that this can likely be resolved through the Terms of Reference and signed agreements with the Councils.

This will require changes to SCO14 ID that have been included in the recommended version at Appendix F. The detail of how Council membership might be arranged and managed are matters for the Proponent in consultation with the Councils.

The IAC does not believe Deakin University need be included in the UDAP in relation to Burwood. The University's interests are relatively confined (compared to Whitehorse) and can be addressed through the general consultation arrangements.

Finally, the IAC notes the UDS includes place-specific plans that identify various design, land use, transport and movement elements. These were the subject of detailed submissions and evidence, including various changes from the Proponent. These do not have the status of the Surface and Tunnel Plans which form part of the SCO14 ID project approval and include the notation:

> This diagram is provided to communicate potential urban design moves to support the place-specific requirements outlined in the following pages. It does not represent a design solution nor does it limit a design response [146].

The IAC is concerned these plans have been elevated to a status they do not warrant and has considered whether they should be removed from the UDS. On balance, it is satisfied they should be retained given that they represent 'potential' design outcomes rather than fixed proposals. However, the IAC has not attributed them significant weight in its considerations and does not endorse them. Where they are inconsistent with the IAC's specific recommendations, such as changes to the Surface and Tunnel Plans, they should be modified to reflect those recommendations.

[146] UDS (D768), pp62, 68, 74, 82, 88, 96, 103 and 107

(iv) Findings

The IAC finds:

- The Urban Design Strategy is a comprehensive, well considered document that will appropriately guide the Project's detailed planning and design.
- Kingston, Monash and Whitehorse should be members of the Urban Design Advisory Panel in respect of sites and areas within their municipalities.

12.3 Cheltenham

12.3.1 What did the EES say?

The key land use planning and urban design elements of the Cheltenham Station are shown on the Cheltenham Surface and Tunnel Plan. General and place-specific design guidance is provided in the UDS and open space is addressed through the POSF.

The EES assessed three station site options and the preferred site is located within the Sir William Fry Reserve as shown in Figure 3.

The key issue to be resolved is:

- station location and future development, including Kingston's alternative concept.

12.3.2 Evidence and submissions

The Proponent outlined the various options considered and the rationale for selecting the preferred site, including its proximity to Southland, the existing Southland Railway Station and the location within the Cheltenham Southland Activity Centre. This location minimises land acquisition, manages constructability constraints, and minimises disruptions to the activity centre and residential communities.

It submitted the exhibited design would achieve the best public transport and precinct outcomes. The Proponent did not support Kingston's alternative concept, primarily on engineering and urban design grounds.

Mr Barlow supported the site from a land use and planning perspective and was satisfied it was well considered and responsive to current and future land use patterns within the broader precinct. He believed the future precinct planning process would be able build on this location and further enhance connections and create new development opportunities.

Mr Jones generally supported the urban design guidance in the Cheltenham Surface and Tunnel Plan but recommended various minor changes in relation to links and open space.

Kingston generally supported the location of the station, but raised various concerns about detailed elements of the Surface and Tunnel Plan. It prepared the Cheltenham Suburban Rail Loop Advocacy Report that was appended to its initial written submission. That report proposed an alternative concept that included different approaches to the *'sites subject to future precinct planning',* the provision of open space and various road, pedestrian and parking treatments. The key elements of the alternative concept were listed in Kingston's proposed changes to the Surface and Tunnel Plan and as described in D756. The key land use change related to the size and configuration of the sites subject to future precinct planning discussed earlier. The discussions about open space and transport issues are included in Chapters 11 and 15.

Ms Waty raised issues about the impacts on the Sir William Fry Reserve and the adequacy of traffic and pedestrian links, discussed elsewhere. She raised concerns about various urban design elements, including the sites subject to future precinct planning.

Ms Martin raised concerns about the POSF and UDS, discussed elsewhere. She raised concerns about various urban design issues and generally supported Kingston's alternative concept.

Submitters such as the Pennydale Residents Action Group Inc (S333) proposed alternative station sites, including sites within Southland and in association with other Metro stations such as Sandringham. Other submitters raised various design issues associated with the Cheltenham Surface and Tunnel Plan.

12.3.3 Discussion

The IAC is satisfied the exhibited station site is appropriately located given its proximity to Southland and the Southland Metro station. The IAC accepts the Proponent's advice about the various design and cost constraints that would preclude the use of other sites.

Although some submitters believed the station should be located elsewhere on the rail network or in the broader area, this is beyond the scope of EES and the IAC's considerations.

The key changes sought by Kingston include the reduction in the size and configuration of the sites subject to future precinct planning and the inclusion of additional open space to provide a market square and urban commons. While the provision of additional public realm within the Project Land would have benefits, it needs to be balanced against the broader benefits of higher density development in support of Cheltenham. This is particularly so given the additional open space sought by Kingston would take up a large area of the Project Land and significantly reduce the area subject to future precinct planning and potential development. While the IAC agrees there is scope to extend the public realm within these sites, the proposed market square and urban commons would require large sites and would be better located to the north of the station, within the Sir William Fry Reserve.

How and where these facilities might be provided, and the extent to which additional public realm can be provided around the station will be addressed through UDLPs and future precinct planning. The IAC is satisfied this can occur under the Proponent's concept, subject to the recommended change to the Surface and Tunnel Plan legend already discussed.

These processes can address detailed design issues raised in evidence and submissions using the overarching land use structure provided in the Cheltenham Surface and Tunnel Plan and the more detailed guidance in the UDS. For these reasons, the IAC does not believe it needs to recommend any further changes to the land use elements of the Surface and Tunnel Plan.

12.3.4 Findings

The IAC finds:

- The Cheltenham Station site is acceptable having regard to the opportunities and constraints in the area.
- The Cheltenham Surface and Tunnel Plan and UDS provide an appropriate framework for guiding more detailed future planning processes.
- The configuration of the sites subject to future precinct planning in the Cheltenham Surface and Tunnel Plan is appropriate, subject to providing more flexibility in the potential land use mix.

12.4 Stabling Facility

12.4.1 What did the EES say?

The location of the Stabling Facility is shown on the Stabling Facility Surface and Tunnel Plan and on Figure 4. General and place-specific design guidance is provided in the UDS and the loss of planned open space associated with the Chain of Parks concept is referenced in the POSF.

As discussed in Chapter 3.3, seven potential sites were initially identified for the Stabling Facility. Following consultation with DELWP and Kingston, three additional sites were assessed. Each option was considered for its potential to meet the functional requirements of the Stabling Facility, along with key deliverability, connectivity, cost, productivity and liveability considerations. As noted in Chapter 3.3, three shortlisted sites were then further assessed:

- Option 4: Heatherton Farmland
- Option 6: Heatherton Cleanfill
- Option 7: Moorabbin Industrial Precinct.

Option 6 was selected as the preferred site because of its reduced impacts on residential properties and agricultural businesses, as well as comparatively lower land acquisition and tunnelling costs. It was assessed as providing the most flexibility to accommodate varying design parameters and depot features.

The key issues to be resolved are:

- Stabling Facility location and future development, including Kingston's alternative concept.

12.4.2 Stabling Facility location

(i) Evidence and submissions

The Proponent outlined the evaluation process in the EES and submitted the preferred site:

- is of sufficient size and appropriate dimensions
- can accommodate a facility that conforms with applicable operational and design requirements
- can accommodate treatments to ameliorate off-site amenity impacts
- would avoid the potential for the significant displacement of jobs or businesses within the nearby key industrial precincts.

The Proponent provided assessments of the alternative sites proposed by submitters, including references to the relevant material in the EES. It concluded the proposed site was the 'optimal' location.

Kingston opposed the use of the site for three key reasons:

- the lack of existence of any strategic planning assessment, both in terms of the selection of the particular Delta Site or as part of any overall comparative assessment among multiple site options;
- the lack of any consideration in the EES itself of any strategic planning aspect with consequential environmental effect in terms of impact on the Chain of Parks and the community; and

- the lack of appropriate regard to the impact of the construction and operational aspects of the project on the community [147].

It provided comprehensive submissions in relation to these concerns and sought further investigation and comparative analysis of potential sites through a supplementary EES to address:

> Consideration of options for the proposed Stabling Yard, including consideration of the Delta Site at 91-185 Kingston Road, Heatherton.
>
> Assessment of the location of the Stabling Yard must incorporate assessment of the strategic planning merit of potential locations for the Stabling Yard.
>
> To include a comparative assessment of the environmental effects of the respective locational options assessed, including the amenity impact [148].

MTTY and many submitters opposed the use of the site and either recommended a further review of options or locating the Stabling Facility on alternative sites. The alternative sites included:

- the Moorabbin Industrial Precinct
- the site bounded by the Mordialloc Freeway, Dingley Bypass, Boundary Road and Old Dandenong Road
- the site near the junction of Warrigal Road and South Road, Moorabbin
- the former Kingswood Golf Course
- the Heatherton Corporate Park.

MTTY provided extensive submissions about the adequacy of the site selection process and identified a range of alternative sites, focussing on the Moorabbin Industrial Precinct. They submitted more information should have been provided about the facility's design requirements to better inform site assessment, particularly the minimum area required for the Stabling Facility.

Mr Anthony provided evidence in relation to economic and financial impact assessment and concluded the EES assessment of alternative sites was deficient. He contended a more robust assessment would have included opportunity costs, actual costs and risk, and equivalent comparisons.

Mr Tesdorpf's planning evidence was that the EES assessment of options lacked sufficient rigour and the Moorabbin industrial area was potentially a better option.

These submitters sought the IAC recommend a supplementary EES to pursue site options and alternatives further.

The Proponent and DoT did not support a supplementary EES and was satisfied with the location of the Stabling Facility and the assessment of options.

MTTY raised concerns about the extent of the SCO14 mapping in relation to the Alex Fraser site. The Proponent provided a response in TN52 that outlined the rationale for including the site in the SCO14.

(ii) Discussion

The key issue for the IAC is whether the site is acceptable for the Stabling Facility, consistent with its Terms of Reference and the various matters it is required to consider, including the evaluation objectives in the Final Scoping Requirements Report. It is not the IAC's role to identify the 'best' site for the Stabling Facility or to consider whether there are 'better' sites. The IAC's role is to assess whether the Stabling Facility site is acceptable and what mitigation measures are required

[147] 756, p3
[148] D756, p5

to address environmental impacts. These matters are discussed at length throughout this Report in which the IAC has concluded the site is acceptable, subject to extensive mitigation measures.

It follows that the IAC does not support the request from Kingston, MTTY for a supplementary EES. The IAC is satisfied the Stabling Facility site is acceptable from a land use and planning perspective and there is no basis for requiring additional assessments or investigations through a supplementary EES or other process.

The IAC is satisfied that the mapped extent of the SCO14 is appropriate for the reasons outlined by the Proponent in TN52.

(iii) Findings

The IAC finds:

- The IAC's role is to assess whether the site is acceptable for the Stabling Facility and what measures are needed to mitigate environmental effects.
- The IAC is satisfied the site is suitable for the Stabling Facility, subject to the recommended mitigation measures.
- Whether a supplementary EES is required is a matter for the Minister for Planning.

12.4.3 Implications for the Chain of Parks concept

(i) What did the EES say?

The EES acknowledged the use of this site for the Stabling Facility would preclude its future development as part of the Chain of Parks concept and its use for active open space as proposed by Kingston. It acknowledged this would be inconsistent with various policies, plans and commitments by State and local Government to convert the site into open space, but concluded this was justified by the site's suitability and comparative advantages as a location for the Stabling Facility.

The EES found the site could still contribute to the Chain of Parks concept through the retention and provision of open space links and pedestrian/cycling paths, and the inclusion of relevant elements through detailed design of the facility.

The exhibited POSF sought to address the loss of the planned open space through the objective:

> Work with City of Kingston, the Department of Environment, Land, Water, and Planning and other stakeholders to identify alternatives that continue to meet the objectives of the Chain of Parks concept [149].

The key issues to be resolved are:

- implications for the Chain of Parks concept
- amenity and visual impacts.

(ii) Evidence and submissions

The Proponent acknowledged the widespread concerns about the use of the site for the Stabling Facility and its loss to the Chain of Parks concept. It made extensive submissions about the reasons for selecting the site and the policy status of the land and the Project, noting:

[149] Exhibited POSF, pp 8, 9

(i) The Chain of Parks is a regional, rather than a local or Heatherton-based strategic vision, and the Project does not constitute a repudiation of that regional strategic vision, part of which has already been realised.

(ii) The opportunity for the land to be acquired for the purposes of inclusion within the Chain of Parks has not been implemented, and there is no known timeframe for implementation.

(iii) The incorporation of public realm and pedestrian and cycling components as part of the Surface and Tunnel Plans for the Stabling Facility implements objectives relevant to the Chain of Parks vision.

(iv) The land has been identified as suitable for the Project.

(v) Planning law and processes provide for land use control and policy changes where the change is consistent with the objectives of planning established under the Act.

(vi) Acquisition of land reserved for a public purpose necessarily remains subject to implementation, funding, and any change to policy.

(vii) There is no barrier to a change in land use, or policy vision for the land, if the change is consistent with the principles of net community benefit and sustainable development.

(viii) The assessment of impact will be influenced in this case by the knowledge that the Stabling Facility is a key component of the Project as described in the Public Works Order. While clearly identified as an opportunity for inclusion in the Chain of Parks, it has not been demonstrated that the wholesale inclusion of the Heatherton Clean Fill site is fundamental to the achievement of the broader Chain of Parks policy vision [150].

Mr Barlow acknowledged and provided a detailed assessment of the policy and Planning Scheme support for the Chain of Parks concept, as well as the State-level support for the Project in the Plan Melbourne Addendum. His evidence was that developing the site for the Stabling Facility would be consistent with the purpose of the Green Wedge and broader policy directions for non-urban land. He concluded the planned use of the site for open space was not a constraint on the Stabling Facility proposal because there are other options available to augment the Chain of Parks.

Mr Barlow supported identification of a replacement site and considered this should require a 'whole of government' initiative starting with a review of the Chain of Parks concept and the current acquisition strategy. He did not believe a replacement site needed to be identified before the Stabling Facility was constructed, but considered the process should seek to identify sites that:

- Have a similar land area.
- Have direct connections to the current Chain of Parks open space or would allow connections into land identified for future open space (i.e. a future link in the 'chain').
- Provide opportunities to deliver both passive and active recreational outcomes [151].

Kingston provided extensive material explaining the background, policy support and current status of the Chain of Parks concept in support of its submission the site should not be developed for the Stabling Facility. As discussed, it submitted there should be further investigation and comparative analysis of the Stabling Facility location through a supplementary EES.

Kingston identified various issues it believed the EES did not adequately address. It highlighted positive elements of its alternative plan for the site, including the retention of Old Dandenong Road and the 'green' roof. It submitted that if the IAC did not support its primary recommendation about a supplementary EES, it should recommend:

[150] D774, pp 77,78
[151] D73, p30

1. Clear allocation of responsibility to SRLA to identify and secure a site as a replacement and comparable (by location, size and configuration) of a Regional Active Open Space for the Chain of Parks.
2. The vesting of the so-called "Kingston Linear Park Reserve" as public open space to Kingston City Council.
3. Provide alternative pedestrian and cycling connections at or through the proposed Stabling Yard via:
   (i) a reinstated Old Dandenong Road;
   (ii) upgrade the Kingston Linear park reserve as a pedestrian and bicycle connection;
   (iii) a signalised crossing on the Kingston Road adjacent to Pietro Road;
   (iv) a shared use pathway across the Kingston Road frontage
   (v) a shared use pathway on the western side of the Dingley Bypass;
   (vi) incorporation of the Lantrak site (west of Dingley Bypass) as open space;
   (vii) secondary (internal) public access and connections through the new wetland areas between Henry Street Linear reserve and Dingley Bypass; and
   (viii) development and delivery of a plan to integrate the recreation opportunities adjacent to the stabling facility, including internal playground and play facilities and a permanent playground facility.
4. Visual screening to be provided at the Stabling Yard (once completed) by a combination of landscaping and the introduction of green roof infrastructure outlined in and determined through, the Urban Design Strategy [152].

Kingston provided revised approval documents that would address these matters.

MTTY provided extensive submissions about the background to the Chain of Parks concept, the history of the Stabling Facility site and the anticipated amenity, traffic, environmental, health, social and other impacts. They opposed the use of the site for the Stabling Facility and submitted it should be developed as part of the Chain of Parks. This would be consistent with the extensive policy and Planning Scheme support for this use, and State Government commitments.

They relied on the evidence of Mr Tesdorpf who provided a planning history of the site (and the Chain of Parks concept) and outlined the applicable planning provisions and policies. His evidence raised various issues about the definition of the Stabling Facility, its 'industrial' character and the adequacy of the EES assessment of alternative sites. He concluded the Stabling Facility was inconsistent with the long-established planning policies and would undermine the Green Wedge and Chain of Parks concepts.

MTTY sought a recommendation that the site is not developed for the Stabling Facility, and that a supplementary EES be required to re-assess the site and alternatives, including other areas of the Project that involved contaminated land.

The concerns raised by MTTY were echoed in many submissions, including those from environmental groups, community organisations and individuals. These included the Green Wedges Coalition, Defenders of the South East Green Wedge and Kingston Resident's Association, amongst others.

(iii) Discussion

The IAC acknowledges the extensive and longstanding policy support from the State government and Kingston for the Chain of Parks concept and the role the Stabling Facility site would have in

[152] D756, p7

delivering the concept. The concept has widespread support and community expectations about its delivery have understandably developed over many years. These matters were not disputed by the Proponent or any submitters or experts.

Submissions and evidence about the Stabling Facility raised several issues, including whether the existing policy framework and Planning Scheme provisions in support of the Chain of Parks preclude the use of the site for the Stabling Facility. The IAC acknowledges the extensive support for the concept, but notes the Project is a State-significant project that is consistent with and will implement many key elements of Plan Melbourne 2017-2050. It has explicit support in the Plan Melbourne Addendum 2019. Although there have been various commitments about the use of the site as part of the Chain of Parks, it is open to the State Government to develop and implement new policy priorities, and in this case to facilitate a State-significant project. In this broad sense, the IAC agrees with the Proponent that the location of the Stability Facility is consistent with higher order planning policy and is not precluded by the Chain of Parks concept.

The IAC is satisfied the Stabling Facility is an appropriate use within a green wedge area, consistent, for example, with the siting of the Pakenham East rail facility. The IAC agrees with Mr Barlow's evidence that the policy framework for green wedge areas and Planning Practice Note 62 (Green Wedge planning provisions) provide for infrastructure to locate in these areas.

In order to address the loss of the Stabling Facility site from the Chain of Parks concept, the Proponent proposed the following 'objective' be included in the POSF:

> Directly, and as appropriate via the Public Open Space Expert Panel, work with the City of Kingston, the Department of Environment, Land, Water and Planning and other stakeholders to identify alternative land that could contribute to the Chain of Parks concept, such as land:
>
> - having similar land area;
> - having direct connections to existing open space in the Chain of Parks or allowing connections into land identified for future open space;
> - providing opportunities to deliver passive and active open space [153].

The IAC strongly supports this approach but considers it should include a requirement to establish an acquisition process for the land that is identified. Elsewhere in this report, the IAC has recommended:

- the term 'objectives' in the POSF summary table be replaced with 'actions' to make it clear that an outcome is required.
- the Minister approve the POSF.

The changes would elevate the status of identifying an alternative site and establishing an acquisition process.

The recommended POSF is included at Appendix H.

(iv) Findings

The IAC finds:

- The use of the site for the Stabling Facility is not precluded by policy support for including the site in the Chain of Parks concept.
- The use of the site for the Stabling Facility is not inconsistent with the intended use of green wedge areas.

[153] D786, summary table (including additional text recommended by Mr Barlow)

- The Project should include a requirement that a replacement site for inclusion in the Chain of Parks be identified and an acquisition process be established.

12.5 Clayton

12.5.1 What did the EES say?

The EES assessed three station site options and the preferred site shown in Figure 5. The site was selected because of its proximity to the existing railway station and bus interchange and minimal impacts on the existing Cranbourne/Pakenham line rail viaduct.

The location and key land use planning and urban design elements of the Clayton Station are shown on the Clayton Surface and Tunnel Plan. General and place-specific design guidance is provided in the UDS.

The key issue to be resolved is:

- station location and future development.

12.5.2 Evidence and submissions

The Proponent outlined the various options that were considered and the rationale for selecting the site. It submitted the exhibited location would achieve the best public transport, community and precinct outcomes. It did not support the relocation of Clayton as sought by some submitters for various technical and design reasons outlined in D217.

Mr Barlow supported the location and configuration of the site and was satisfied land use and amenity impacts would be addressed through the various mitigation measures.

Monash generally supported the location of the station and submitted its primary concerns related to traffic circulation and keeping Carinish Road open. This is discussed Chapter 15.5. It expressed concerns about the treatment of the Remembrance Garden, discussed in Chapter 11.5.

Submitters sought alternative sites for the station, including under Clayton Road and underneath Carinish Road and the existing Metro viaduct.

12.5.3 Discussion

The IAC accepts the rationale for the location of Clayton Station and the Proponent's advice about various technical and engineering constraints that would preclude alternative sites sought by submitters. Subject to its recommendations about the Remembrance Gardens and Carinish Road, the IAC is satisfied the site is acceptable and that detailed design issues can be resolved through future planning processes.

12.5.4 Findings

The IAC finds:

- The Clayton SRL Station site is suitable, having regard to the opportunities and constraints affecting other options in the area.

12.6 Monash

12.6.1 What did the EES say?

The EES assessed seven station site options and the preferred site is shown in Figure 6. The site was selected due to its proximity to Monash University and ability to service the future development of the Monash NEIC.

The location and key land use planning and urban design elements of the Monash Station are shown on the Monash Surface and Tunnel Plan. General and place-specific design guidance is provided in the UDS.

The key issue to be resolved is:

- station location.

12.6.2 Evidence and submissions

The Proponent outlined the various options considered and the rationale for selecting the site, including its ability to service the University and NEIC. It acknowledged submissions about the integration of the station with other public transport, including future light rail and bus routes but submitted they were beyond the scope of the Project and would be addressed through other processes. It submitted the proposal for an additional entrance at the corner of Howley's Road and Ferntree Gully Road was not feasible because of the proposed rail crossover in the area.

Mr Barlow supported the location and configuration of the site and was satisfied it provided the best balance between competing demands.

Various submitters proposed alternative locations for the station, including sites further to the north and within the University.

As noted, Monash University withdrew its original submission that supported an alternative site further to the north and subsequently supported the exhibited site.

Monash Community Family Co-operative Ltd operates a childcare centre facility at 56 Howleys Road, Notting Hill that would be acquired for the Project. It noted the discussions it was having with the Proponent and Monash University about the future of the facility and its acquisition.

Other submissions raised issues about the connectivity of the station with other public transport infrastructure and sought an additional station entrance to the north.

12.6.3 Discussion

The IAC is satisfied the proposed station site is well located to service Monash University and the NEIC and there would be no net benefit in providing a station site further to the north. Although some submitters believed the station should be located within the University, the IAC understands this would have a range of negative impacts and is not supported by the Proponent or the University.

The IAC accepts the Proponent's advice that an additional entrance to the north is not feasible and that coordination with other public transport services will occur through other processes.

The exhibited Surface and Tunnel Plans included two operational options that provided a station entrance on the north side of Normanby Road and an entrance to the south, within the University. These were carried over into the Proponent's final Surface and Tunnel Plan.

12.6.4 Findings

The IAC finds:

- The Monash Station site is suitable and well located to service Monash University and the NEIC.

12.7 Glen Waverley

12.7.1 What did the EES say?

The EES assessed six station site options and the preferred site is located to the south of Coleman Parade and the Glen Waverley Metro station as shown on Figure 7. The site was selected because of its proximity to the Metro railway station and bus interchange, and minimal impacts on the existing rail line.

The location and key land use planning and urban design elements of the Glen Waverley SRL Station are shown on the Glen Waverley Surface and Tunnel Plan. General and place-specific design guidance is provided in the UDS.

The key issue to be resolved is:

- station location and future development.

12.7.2 Evidence and submissions

The Proponent outlined the various options considered and the rationale for selecting the preferred site. It submitted the site would deliver the best public transport, community and precinct outcomes. It did not support the alternative sites sought in submissions for various reasons, including greater community disruption during construction, impacts on the Glen Waverley Secondary College and the existing bus interchange. These responses were outlined in D218.

Mr Barlow supported the location and configuration of the site and concluded the Project would have significant longer-term benefits for the activity centre.

Monash generally supported the site but raised issues about providing a paid interchange, the closure of Coleman Parade and replacement parking. The written submission from Vicinity Centres (S278) preferred options 4, 5 and 6 in order to improve integration with existing facilities and services, including The Glen Shopping Centre. Other submitters preferred alternative sites.

12.7.3 Discussion

The IAC is satisfied the proposed station site is well located to link with the existing station and bus interchange and accepts the options assessment in the EES. The options supported by Vicinity Centres would be more proximate to the northern area of the activity centre, but would raise various design and construction challenges, and involve more extensive impacts on existing land uses as described in the EES and D218.

Traffic, parking and interchange issues raised by Monash are discussed in Chapter 15.7.

12.7.4 Findings

The IAC finds:

- The Glen Waverley SRL Station site is suitable and well located to integrate with the Glen Waverley Metro station and bus interchange.

12.8 Burwood

12.8.1 What did the EES say?

The EES assessed four station site options that were subsequently refined to two (the proposed site and a site on the northern side of Burwood Highway). The preferred site is located on the southern side of Burwood Highway as shown in Figure 9 and provides a pedestrian overpass to link the station with Deakin University and other destinations to the north.

The EES identified various advantages of the proposed site, including its large size, development potential, minimal construction impacts and proximity to Deakin University. The site to the north of the highway (within the Bennetswood Reserve) was not preferred for various technical and planning reasons, including the loss of active open space and site contamination.

The location and key land use planning and urban design elements of the Burwood SRL Station are shown on the Burwood Surface and Tunnel Plan. General and place-specific design guidance is provided in the UDS and open space is addressed through the POSF.

The key issue to be resolved is:

- station location and future development.

12.8.2 Evidence and submissions

The Proponent supported the proposed station site and provided an overview of the relevant EES material and responses to submissions in its Burwood Position Paper (D214). It noted the EES did not consider an option (as sought in some submissions) for the station to span both sides of the highway with entrances on either side for various technical and operational reasons.

Mr Barlow supported the station site and noted the improved accessibility to the local area, including Deakin University, Presbyterian Ladies' College and other educational establishments.

Whitehorse generally supported the proposed site subject to concerns about open space impacts, the treatment of the Gardiners Creek Reserve and the pedestrian crossing of Burwood Highway, as discussed in Chapter 11.6.

Mr Czarny supported the proposed site but raised general concerns about the lack of design detail in the EES and particularly the future precinct planning shown on the Surface and Tunnel Plan. Mr Czarny's specific concerns about the Burwood Surface and Tunnel Plan included the configuration of the sites identified for future precinct planning, including the elongated site along the western boundary and the southernmost site. He believed the western site raised various design issues associated with its integration with Gardiners Creek and the southern site should be abandoned.

12.8.3 Discussion

The IAC agrees the proposed station site is acceptable and appropriately responds to the various locational factors described in the EES and outlined by the Proponent. The IAC accepts the position of the Proponent that alternatives such as locating it to the north of the highway or spanning the highway would have significant implications and design challenges.

The Surface and Tunnel Plan and design guidance in the UDS provide a suitable framework for addressing the various design issues raised by Mr Czarny, particularly in relation to the Gardiners Creek interface and development of the sites that will be subject to future precinct planning. As discussed earlier, the IAC does not believe these sites should be characterised as building

footprints and there should be greater flexibility and recognition of the potential mix of uses, including additions to the public realm.

The IAC does not agree the southern site identified for future precinct planning should be removed from the Surface and Tunnel Plan to provide additional open space. As noted in Chapter 11, there will be no net loss of open space once the Project is completed, and it is reasonable that this site be identified for development, whether that be for buildings, public realm or other activity.

12.8.4 Findings

The IAC finds:

- The Burwood SRL Station site is suitable, having regard to its proximity to Deakin University, other education facilities and the constraints affecting other potential sites.

12.9 Box Hill

12.9.1 What did the EES say?

The EES assessed five station site options and the preferred site is shown on Figure 10. The site was selected because of its proximity to the existing Box Hill Metro railway station and bus interchange.

The location and key land use planning and urban design elements of the Box Hill SRL Station are shown on the Box Hill Surface and Tunnel Plan. General and place-specific design guidance is provided in the UDS.

The key issues to be resolved are:

- station location and future development
- impacts on existing and approved residential development.

12.9.2 Evidence and submissions

The Proponent outlined the various options considered and the rationale for selecting the preferred site. Key considerations included its proximity to the existing Box Hill railway station and bus interchange, impacts associated with residential and commercial towers, and maintaining a suitable station depth for passenger movements. The preferred option was considered to provide the best overall outcomes across the five assessment criteria of productivity, connectivity, liveability, cost and deliverability.

Mr Barlow supported the site as the optimal location for multi-modal transport interchanges, but acknowledged various construction issues including property acquisition, temporary loss of open space and amenity impacts.

Whitehorse generally supported the proposed station site, subject to concerns about various open space, heritage, traffic and movement, and interchange issues. It sought changes to the Box Hill Surface and Tunnel Plan, including a widened area of public realm between Whitehorse Road and the Box Hill Gardens and the provision of an east-west link behind the heritage buildings on Whitehorse Road.

Various submitters preferred alternative sites, including options 1, 2, 4 and 5 that were assessed in the EES. The support for these sites was based on reducing the impacts on residents, business and heritage.

(i) Discussion

The IAC agrees the proposed station site is acceptable and appropriately responds to the various locational factors described in the EES and outlined by the Proponent. The key factor in support the site is its proximity to the Box Hill Metro station and bus interchange. This is a fundamental locational advantage and would make a significant contribution to enhancing Box Hill's Metropolitan Activity Centre role in the future.

As discussed in Chapter 15, this proximity would facilitate a paid interchange connection in the future, although not providing that connection now as part of the Project is a lost opportunity.

The IAC acknowledges the station's construction will have significant impacts on business and residential development, this is true to varying degrees for all the site options suggested by submitters.

The 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 on Whitehorse might be retained.

12.9.3 Findings

The IAC finds:

- The Box Hill SRL Station site is suitable, having regard to its proximity to the existing Box Hill Metro station and bus interchange.
- Detailed planning issues should be further considered during the UDLP and precinct planning processes.

12.10 Recommendations

The IAC recommends:

SCO14 Suburban Rail Loop East Incorporated Document

Adopt the recommended version included at Appendix F.

Include any consequential changes to reflect the revised tunnel alignment under Monash University.

Surface and Tunnel Plans

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 pick-up/drop-off spaces*'.

Urban Design Strategy

Update the 'place-specific requirements diagrams' to reflect the Inquiry/Advisory Committee's relevant recommendations, including recommended changes to the Surface and Tunnel Plans.

Environmental Management Framework

Include the following change:

- **New EPR LUP5 to require the preparation of a planning permit application guide under the Specific Controls Overlay 15.**

This change is included at Appendix G.

Public Open Space Framework

Include the changes included in the recommended Public Open Space Framework at Appendix H.

SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document

Adopt the Proponent's final version (D790)

Include any consequential changes to reflect the revised tunnel alignment under Monash University.

12.11 Overall conclusions on land use planning and infrastructure

Subject to the recommendations of the IAC, there are no land use planning or infrastructure impacts that preclude the Project being approved or the evaluation objective being achieved.

13 Social, community and human health

13.1 Introduction

Social, community and human health is discussed in:

- EES Technical Summaries:
  - Human Health
  - Social and Community
- Technical Appendices:
  - M.1 – Human Health Existing Conditions
  - M.2 – Human Health Impact Assessment
  - P.1 – Social and Community Existing Conditions
  - P.2 – Social and Community Impact Assessment.

The evaluation objective is:

> 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.

As exhibited, the EES proposed five mitigation measures in the EPRs to manage the impacts of the Project on social, community and public health. These included:

- EPRs: SC1 – SC5.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN08 –Businesses and dwellings acquired or displaced for the Project (D242)
- TN25 – Presentation notes of Mr Weston (D401)
- TN28 – Land acquisition process (D409)
- TN36 – Residential and Business Support Guidelines updates (D442)
- TN37 – SRL community projects fund (D463)
- TN46 – Uniting AgeWell, Box Hill (D726).

Additionally, the IAC had regard to:

- relevant submissions and evidence
- Attachment E of the exhibited EES: 'EES Community Engagement report'.

Table 9 lists the social, community and public health evidence.

Table 9 Social, community and public health evidence

Party	Expert	Firm	Area of expertise
Proponent	Glenn Weston	Public Place	Social impacts
Kingston	Daniel Ferguson	The Community Collaborative	Social impacts
Whitehorse	Judith Stubbs	Judith Stubbs and Associates	Social impacts
Monash University	Judith Stubbs [154]	Judith Stubbs and Associates	Social impacts

[154] Evidence filed but not called at the Hearing

Proponent	Jackie Wright [155]	Environmental Risk Science	Human health
Move the Train Yard	Vicki Kotsorilis [156]	Medical practitioner	Human health

13.2 Project wide

13.2.1 What did the EES say?

The EES identified that social and community impacts will include potential changes to:

- private residential property owners and occupiers
- social assets such as educational, recreational, health, religious and sporting facilities, community accessibility and social networks
- community values
- amenity for residents and the community
- perceptions of safety
- valued places, including public open space and recreation reserves.

The EES noted that due to existing and ongoing construction in places such as Box Hill and Clayton, there will be cumulative impacts to be considered within this impact assessment for each location. Additionally, broader precinct planning and land subject to a future precinct planning process would result in cumulative impacts. The EES noted:

> Pending the physical scope of the wider precinct planning and land subject to a future precinct planning process, this could result in beneficial or adverse cumulative impacts on the users of open space, recreational facilities or social infrastructure. They could also result in impacts on the same residents considered in this assessment [157].

Rather than repeating information, Human Health issues are predominantly dealt with in Chapters 6 and 9. Likewise there is a significant cross over with public open space and recreational values, in the main the key issues relating to this are covered in Chapter 11 in relation to the EMF and POSF.

The key mitigation measures are through the EMF, BRRSG and RSG.

The key issues to be resolved are:

- impacts of recently planned and significant new infrastructure on residents and businesses
- direct impacts on sensitive uses
- whether mitigation measures will appropriately offset key impacts.

13.2.2 Evidence and submissions

The Proponent affirmed many times during the Hearing the most significant benefit of the Project is that, apart from the six above ground station areas and the Stabling Facility, the whole 26-kilometre route of the SRL will be underground, which will ensure there are very few impacts, including social impacts.

Technical Appendix P2 Social and Community Impact Assessment was prepared by the Joint Venture and exhibited, along with a peer review assessment undertaken by Mr Weston of Public Place, who gave evidence.

[155] Generally dealt with in Chapters 6 and 9
[156] Generally dealt with in Chapters 6 and 9
[157] TA P.2 Social IA

Table 4-3 of Technical Appendix P.2 provided an assessment of the social impacts as follows:

- Very High: significant investment in mitigation and/or project redesign is required
- High: additional mitigation measures would be highly beneficial
- Medium: additional mitigation measures should be considered
- Low: level of social impact would be addressed by mitigation measures
- Negligible: negligible social impacts expected.

The Proponent recognised the social impacts across station areas and for the Stabling Facility will vary from little to no impact to significant impacts. It was confident the EMF and other mitigation measures would ensure impacts be reduced so far as is practically possible and that acquisition would be one key mitigation for property in the direct path of the Project.

Mr Weston disagreed with the impact ratings and considered the research that led to the ratings was too confined and problematic. He noted ongoing engagement with all stakeholders and the community will be particularly important to inform community awareness of the various stages of the Project and impacts of construction and operation.

In acknowledging the impacts of property acquisition, Mr Weston agreed that for those affected, forced relocation is a major disruption. In addition, he acknowledged the high sensitivity of the social impacts on aged care and community facilities in Glen Waverley and Box Hill. His evidence did not undertake new primary research and noted mitigation through the EMF, BRRSG and RSG will be critical to offset the impacts. He recommended there be explicit recognition of and a strategy to deal with the sensitivities of aged care residents and/or residents subject to prolonged exposure.

In his presentation to the IAC, Mr Weston concluded:

> Inserting major transport infrastructure into an existing urban environment is a significant challenge and some degree of disruption to the use and enjoyment of community resources and associated social impacts is inevitable.
>
> The Suburban Rail Loop East Project can be delivered in manner that ensures negative social impacts remain within tolerable limits [158].

The IAC requested a consolidated summary of businesses and properties to be acquired (RFI No 63). The Proponent responded to this early in the Hearing (TN08, D242). In summary, the Proponent identified 314 properties to be acquired for the Project, of which 182 are in Box Hill.

Mitigation is proposed through various means, including the EMF, the BSG, RSG and the BRRSG.

The Councils focused on specific impacts relating to their municipalities, likewise some landholders made submissions and presented to the Hearing about their specific issues in relation to stations and the Stabling Facility. Site specific issues are dealt with in the following sub-chapters.

Whitehorse submitted there was a lack of transparency in the overall impact ratings. It contended the author of the social and community Impact Assessment was not called to provide evidence, which it contended affects the weight the IAC can give to the stated impacts.

Whitehorse commented that much had been made by the Proponent that the majority of works will be underground and contended that it narrowed the focus of attention to the above ground stations. Whitehorse noted that should not mean there is a lesser status or less adverse impacts because of this. It contended the stations need to develop positive outcomes in their own right and the UDS and other means are intended to do that.

[158] D365

Whitehorse and Monash submitted the RSG needed to be redrafted to ensure that the audience to whom it is directed can understand the impacts and how these might be mitigated. It noted:

> Those residents will have a range of levels of literacy, knowledge of English and technical competency. Many of those residents will – by virtue of the Project – be in some discomfort or distress. The RSG should be written in plain English, be accurate ad consistent, avoid unnecessary repetition, explain why the RSG exist having regard to Project approvals, include explanation of technical terms, and explain where further assistance in understanding the RSG may be obtained … [159].

Further, the Councils noted the RSG should establish entitlement to management measures where trigger levels are met, not a discretion to consider. The two Councils noted that what may be a trigger in one area, where it would have a generally higher level of noise (for example in Box Hill), may be different to Burwood where it is a generally much quieter area.

In closing, the Proponent summarised the key social impacts being residential acquisition, temporary and permanent impacts to existing and planned public open space, amenity impacts during construction, and business and retail disruption and displacement.

It urged the IAC to prefer the evidence of Mr Weston to Dr Stubbs, noting the detail and extent of the underground tunnel, thus lessening overall impacts on localities affected by the Project and that the new stations would regenerate and bring new opportunities to the various activity centres – both existing and new. Taken together, the Proponent noted the BRRSG, the EMF and the POSF:

> … makes for unprecedented levels of attention to social and community impacts and business and retail impacts and how they are mitigated from the outset … [160].

The Proponent noted the extent of early notice of acquisition to reflect the impact of the Project at this stage and the legal basis for acquiring land and property for major infrastructure builds.

Multiple submitters in the station areas, particularly in Monash and Whitehorse municipalities, raised issues about the extent of tunnelling under their properties, the subsequent application and ramifications of SCO15, the potential for damage and the loss of value of their homes.

13.2.3 Discussion

There is no doubt there will be significant disruption across all above ground sites and areas for very long time periods during the construction process and then across different issues relating to operation.

Access to facilities such as shops, businesses, residential areas, community facilities, parks and gardens will change, some permanently. Some facilities will be reinstated, others not. Some will have time to relocate and may be out of action for several years, some may never return. The nature of the Project means communities will need to adjust and be resilient in coping with this change. Many consider it to be an exciting time, many consider it to be completely unfair.

Some have asked why they should bear the brunt of this Project, why they should lose their homes and businesses, why should they not be able to redevelop their sites (some with existing permits), why the tunnel is located under their property, why they should have to deal with construction issues for up to 10 years. They have questioned the haste and fairness of the Project. These are all genuinely held issues and questions.

[159] D757, para 34
[160] D794, para 30(6)

Integrated decision making at Clause 71.02-3 of the VPP specifically responds to the higher level matters, where the test for net community benefit is in favour of all Victorians – present and emerging. This Project is one that has the higher order test of significant community benefit for future Victorians, in that benefits will accrue to significantly more people than the immediate local areas. The Project will benefit a large cohort of the population of Melbourne, but particularly in the eastern and southern middle regions through Stage 1. If the Project takes pressure off car travel, these benefits will be more widespread.

However, it must be recognised the benefits must be carefully weighed up by the cost to those most impacted. It would not be fair to take away lifestyle, family homes, businesses and community assets without real and explicit recognition of the immediate and ongoing needs of all impacted. The EPRs and other mitigation measures must be carefully tailored to ensure the affected communities are treated with respect and fairness at all times. In effect, many will be sacrificing their home and lifestyles for the benefit of others.

The IAC acknowledges property acquisition is a difficult issue to deal with. Many properties are to be acquired. There are legislative processes in place to determine appropriate compensation and the like, with the key social issue being the sense of loss and the inability or reticence for residents to move elsewhere in comparable locations. The impact of losing a home and having to relocate would be devastating to many. Replacement elsewhere may not be acceptable nor comfortable and the psychological impacts of this needs to be managed with care, empathy and understanding.

The IAC is not able to comment further on the proposed property acquisition program or process as it is beyond the scope of its considerations. However, it recognises the Proponent needs to engage with affected land and property owners in an inclusive, constructive and timely manner at all times. It does however, discuss the opportunity for voluntary acquisition of property, including for businesses and homeowners.

13.2.4 Findings

The IAC finds:

- The Project will result in significant loss of property for many residents and business owners, particularly in Box Hill.
- The Project will ultimately result in a significant net benefit for the community of Melbourne and Victoria for further generations.

13.3 Cheltenham

13.3.1 What did the EES say?

The EES noted there would be:

- one public and four commercial properties to be acquired
- occupation of the southern extent of Sir William Fry Reserve, with some access compromised, limiting open space availability to the local and regional communities, including potential loss of events such as the Farmers Market
- amenity impacts that may decrease amenity and enjoyment of the spaces
- significant increase in construction vehicles that has the potential to adversely impact perceptions of safety, particularly for small children, pedestrians walking to the Sir William Fry Reserve or people using the playground

- community concern about the potential for the Project to be the catalyst for more intensive development on the site, with resulting changes affecting the ability of the community to access, use or enjoy open space.

The IAC notes the Cheltenham Skate Park would be demolished; however it is proposed to replace the skate park within the same catchment prior to demolition. The definition of 'same catchment' is within a 1.6 kilometre radius but the actual location remains unknown.

The key issues relate to:

- loss of community infrastructure.

13.3.2 Evidence and submissions

As noted in Chapter 11, Mr Weston gave evidence that the skate park and the basketball facility should be reinstated as soon as is practically possible to offset the impacts of the Project.

Kingston expressed significant concern about the many opportunities and facilities the Sir William Fry Reserve provides, which it noted '*… is the largest and arguably most valuable open space in the Kingston municipality*'. It generally supported the Project, subject to its alternative design being generally implemented.

In its opening submission, Kingston discussed its high level of engagement with its community on a range of State transport projects and on this matter in particular. It sought an inclusive and collaborative role with the Proponent going forward. Kingston submitted that from a social perspective it would be important to provide replacement of key facilities and uses currently located in the Sir William Fry Reserve. Kingston sought several changes to the social and community EPRs in relation to dealing with open space, alternatives sites and uses and reference to community groups with regard to the Sir William Fry Reserve.

Bayside Council made submissions that the Sir William Fry Reserve was integral open space to its community and how the Cheltenham site is ultimately developed will have impacts on Bayside residents in close proximity.

13.3.3 Discussion

The IAC agrees with Mr Weston the loss of the skate park and basketball facility would be unfortunate and that it should be reinstated. The IAC agrees with Kingston that consultation on the future use of the Sir William Fry Reserve is important and ongoing.

The Proponent did not support the Kingston alternative plan, although it noted there were some elements that could be considered as final plans are developed. The IAC agrees.

Particular matters relating to public open space are covered in Chapter 11.3.

13.3.4 Findings

The IAC finds:

- Subject to the relocation of the skate park and basketball facility before construction works commence, the social impacts are manageable.

13.4 Stabling Facility

13.4.1 What did the EES say?

The EES noted there would be:

- one residential and seven commercial properties to be acquired
- fragmentation and possible diminishment of the potential natural values of the Kingston Green Wedge
- concerns about the potential for further encroachments within the green wedge
- cumulative impacts of recent freeway construction on the Kingston green wedge
- loss of an area that has previously been set aside for a regional sporting complex.

A key mitigation measure in the POSF is the identification of alternative land to contribute to the Chain of Parks.

The key issues relate to:

- detrimental impact of community expectations in relation to the loss of a key element of the Chain of Parks
- local benefits to the community
- efficacy of the HHRA, including dust in air exposure modelling (discussed in Chapters 6 and 9)
- better understanding of clean and uncontrolled fill at the site (discussed in Chapter 9).

13.4.2 Evidence and submissions

The Proponent acknowledged the significant impacts development and operation of the Stabling Facility would bring to the local community. Its primary position, however, was that the facility can only be built at this location and that so far as reasonably practicable, amenity issues will be appropriately managed and mitigated. It noted the various alternatives for the facility, and those put forward by the community, and made it clear none of these have been assessed as being suitable for the overall facility requirements.

Mr Weston noted there would be no tangible benefits to Heatherton and the surrounding community due to the loss of access to Old Dandenong Road and the loss of the potential regional sport facility in relation to the Stabling Facility. He agreed both issues result in clear disbenefit and the sense of loss of planned open space will be profound for the local community.

While Kingston did not call social evidence, it made submissions about the impact the proposed Stabling Facility will have on the local community. Its submissions concentrated on amenity impacts and the history of development of the proposed site for public open space purposes as well as the amenity impacts should it proceed. It referred to community engagement and the expectation this land would be used for open space and the subsequent sense of loss now being felt. Its submission noted:

> It would be difficult to find a community or groups who have provided such long-term commitment to a planning policy and a locality. Community submissions, including comments about social and amenity impacts, together with what constitutes reasonable expectations as to future land use for these residents and groups, needs to be considered in this context [161].

Further, Kingston submitted:

> Not only did the residents in the locality never have their RAOS, in waiting for it they have endured the impacts of landfill, clean fill and recycling activities – in the case of some residents, for decades. The expectation that this would come to an end has been stolen away to be replaced by the proposed, heavily industrialised form of the Stabling Yard [162].

[161] D541, para 2.135
[162] D541, para 2.139

Kingston was critical of the way in which the EES addressed the Stabling Facility, and it proposed an alternative concept, which was dismissed by the Proponent on many grounds. This proposal included increased buffers from the residential area, a 'green roof' over the western most part of the facility, retaining Old Dandenong Road, and more defined open space. As discussed in Chapter 12.4, Kingston called for a supplementary EES to deal with the location of the Stabling Facility, saying other options should be assessed.

Kingston provided information on how it had engaged with the Proponent about the Project and was critical about the way in which the EES and Proponent had ignored or dismissed many of its proposed initiatives. It highlighted its positive engagement and subsequent outcomes for other major infrastructure projects within its municipality and advised it has the internal governance structure to do the same with this Project. Kingston advised it had initiated engagement with its community to understand its position on the EES and through these processes received 398 submissions to initial ideas and 180 submissions to draft documents [163]. Kingston advised that post this current EES process, it seeks to continue this level of engagement and involvement in the Project going forward.

In closing, Kingston was critical of the Proponent's approach to considering and then dismissing its submissions about an alternative site and its alternative proposal for the Stabling Facility. It contended the Proponent pre-determined the site based on its own assessments without regard to other options and then the Kingston proposal.

MTTY noted a number of key social impacts, including:

- loss of open space opportunities
- health and wellbeing of the community
- loss of community connectivity
- community disconnection
- the length of time for construction (up to 11 years).

Its primary recommendation was to move the Stabling Facility to an alternative location that does not introduce significant cumulative negative impacts to the community and its residents. MTTY called for a supplementary EES to further consider this location.

Its closing submission maintained its criticism of the location of the Stabling Facility. It considered the Proponent had treated the community with contempt and that it has not been fair in looking at alternatives. It was critical that social vulnerability was not taken into account and that it formed no part of the social impact.

MTTY noted '*The EES has assessed the impacts of the SRL construction and operation, but hasn't considered the bigger picture of cumulative impacts from all related construction work and precinct development that may occur simultaneously*' [164]. It concluded:

> The quality of life in this community has already been diminished by the anxiety of fear about what this proposal will mean for Heatherton, Clarinda and surrounds, and if the stabling yard and over a decade of construction goes ahead on this site, we will lose our quality of life due to constant noise, dust, light, and fear of what might happen at any moment [165].

MTTY concluded the overall assessment of the site and any alternative was inadequate.

As S363 noted on this issue:

[163] D541, paras 4.16 – 4.21
[164] D777
[165] D777

> As a result, I can not find a sufficiently detailed analysis from the SRLA that sets out the full extent of its reasoning for adopting the Delta site as the preferred location for the train stabling facility over other sites.

The community submitters expressed disappointment with the way in which they were informed about the Project and that overall lack of consultation with the Proponent about it. Many said they heard about it by mail, or from other residents.

In highlighting his overall support for the Project but commenting on the consultation process, S363 submitted the consultation process failed *'… to meet even the most elementary benchmark of what might be considered a genuine community and stakeholder engagement plan*'.

In closing, the Proponent was firm in its resolve that the Stabling Facility needs to be at the Heatherton location as exhibited. It considered the future layout and design, guided by the EMF and UDS would manage the site appropriately. It acknowledged the organisation and effort of MTTY and associated submitters, but said relocation is not an option for this facility.

13.4.3 Discussion

Community expectations

The impact of the announcement of this site and the work the local community then undertook in preparing and presenting evidence and submissions to the IAC is testament to the heightened concerns they have about the Stabling Facility. The IAC acknowledges these are genuinely held concerns, key of which relates to many years of putting up with various landfills, sand mining and other uses in the hope that in time, the land would be used for public open space purposes, as planned for by both State and Local Government.

That the use of this site for public open space purposes was deemed to be a genuine outcome is confirmed by various Government announcements over previous years. The sudden change in position for this site has caused great distress to this community and its Council. How to mitigate this is a difficult issue. On the one hand, there is an undisputed need for a Stabling Facility to support the Project's program of works.

The Proponent contended it undertook a review of 10 alternative sites and a more thorough review of three of those sites. While the IAC notes this assessment, it is in not in a position to review these other sites as there is very limited information about each site, nor is there sufficient information to enable the IAC to make any recommendations about whether any would be appropriate for a Stabling Facility. It initially expected that there would be more detailed information available to understand the assessment of alternative sites, but that was not the case.

The other option is to either recommend against this site on various planning and environmental grounds, or recommend it proceed, subject to further mitigation measures. Other parts of this report note the Stabling Facility can be supported at this site, subject to specific changes to the EMF and other approval documents.

The IAC considers it is the magnitude of the change, especially given recent freeway development, permits issued for the Alex Fraser site and then the rezoning of the subject site and surrounding land to the Green Wedge Zone in recent years that now results in confusion and in significant social disbenefits. The community expectation that in time, the adverse land uses will be converted to Chain of Park uses, is difficult to quantify.

Community benefit

The IAC agrees with Mr Weston, Kingston and the Heatherton submitters there is no local community benefit in locating the Stabling Facility at Heatherton. There is no offset that will mitigate either its tangible or intangible social impacts on this community. The IAC has previously determined that from land use and other perspectives, its location is acceptable. But that does not mean it is acceptable from a social perspective.

From purely a local social impact assessment, this site is not appropriate for the Stabling Facility. The deep-seated views of the community and Kingston is that this land has been long promised for public open space and recreational facilities as part of the Chain of Parks. While the Proponent correctly noted in closing this site, in itself, is not the Chain of Parks, but would contribute to a small part of it, does not dispel the fact that while not funded or approved, significant progress has been made to advance the regional sporting facility proposal.

Chapter 12.4 discusses this in more detail and the IAC finds that the use of this land for a Stabling Facility should only proceed (amongst other recommendations) if a suitable replacement site for public open space can be found.

While the location fails on social impact grounds, it can be, and has been assessed as suitable on other grounds in meeting the evaluation objectives. These impacts will be felt locally, however, in determining net community benefit, the IAC recognises the significant social benefits from the Project will be realised on a much wider geographic scale.

13.4.4 Findings

The IAC finds:

- The use of the Delta site for the proposed Stabling Facility will result in adverse social impacts for the immediate local community.
- The identification and acquisition of an alternative site to contribute to the Chain of Parks, including active open space, will assist in addressing broader community concerns about the lost opportunity for converting the site to public open space.
- While local social impacts are unable to be appropriately mitigated, further design of the Stabling Facility should attempt to minimise the local impacts (as noted throughout this report, for example, through increased buffers, replacement open space, widening of Kingston Road to four lanes, pedestrian crossing).

13.5 Clayton

13.5.1 What did the EES say?

The EES noted there would be:

- one public, 19 residential and 25 commercial properties to be acquired.
- temporary loss of the Clayton Remembrance Gardens and disruption to the Clayton Memorial Hall and St Peter's Church
- changes to land occupied by the Djerring Trail under the existing Clayton Railway Station.

The key issues relate to:

- social implications from the loss of the Remembrance Gardens.

13.5.2 Evidence and submissions

The Proponent noted the Project would improve the streetscape on Clayton Road, provide areas to stop and recreate and provide pedestrians with more comfortable spaces. The provision of

dedicated cycle paths, new and upgraded paths and laneways, upgraded pedestrian and cycle crossings and station cycle parks would improve accessibility for people accessing services and employment.

The Proponent observed there would be sustained and significantly reduced amenity impacts for the local residential and business community during construction and operation due to the loss of the Remembrance Gardens and then the change of character once the station was completed as it would take up a considerable portion of the garden area.

The Djerring trail is a regional facility that attracts users from Caulfield to Dandenong. It is part of a linear open space system that has emanated from the Level Crossing Removal program. The Project would acquire some of that trail that provides a playground and fitness equipment. This has the potential to displace people engaged in informal and formal exercise such as basketball and other organised sports as well as other users of the trail such as families riding bikes, older people walking, and commuters.

13.5.3 Discussion

The Remembrance Gardens is the only green space in this Activity Centre. It attracts people who use the seating and grassed areas to relax and reflect. It provides one point of access to the community hall and Church. It is a pleasant and peaceful environment. Acquisition of this public open space would temporarily compromise existing users of the hall for the duration of the Project's construction. Access to the hall and church from the Mary Street carpark would be retained.

The loss of the gardens would remove the only green space in proximity to the north side of the station and has the potential to reduce the attractiveness of Clayton Road for pedestrians and other users.

The EES noted that depending on the design of the station entrance, it is likely the Remembrance Gardens can be reinstated in a way that better provides for current and future community needs in Clayton. The EES considered integration of reconfigured open space in the Remembrance Gardens is expected to be considered a positive opportunity by the adjoining community.

As discussed in Chapter 11.5, the IAC is not confident the Remembrance Gardens can be easily reinstated post construction in a way that retains its inherent character. The layout of the Remembrance Gardens and some of its mature vegetation will be lost, with much of the garden area being used for the station entrance and pedestrian access. However, the IAC is satisfied the UDS seeks to achieve an appropriate design outcome and reinstate the existing garden quality.

As recommended in Chapter 11.5, the Remembrance Gardens should be treated as 'lost' open space in the POSF and replacement open space should be provided, in addition to the Gardens being reinstated.

While the Clayton Memorial Hall and St Peter's Church are to be retained, users will be compromised during construction, resulting in adverse impacts on the ability of these facilities to undertake normal activities. It could result in users of the hall and church seeking alternative facilities.

It is evident that the limited availability of alternative recreational facilities in the Clayton Activity Centre could result in some users being unable to secure replacement recreation infrastructure to continue current activities.

13.5.4 Findings

The IAC finds:

- The temporary loss of the Remembrance Gardens will be significant as a place to relax and reflect, as it is the only green space in the Clayton Activity Centre.
- Every effort should be made to reinstate the Remembrance Gardens consistent with the UDS.
- The construction and operational impacts on the Remembrance Gardens cannot be satisfactorily mitigated without the provision of replacement open space.

13.6 Monash

13.6.1 What did the EES say?

The EES noted there would be:

- One public and 34 commercial properties to be acquired, including:
  - Monash Community Family Co-Operative (MCFC), requiring children to relocate to another childcare centre before the commencement of construction
  - Normanby House, thus reducing the amount of student housing available on campus by 100 places, resulting in less students being able to access accommodation on campus as demand for housing exceeds supply.

The key issues relate to:

- impacts on the continued operation of the MCFC in its current location.

13.6.2 Evidence and submissions

Monash Station would provide new and upgraded bus, walking and cycling infrastructure which would benefit Monash University staff and students, as well as local businesses in the broader region, including the NEIC.

The key social impact relates to the MCFC, which is proposed to be acquired and relocated. The IAC was advised MCFC has operated the facility since 2010 (prior to this it was located elsewhere in the vicinity of the campus) under licence from Monash University which is the owner of the freehold. When asked by the IAC, the MCFC advised it is currently having further discussion with Monash University about the extent of the lease which is renewed every two years.

The MCFC noted its current location is extremely convenient to staff and students. It strongly opposed a new or alternative location on the basis that its clientele (children of Monash University staff and students) would be significantly disadvantaged if they moved off campus or elsewhere on campus as another site may not have the same locational and space advantages.

At the Hearing, the MCFC noted it is not a party to the confidential agreement between Monash University and SRLA and said it:

> … has not been provided with details of, any agreement that we understand may have been reached between Monash University and the Project proponent … and therefore cannot currently comment on whether (or to what extent) such agreement might mitigate Project impacts on MCFC [166].

As Monash University had formally withdrawn from the proceedings, the IAC did not have the benefit of any submissions. Monash (Council) did not comment on these submissions.

[166] D485, para 14`

Normanby House, which provides accommodation for up to 100 students will be acquired as part of the construction process, however its replacement location is a matter for Monash University.

13.6.3 Discussion

It is acknowledged Monash Station would provide new and upgraded bus, walking and cycling infrastructure. The option of providing a grade-separated crossing of Normanby Road would improve the perceptions of safety for pedestrians accessing Monash University from the station.

The key issue is the future location of the MCFC, which is not a matter that the IAC can resolve. However, it is clear the MCFC enjoys a current location that is beneficial to its clientele. Going forward, the Proponent, Monash University and the MCFC need to work together to resolve this.

The IAC recognises the importance of accessible and trusted childcare and that MCFC has been providing a service for staff and student for many years. As to whether MCFC is replaced in a comparable location is beyond the scope of the IAC role as are matters about acquisition and compensation if MCFC is lost from the land in question.

The IAC considers that if it can, the MCFC should be replaced in a comparable location. However, that is as far as the IAC can take this issue as matters about acquisition and compensation are outside the ambit of its process.

The issue of replacement accommodation for Normandy House is a matter for Monash University to resolve as part of its negotiations with the Proponent.

Apart from these two matters, staff and students at Monash University are expected to be able to continue using existing activities unhindered by the Project.

13.6.4 Findings

The IAC finds:

- The Monash Community Family Co-Operative is a significant asset to Monash University and its location provides benefits to its users.
- An alternative site for the Monash Community Family Co-Operative should provide similar benefits.

13.7 Glen Waverley

13.7.1 What did the EES say?

The EES noted there would be:

- three public, four commercial and 11 residential properties to be acquired, including:
  - Monash City Church of Christ
  - Monash Volunteer Rescue Centre
- loss of and/or reduced amenity to users of Kingsway Medical Clinic, Glen Waverley Library, Glen Waverley Uniting Church, Waverley RSL and visitors to the wider precinct, particularly impacting on the elderly and those with limited mobility.

The key issues relate to:

- impacts on the diverse culture and range of community facilities to be displaced.

13.7.2 Evidence and submissions

The Proponent acknowledged there will be significant disruption to local traders and businesses due to loss of car parking and ongoing construction over a sustained period of time. In recognising there will be displacement of community facilities and the need to replace car parking, the Proponent noted there would be sufficient time to find alternatives premises and sites to offset this.

Monash submitted the Impact Assessment did not adequately assess the social and community impacts of the Project. It was critical the author of the EES assessment was not called to give evidence and that Mr Weston did not undertake his own primary research. Although Monash did not call evidence in social and community impacts, it relied on the evidence of Dr Stubbs for Whitehorse with regard to the need for the Impact Assessment to allow for competent assessment of the adequacy of communication and stakeholder reengagement plans and the inclusion of an EPR requiring no net disadvantage.

While Monash was generally supportive of the Project, it raised concerns about the inadequacy of measures to support traders and residents affected by construction and noted:

> Further measures are required to ensure that the social and economic impacts of the Project are not disproportionately borne by these sectors of the community[167].

In its summary of recommendations, Monash sought:

- inclusion of the BRRSG into the EMF
- changes to the business and residential EPRs and guidelines
- strategies to address businesses likely to be affected in Glen Waverley and Clayton
- early acquisition for the proposed community facilities to be acquired
- inclusion of a new EPR requiring 'no net disadvantage' to residents, owners, occupiers and renters as a result of acquisition.

The proposed 'no net disadvantage' recommendation was challenged by the Proponent as being unreasonable and unworkable as it has no precedent or legislative basis in planning. It noted the recommendation was derived from the evidence of Dr Stubbs, however it is not a tool used in impact assessment in Victoria and it has no basis in the context of assessing impacts for major transport projects.

The Monash City Church of Christ (CoC Church) has been centrally located within the Glen Waverley Activity Centre for almost 70 years and provides a range of services to its local community. It is to be acquired for the Project. Its submission noted:

> The Church provides critical social value to the local Glen Waverley community through the extensive programs and services … in addition to pastoral care. The strategic location of the Church is critical for vulnerable persons to be able to find and access services and support networks at the Church. Without it, there would be a significant adverse impact on the social cohesion and wellbeing of nearby communities [168].

The EES recognised the CoC Church as a key social asset and accepted its relocation would result in adverse impacts:

> If the church was not able to maintain operations during the relocation, this would adversely impact a range of vulnerable persons in the local and regional community including the homeless, disabled groups, older people, children, mothers' groups and other community groups. For some of these users, there may be alternative facilities available through council

[167] D187, para 40(b)
[168] D707, para 20

> or other providers. However, if alternative services could not be found, this could result in socioeconomic hardship. Further, this could also result in reduced ability of otherwise social isolated persons such as stay at home mothers, the disabled or unemployed to meet others and form social networks [169].

The CoC Church agreed with Monash, which indicated it did not consider the Impact Assessment adequately addressed the social and community impacts of the Project.

The CoC Church appeared at the Hearing and acknowledged it will be acquired and sought changes to the EPRs and the BRRSG to specifically include religious organisations with other businesses. The CoC Church sought a new and specific EPR that solely addressed its issues, submitting '*… this is especially important for a facility such as the Church, which provides social programs and services to the local community including vulnerable persons'.*

At the Hearing, the IAC asked the CoC Church how and where its needs could be accommodated and the size of a suitable premise for temporary or permanent relocation. It had no specific response and advised it was a work in progress.

Mr Barnes presented on behalf of the Campbell Place Resident's Representative Committee and noted he was considering the interests of approximately 70 residents of 54 residential apartments and 102 aged care residents. While noting the long term benefits the Project will bring to the area, Mr Barnes raised issues about the overall amenity and access impacts on its residents. His submission urged for better communication with the Proponent and its contractors as the Project proceeds.

Submitter 364 recently purchased a property in Glen Waverley and was concerned there was no notice about the Project to prospective purchasers. The submitter expressed concerns about the liveability of his property and consequent impacts. He contended the lack of communication from the Proponent and Government has put his purchase at risk.

13.7.3 Discussion

Apart from the new station, other benefits to the Glen Waverley Activity Centre will include new and enhanced open space, improved cycle and pedestrian links and opportunities for new business to establish. Once completed, there is likely to be significant residential and commercial growth in the centre, which given Glen Waverley's status as a Major Activity Centre, is appropriate.

However, the loss of 11 homes is significant, and like other station locations, working one on one with the affected owners will be critical to minimise detrimental social impacts. The BRRSG provides for the early purchase of dwellings to make it easier for homeowners to relocate at a time better suited to their needs.

The IAC visited the location of CoC Church and observed it is well located, being adjacent to Centrelink, carparks, and the existing railway station. As acknowledged by the Church at the Hearing, its prominent location makes it highly visible to vulnerable persons, such as older people, those who are socio-economically disadvantaged, or those who are socially isolated. The IAC was advised these persons often use services offered by the CoC Church, such as food packages, low-cost food and drink, drop ins or pastoral care.

The Proponent accepts the impacts of the construction phase of the Project will result in reduced amenity for the local traders and users of the Glen Waverley Activity Centre. It further acknowledges the loss of the CoC Church and advised it was working with it to look for alternative

[169] EES Summary report

accommodation. The CoC Church provides a range of community services that benefit its congregation and other users, many of whom the IAC was advised, are vulnerable members of the local community. Walkability is important for many to enjoy the CoC Church's offerings.

The CoC Church itself was generally accepting that it would need to be relocated, its main issue was finding a space of similar size and function within the same catchment. It will be a couple of years before the CoC Church needs to move and the Proponent should make every effort to assist in finding an early and comparable replacement site that suits its needs.

The Proponent noted other facilities to be relocated (Waverley RSL, Monash Volunteer Rescue Centre). In all cases, continuity of service and the ability to continue to operate as best as possible must be a clear goal to minimise risk to its services and to the community served. The IAC notes some Waverley RSL service members might be vulnerable such as the aged, those experiencing poor mental health, or those reliant on the RSL as a focus point for their social network. The IAC notes the Monash Volunteer Rescue Centre will need to relocate prior to site establishment works.

The IAC recognises reduced amenity due to construction could diminish the ability of households to enjoy outdoor areas and/or dwellings, particularly during out of hours works. The RSG provide for graduated mitigations and for consideration of individual circumstances to assist vulnerable households be access tailored support as required.

Through Clause 71.2-3 of the VPP, Victoria assesses major projects on the basis of assessing the net benefit in favour of the community. It is long held that the benefits must be assessed for present and future generations and that a community is not just those in the immediate locality. For these reasons, the IAC sees no need to introduce any new assessment based on net detriment through this Project.

13.7.4 Findings

The IAC finds:

- The loss of the Monash City Church of Christ and other community facilities will result in a negative impact of the Project, unless suitable premises that are fit for the specific purposes of each facility can be found in a comparable location.
- The appropriate way to assess net community benefit is at Clause 71.02-3 of the VPP.

13.8 Burwood

13.8.1 What did the EES say?

While the Project will largely be built within an existing industrial facility to be acquired and on existing public open space (Sinnott Street Reserve), the EES noted there would be:

- two public, four commercial and 13 residential properties to be acquired
- loss of dwellings in an area opposite public open space that has a high level of amenity, including for those whose property is not being acquired
- loss of the Sinnott Street Reserve, resulting in the loss of trees and vegetation
- provision of a suitable grade-separated crossing of Burwood Highway
- a proposed electrical substation on the corner of Sinnott Street and Highbury Road that could create concerns about EMI and impacts on human health.

The key issues relate to:

- impacts of significant change in the local neighbourhood.

13.8.2 Evidence and submissions

The Proponent noted the impacts at Burwood would be minimal and while acknowledging there would be some displacement of residents from 13 residential properties, it considered finding replacement housing in the area would not raise the same issues as in Box Hill.

Whitehorse submitted the key social impacts for Burwood included:

- lack of a safe and convenient connection between the station and the north side of the Burwood Highway for Deakin University, Presbyterian Ladies College and Mount Scopus College
- extent of property acquisition, which it considered should be confined to the minimum extent necessary to deliver the station
- sufficient support should be provided to affected landowners and occupiers to enable them to secure and move to alternative accommodation in an equivalent location
- excessive acquisition of land for the proposed permanent acquisition of Sinnott Street Reserve for construction works
- amenity impacts for residents, business owners and operators, and the community generally for the duration of construction and the need to ensure there are appropriately robust, transparent, and measurable mitigation measures in place.

Whitehorse's opening submission noted:

> … there are a number of issues with the EES that need to be closely considered and addressed as part of this process, in order for the IAC, and submitters, to have confidence that the benefits and impacts (both positive and negative) of the Project have been properly identified and assessed, and ultimately that the Project will appropriately manage and mitigate those impacts.
>
> Some of those issues will need to be addressed by changes to design and potentially further investigation of alternative design options. Other issues can be more simply addressed through modifications to the planning tools or additions to the EPRs [170].

Dr Stubbs characterised Burwood as a relatively quiet, low density residential environment with high quality open space interspersed with light industrial activity. She undertook a limited survey of local residents who expressed a high level of satisfaction with amenity, community and the Sinnott Street Reserve. Some residents spoke to her about the lack of clarity about the Project, the impacts on amenity and their desire to remain in the area.

The scope of Dr Stubbs work was restricted to assessing social impacts in Burwood and Box Hill. She undertook surveys by questionnaires and face to face contact in the form of one-on-one discussions with residents who she thought might be impacted by the Project. Her evidence noted that renters would need particular attention, including the provision of financial and administrative support.

Dr Stubbs considered the social impacts in Burwood to be medium to high, mainly because of the acquisition of the 13 residential homes.

13.8.3 Discussion

The provision of the station, dedicated cycle paths, new and upgraded paths and laneways, upgraded pedestrian and cycle crossings as well as station cycle parks would improve accessibility for people accessing services and employment in Burwood. The new station is likely to create the ability for some form of activity centre subject to further planning consideration.

[170] D188, para 37, 38

The new station would create a Neighbourhood Activity Centre and provide for a range of shops and services. This may be a benefit for some, but due to the loss of some vegetation and trees, others might feel differently.

The land is currently used for electricity related plant and is clearly industrial in nature. It sits in the valley of Gardiners Creek and is prominent only from within the park valley. Unlike the other five stations, there is no retail or commercial activity at this site. The valley has a range of walking paths and is surrounded by diverse vegetation. As noted in Chapter 5.3, there are historical remnants of the former Drive-In theatre.

The results of the surveys undertaken by Dr Stubbs cannot be given much weight as the questions were not well crafted, nor could they be considered as open questions and there were few responses. It could not be seen as being representative of a social survey. While the IAC does not dispute her general findings, the nature of the survey and the results have not been given weight of any significance by the IAC.

A cluster of 13 residences are to be acquired for this station. The IAC did not hear from these residents, although it did have submissions from some other local residents. It notes the outcomes of discussion some residents held with Dr Stubbs as part of her research. From these submissions and evidence, there is some concern about the change in nature of the area. The IAC considers it may be somewhat easier for these residents to find replacement housing compared to those in Box Hill, given the nature of the predominantly detached housing in this area that extends west, south and east.

Overall, the IAC considers the social impacts for Burwood can be appropriately mitigated.

13.8.4 Findings

The IAC finds:

- The loss of housing for residents in Burwood will be significant and will need to be carefully managed.
- The social impacts for Burwood can be appropriately mitigated.

13.9 Box Hill

13.9.1 What did the EES say?

The EES noted there would be:

- one public, 72 commercial and 108 residential properties to be acquired, including:
  - over 60 predominantly Asian businesses on Main Street and Market Street adjacent to Box Hill Central which contribute to a sense of place as a hub for East Asian shops and restaurants
  - SIA Box Hill Medical Centre (GPs and Allied Health)
  - two chemists
  - (possibly) St Paul's Lutheran Church
- community fatigue from cumulative impacts associated with other major projects planned in the Activity Centre, including Vicinity Centres' Box Hill Transformation Project, the impacts of which relate to amenity and access impacts, duration of construction and scale of works in tandem
- concern that the residential/accommodation complex at 1 Elland Avenue is not being acquired, with occupants noting it should be

- significant amenity impacts on residents and staff of the UAW facility adjacent to the Box Hill Gardens during construction
- the decommissioning of approximately one third of the regionally significant Box Hill Gardens during construction
- continued occupancy of the works area at Box Hill Gardens to enable the construction of SRL North resulting in ongoing impacts for people to enjoy their dwellings, outdoor areas, and to undertake recreation in the eastern extent of the gardens.

The key issues relate to:

- cumulative impacts from ongoing construction and development
- acquisition and displacement
- impacts on liveability for residents of the UAW facility
- communication and engagement.

13.9.2 Evidence and submissions

The Proponent fairly acknowledged that impacts of the Project at Box Hill would be complex, significant and far reaching. Whitehorse shared that opinion and while it supports the Project, it contended significant work needs to be undertaken to minimise impacts as much as possible.

Upon completion of the Project, there will be provision of a new station, dedicated cycle paths, new and upgraded paths and laneways, upgraded pedestrian and cycle crossings as well as station cycle parks to improve accessibility. As Box Hill is a Metropolitan Activity Centre, it will be subject to ongoing and significant development and construction, much of this has already occurred and it will be ongoing. Vicinity Centres has a very ambitious plan for its retail spaces to include residential, housing and further retail opportunities.

There will be multiple construction sites in the Box Hill area, this will impact on pedestrian activity, passive surveillance and line of sight around construction sites. Pedestrian delays and longer journeys associated with detours could adversely affect vulnerable persons such as the elderly or those with mobility impairments who may be unable to easily access key services in and around the construction areas.

The acquisition and demolition of buildings on Main Street and Market Street and the associated construction activities may detract from Box Hill's sense of place as a hub for Asian shops, specialist services, cafes and restaurants. Depending on whether some of these shops and services could be relocated within the centre will determine the full extent of these impacts.

At this stage, 108 properties residential properties are to be acquired for the Project, which is significant. Box Hill is home to a culturally diverse community, many of whom have lived there for some time. As the EES noted:

> The relative vulnerability of these households to impacts of acquisition differs significantly based on their duration of tenure, housing type, age and level of need for assistance. At least two of the residents in detached housing on Elland Avenue have long established links to the immediate area and the surrounding community and have chosen to stay in this location due to their proximity to retail services, public transport and medical facilities. Residents in these households are becoming increasingly vulnerable due to age and disability and likely have a higher level of dependence on proximity to the services [171].

There is significant new residential and commercial development, leading to population growth in the central area. Most new development is in the form of apartments, and it is highly unlikely that

[171] EES TA P.2, p95

those who live in detached houses to be acquired will be able to find a comparable property in close proximity or near to where they currently live. As the EES further noted:

> The volume of dwellings acquired equates to approximately one sixth of the dwellings available for rent in Box Hill. If all these households were to seek an alternative dwelling, pending future market conditions in Box Hill it may become difficult for them to remain in the suburb, with some potentially having to secure a dwelling elsewhere [172].

The evidence of Mr Weston agreed there would be significant disruption at Box Hill over a very large area for a prolonged period of time. He acknowledged it was the most challenging location from a social impact perspective and that the impacts on many people would be significant. He agreed with Whitehorse that *'… targeted measures were appropriate for the apartments on Elland Avenue and Irving Avenue, and if impacts on those properties could not be adequately resolved, voluntary acquisition should be considered*' [173]. In that regard, Mr Weston considered these impacts to be 'medium', not 'low'. Likewise, he considered that rating should be applied to residential amenity in Box Hill as well.

Mr Weston's evidence acknowledged the extent of impact for residents and businesses in Box Hill, including the UAW facility, where he stated:

> In the case of residents of the Uniting AgeWell facility, given that temporary relocation of residents is not a realistic option, the focus should be on ensuring an acceptable level of amenity within the facility throughout the construction period..[174].

Whitehorse submitted the key impacts related to:

- impacts on the Box Hill Metropolitan Activity Centre from acquisition and demolition of almost the entire traditional core of Box Hill and a significant number of residential and commercial properties between Whitehorse Road and Box Hill Gardens, including impacts on business, retail and residential owners, occupiers and tenants
- consequences of the long-term temporary occupation of approximately one third of Box Hill Gardens, reduction in open space availability and useability for the local community
- amenity impacts such as noise, dust and construction traffic for residents, business owners and operators, and the community generally for the duration of construction and the consequential need to ensure there are appropriately robust, transparent, and measurable mitigation measures.

Whitehorse was particularly concerned about the adverse and unreasonable impacts on the UAW facility and contended a bespoke approach to dealing with these impacts was warranted.

It further recommended in its Part B submission that the following additional measures be addressed through the EMF or RSG:

- Engage closely with Uniting AgeWell Box Hill prior to construction to confirm how best to manage construction impacts on residents
- Stagger residential acquisitions to avoid spikes in demand on the local housing market
- Maintain pedestrian access to Box Hill Gardens park on its northern and southern extents from Station Street
- On reinstatement, in consultation with Whitehorse Council, reconfigure Box Hill Gardens to align with current and future community aspirations and needs, as well as return a similar level of recreational services to the community [175].

[172] EES TA P.2 pdf p95
[173] D471, para 276 (q)
[174] D96, para 5.29
[175] D471, para 275(c)

It further submitted the exclusion of precinct planning renders the benefits uncertain and hypothetical, noting the benefits at this stage would be confined to the rail station and its connection. It urged the IAC to look more broadly at future planning and the broader program.

Dr Stubbs was critical of the SIA and the evidence of Mr Weston and gave evidence that the potential loss of residential properties would be significant, resulting in loss of social cohesion, cultural and family connections and increase in mental and physical health impacts. She considered there would need to be a seamless transition to comparable housing for both owners and renters. Dr Stubbs considered the impacts of construction on the social fabric of Box Hill would lead to loss of amenity and change of character to the area, as well as loss of access, an outcome that would lead to impacts on health and wellbeing.

Dr Stubbs had particular concerns about the impacts on UAW, the residents of which include a vulnerable and highly sensitive population, including those who may be at end of life, those who may be bed-ridden and those who may be cognitively impaired. The impact of noise on this community, coupled with loss of access to and views of Box Hill Gardens would be an overall impact of very high. She recommended there be a six to 10 metre buffer between the UAW and the construction site. Dr Stubbs concluded there would be serious cumulative impacts on the Box Hill Activity Centre, on its businesses and on its community. She recommended there be further assessment on Option 5 and said that she couldn't find any reason to progress Option 3 over Option 5. Submitter 222 agreed with her evidence.

On the basis of Dr Stubbs' evidence, Whitehorse submitted there should be 'no net detriment' and contended:

> In terms of residential acquisition, consistent with Dr Stubbs' evidence, in Council's submission, residents (inclusive of both tenants and owner/occupiers) must be no worse off as a consequence of the acquisition of their homes, and a new EPR added or the BRRSG amended to introduce an obligation on the SRLA to provide financial assistance, together with administrative assistance, to ensure that outcome. There is no reasonable basis for the SRLA to refuse to provide appropriate financial assistance to residents forcibly removed from their homes. This is particularly important for tenants, who do not have access to the statutory compensation regime under the *Land Acquisition and Compensation Act 1986* [176].

It recommended a new EPR to capture this.

Whitehorse supported voluntary acquisition and submitted it should be broadly available to all residents adversely affected by construction works. Further, stakeholder and community engagement should be implemented with similar rigour to the way in which dust and noise are dealt with.

The IAC heard from multiple submitters, including landholders, traders and residents who expressed concern about the social impacts of the Project at this location.

The UAW is a provider of residential aged care services located immediately north of the Box Hill Gardens along Station Street. The complex has significant frontage to the Box Hill Gardens. The EES acknowledged these residents are amongst the most vulnerable to amenity impacts due to their age and existing health conditions. The EES modelled acoustic walls of two and four metres high along the south boundary (fenceline) of the UAW property.

[176] D471, para 285

Noting that residents would most likely be present during the day, the amenity impacts associated with construction up to the property boundary would adversely impact residents, particularly during works undertaken before acoustic and other attenuation being in place.

The outlook of UAW shares a common boundary with the Box Hill Gardens, making for an exceptionally pleasant environment through a transparent front fence. Whitehorse proposed there be a six-metre buffer to the facility at the common boundary for amenity and access reasons.

UAW made a submission to the EES raising significant concerns about amenity impacts on its residents. Whitehorse similarly made strong submissions, supported by the evidence of Dr Stubbs. The key issue related to the immediate and long-term impacts of having a two or four-metre high acoustic wall along its fence line that would totally block any outlook to the Gardens. While the IAC did not hear from UAW, key considerations were expressed by Whitehorse and various submitters who spoke to these issues.

Towards the end of the Hearing, the Proponent advised it had been in discussion and negotiation with UAW and an agreement had been reached about how to manage potential impacts emanating from the Project [177]. This included a bespoke EPR (SC6). Whitehorse was generally supportive of the bespoke EPR, and agreed the setback for the acoustic wall should be six metres.

The Box Hill Ballet Association (S172, D608) is a community organisation that is celebrating its 70th anniversary and is currently housed in the former Baby Health Centre located withing the median of Whitehorse Road. Its primary concern relates to the potential for disruption to its programs and the loss of trees. The EES noted it is not proposed the Studio will be removed. Other concerns related to the possibility it might be removed as construction commences.

Some submitters raised issues about the complexity of the EES and its accessibility, including S315 who observed:

> The information and method of access are simply inappropriate for elderly, disabled and computer illiterate. Neither are they able to visit a library to view the documents at the time of the pandemic.
>
> In addition, printed materials do not show all the nuances nor information needed to create a model of the particular situation specific to their particular property.
>
> It is unacceptable to leave them out of the loop, completely unaware of what is to come.

Submitter 329 contended some residents, especially non-English speaking residents, were not aware of the Project. He urged better communication and engagement with all stakeholders, including simulations of the Project, be provided.

In closing, the Proponent refuted the need for any EPRs to provide for 'no net detriment' as advocated by Whitehorse and Dr Stubbs.

13.9.3 Discussion

Cumulative impacts

The IAC notes that while the Project will realise significant benefits, it has the potential to adversely impact the community in many ways at Box Hill, including multiple stakeholders. The recognised social impact issues affect many cohorts of the community and there is no easy solution in being able to mitigate some of these impacts. The IAC considers the Proponent and its relevant social

[177] TN46

impact (and to a certain extent, planning) evidence underplays the extent and impacts of the social impacts in Box Hill.

While there is no doubt this Project will benefit metropolitan Melbourne, particularly in the eastern region, the question is whether the significant impacts on this community, which comprises diverse cultures, elderly and vulnerable people, and over such a large area can be reconciled and mitigated.

Box Hill, more than any other station, will have ongoing impacts through construction and operation, and then through the connection of SRL East to SRL North. For these reasons, the IAC considers more detailed EPRs and other mitigation measures are warranted and should be implemented.

The IAC concludes this Project will result in a net benefit to the community of Victoria and it does not support a specific 'no net detriment' EPR.

Voluntary acquisition

Other impacts in Box Hill include acquisition of the SIA Box Hill Medical Centre (GPs and Allied Health) and two chemists, resulting in a reduction of medical and retail services available to the community, unless these facilities can be relocated nearby. While the IAC notes there could be comparable facilities within the Box Hill Activity Centre, it is recognised that people develop trust and relationships with medical practitioners, pharmacies and allied services.

Likewise, a number of banking services are to be displaced and it will be important these services are available in the area.

The extent of residential acquisition is high, and it is unlikely there will be comparable detached properties anywhere near the current dwellings for those being displaced, unless apartments were acceptable to those losing a detached property. While the BRRSG would provide some assistance to help minimise potential impacts associated with acquisition, the question to be resolved is how those being acquired will be able to find suitable and comparable housing. It will not be easy for affected households to locate or potentially construct an alternative dwelling elsewhere that meets their individual needs and what they are currently used to. New development in the Box Hill area is generally in the form of apartments, many of which are high rise. For those with gardens and space, this may be untenable. The EES acknowledges this:

> Further, in at least one case these dwellings have been purpose-built by the owners to meet their needs and do not follow standard floor plans available elsewhere. For these households, loss of their dwelling would likely adversely impact their health and wellbeing. However, pending their financial arrangements, they would likely be able to secure an alternative dwelling in proximity to the medical precinct or retail area. However, it may be difficult to secure an equivalent detached property located as close to Box Hill Central due to competition for residential land in that location [178].

Whitehorse sought an EPR that provided the opportunity for voluntary acquisition. As noted in Chapters 6 and 8, the IAC considers this request has merit, particularly where there are cumulative impacts. While there may be some residents who will 'live with' disruption and inconvenience, others may find it to be intolerable. If the construction program was of a lesser duration, say less than one or two years, it may be that residents would temporarily relocate or 'put up with it'. However, a construction period of several years, up to eight or nine years, is different. It could be

[178] EES TA P.2 p95

during the whole of a child's primary or secondary school years, it could be the whole of the early years of growing a family, it could be the whole of university and other pursuits.

For these reasons, the IAC supports a new EPR to provide for voluntary acquisition. The IAC has turned its mind to how this could be worded. It proposes to include this as a new EPR SC7, but it would need to be supported by guidance in possibly the BRRSG. The IAC discussed suggested criteria for this in Chapter 8.9, so it is not repeated here. The guidelines would need to be clear about when a property could be acquired and under what conditions.

Liveability of Uniting AgeWell community

With regard to the agreement with UAW, the IAC commends the Proponent for taking that initiative and for meeting with UAW to discuss issues and concerns. The IAC supports the bespoke EPR and considers it highly appropriate to include this as part of the overall social and community EPRs. However, it doesn't go far enough. The IAC visited that site/area many times and is aware that part of the Box Hill Gardens will likely be decommissioned for longer than the construction period due to its ongoing role during construction of the northern leg of the Project. While it is proposed the Box Hill Gardens will be reinstated following the SRL East construction, as the Proponent noted, this is likely to be temporary while planning for SRL North is underway.

For these reasons and as recommended in Chapter 11.7, the IAC considers the buffer from the UAW site to the construction site should be a minimum of 10 metres from the UAW property boundary.

Communication and engagement

With regard to communication and engagement, the IAC considers further work needs to be undertaken to ensure all sectors of Box Hill (and all other locations) are consulted in a way that is bespoke to individual circumstances. There are multiple ethnic communities in Box Hill and other locations, where English is not the first language. Many of these communities are not comfortable with speaking with 'officials' and this needs to be taken into account in a kind and caring manner. It is not, and will not be, a 'one size fits all'. The quality and extent of public engagement will be critically important in having acceptance and ownership of the significant changes to this area . This includes ensuring that relevant public, cultural and other events are able to proceed as much as possible, with the onus being on the contractors to plan construction work around significant events.

13.9.4 Findings

The IAC finds:

- While ultimately there will be significant benefits to Box Hill from the Project, there needs to be careful and sensitive management of the direct impacts of loss of community facilities and dwellings.
- The bespoke EPR for the Uniting AgeWell facility is supported, subject to changes.
- There should the opportunity for voluntary acquisition for those who may be adversely impacted by construction and operation, subject to guidelines, this is included as a new EPR – SC7.
- There will be disadvantage to residents (owners, occupiers and renters), and some will be worse off as the result of acquisition and other impacts, however the IAC does not support an EPR seeking 'no net disadvantage'.
- Ongoing communication for the diverse community in the form of a bespoke response is warranted.

13.10 Recommendations

The IAC recommends:

Environmental Management Framework

Include the following changes:

- **Revised EPR SC2 to ensure area communication plans are written in plain English and provide for different languages, as well as consolidating all relevant information for each site as a complete package.**
- **Revised EPR SC4 to ensure the onus is on the contractor to ensure it is aware of relevant public and private events.**
- **Revised EPR SC6 to specify the construction boundary is to be at least 10 metres from the Uniting AgeWell site boundary.**
- **New EPR SC7 to provide the opportunity for voluntary acquisition for residential properties.**

These changes are included at Appendix G.

13.11 Overall conclusions on social, community and public health

Subject to the recommendations of the IAC, and recognising there are some significant social and community impacts, particularly in relation to the Stabling Facility and Box Hill, these alone, do not preclude the Project being approved or the evaluation objective being achieved.

14 Surface water, groundwater and land stability

14.1 Introduction

Surface water, groundwater and land stability is discussed in:

- EES Technical Summaries:
  - Surface Water
  - Groundwater
  - Ground Movement
- Technical Appendices:
  - Q.1 – Surface Water Existing Conditions
  - Q.2 – Surface Water Impact Assessment
  - K.1 – Groundwater Existing Conditions
  - K.2 – Groundwater Impact Assessment
  - J.1 – Ground Movement Existing Conditions
  - J.2 – Ground Movement Impact Assessment.

The evaluation objective is:

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

As exhibited, the EES proposed 17 mitigation measures in the EPRs, to manage Project impacts on surface water, groundwater and land stability. These included:

- EPRs: SW1 – SW9
- EPRs: GW1 – GW4
- EPRs: GM1 – GM4.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

Surface Water:

- TN05 - Legacy command used for Stabling Facility TUFLOW modelling (D233)
- TN14 - Response to RFIs (D299)
- TN27 - Response to IAC questions on notice (D405)

Groundwater:

- TN10 - Response to RFIs: Groundwater (D254)
- TN42 - Groundwater – updated EPRs (D517)

Ground Movement & Land Stability:

- TN09 - Response to questions across the ground movement impact assessment (D250)
- TN20 - Tunnel protection - presentation to Monash University (D361)
- TN28 - Land acquisition process (D409)
- TN30 - Response to RFIs 18 and 19: overview of the MTP business EPRs (D420)
- TN36 - Residential Support Guidelines and Business Support Guidelines (D442)
- TN44 and TN48 - Ground Movement – Infrastructure Protection (SCO15) (D539).

Additionally, the IAC had regard to relevant submissions and evidence. Table 10 lists the surface water, groundwater and land stability evidence.

Table 10 Surface water, groundwater and land stability evidence

Party	Expert	Firm	Area of expertise
Proponent	Warwick Bishop	Water Technology	Surface water
Kingston	Michael Yule	Spiire	Surface Water
Whitehorse	Scott Dunn	Engeny	Surface Water
Proponent	Hugh Middlemis	Hydrogeologic	Groundwater
Kingston	David Ife	EHS Support	Groundwater
Kingston Heath Golf Club	Prof Peter Coombes	Urban Water Cycle Solutions	Groundwater
Proponent	Anthony Bennett	Aurecon	Ground Movement
Monash University	Edward Button [179]	Arup	Ground Movement

14.2 Surface Water

14.2.1 What did the EES say?

The Project is to be constructed across seven creek catchments in highly modified, urban environments (Gardiners, Scotchman's, Damper, Mordialloc, Elster, Mile and Koonung). Project tunnels pass under Gardiners Creek (at Burwood) and Damper Creek (3.5 kilometres north-west of Glen Waverley), where the other listed creeks are located at greater distance from the Project alignment.

The EES assessed the Project effects on flood and flow regimes (including climate change) and run-off water quality from its various sites. It noted adverse impacts could be suitably mitigated by implementing standard engineering measures, ranging from underground/aboveground water storage detention, earthen bunds, barriers, site grading or swales.

The following management plans and protocols are proposed:

- Integrated Water Management Strategy (IWMS)
- Surface Water Management Plan
- Stormwater Management Plan
- Water Quality Monitoring Program
- Wastewater Discharge Management Plan
- Naturalisation Plan for Gardiners Creek
- Flood Immunity Risk Assessments and Emergency Management Plans.

The key issues to be resolved are:

Project wide:

- accuracy and extent of surface water modelling for stations
- proposed water quality treatment approach for stormwater.

[179] Evidence filed but not called at the Hearing

Cheltenham:

- integration of surface water management and WSUD
- capture of surface water flows from Sir William Fry Reserve to Bay Road.

Burwood:

- proposed Gardiners Creek naturalisation/reinstatement and related effects.

Box Hill:

- integration of surface water management and Water Sensitive Urban Design (WSUD) for Box Hill Gardens.

14.2.2 Project wide

(i) Evidence and submissions

Mr Bishop conducted a peer review of drainage, flood and water quality (D75 to D77, D164 and D265). In assessing surface water quality, he indicated Project impacts can be addressed through design and modelling of appropriate WSUD features. He indicated, each major aboveground site was assessed for pre-development (existing) and post-development conditions, using detailed hydrological and hydraulic modelling. Based on flood and flow modelling results and with Melbourne Water's in principle support, he considered suitable flood mitigation solutions could be achieved (subject to additional modelling and review). He stated Project impacts and related risks had been suitably addressed, through both qualitative and quantitative assessment.

Mr Bishop, Mr Yule and Mr Dunn met in a conclave, producing joint report (D255), with key outcomes including:

- the EES methodology was generally consistent with industry best practice
- issues identified included:
  - whether flood modelling should have considered more frequent events, than the 1 per cent and 5 per cent Annual Exceedance Probability (AEP)
  - whether improved detail, or specification should have been provided with respect to both existing and potential site water quality treatment assets
  - additional scenario modelling for modelling sensitivity analysis was required (for Burwood and Gardiners Creek)
  - modelling should consider all external catchments feeding to sites and future developments
  - all available information around existing conditions should be considered
- regarding water quality, Mr Dunn and Mr Yule indicated the need for more work on the design and modelling of WSUD assets, but acknowledged for the reference design, it was not possible to specify final water quality treatment designs
- all Parties agreed, additional quantitative design and modelling of water quality needed to be provided (as addressed by the EMF)
- modelling for water quality needs to include any external catchments to the sites, for correct assessment and sizing of WSUD infrastructure
- all parties agreed, proposed 'choking' of the existing Burwood Highway cross-culvert was not an ideal flood mitigation option to offset the hydraulic impact of the proposed naturalisation of Gardiners Creek
- all parties agreed, existing and nearby surface water assets at sites should be considered for utilisation (such as the man-made lake at Sir William Fry Reserve)
- EPR SW3: Minimise risks from changes to flood levels:

  - include a requirement for blockage assessment
  - identify opportunities to further reduce existing flood risk
  - final modelling needs to suitably cover 'as constructed' conditions
- EPR SW4: Modelled climate change effects on surface water should cover all water design considerations (not just flood)
- EPR SW5: Manage stormwater run-off during operation:
  - the Surface Water Management Plan inception should occur prior to detailed design, so that the IWMS and this plan direct, rather than react, to the Project design
  - stormwater asset ownership needed to be addressed (an additional EPR was proposed)
- EPR SW7: Develop and Implement a Water Quality Monitoring Program:
  - measure baseline conditions for existing water quality treatment infrastructure
  - address monitoring reporting and data distribution
  - extend the post construction monitoring to three years
- EPR SW9: Develop and Implement the IWMS:
  - collaboration, more so than 'consultation' required with other Parties
  - implementing the IWMS as soon as possible, to maximise benefits from this approach
  - consider future development which may impact the Project's assets.

All conclave experts agreed (subject to some local changes, which in the main, were adopted in subsequent versions of the EMF), the proposed Project mitigation controls were appropriate.

In appraising water quality impacts, a 'desk-top' review of available 'baseline' surface water data was undertaken (with referral to the ERS and GED). For the reference design, initial assessment relied on a qualitative review, demonstrating how expected Project impacts could be suitably mitigated via the IWMS and introduction of WSUD assets. For detailed design, quantitative assessment is proposed using the 'Model for Urban Stormwater Improvement Conceptualisation' (MUSIC) model (to size water treatment assets). Preliminary MUSIC modelling was conducted for the stations by the Proponent (post EES exhibition). This modelling only considered treating surface water flows related to any predicted net increase in site surface impervious area.

For surface flooding and flows, each major site was assessed for a pre-development (existing) and post-development condition, generally using hydrological (RORB software) and hydraulic modelling (TUFLOW software). Model outputs were provided for flood depth, velocity and afflux plots [180]. Modelling was guided by Australian Rainfall and Runoff 2019 (ARR), along with Melbourne Water's technical specifications for flood investigations. Modelling accounted for predicted climate change effects, where it considered a one per cent AEP flood risk, covering Project construction, 'early days' and operation. Following EES exhibition, additional flood modelling was undertaken by the Proponent for the five per cent AEP design rainfall event. Usually for a project of this type, a larger range of AEP design floods (i.e. 20, 10, 5, 2 and 1 per cent) would be modelled, together with climate change effects. Such modelling is planned, further into detailed design.

In reviewing the EPRs, Mr Bishop observed they covered how the detailed design will comply with the necessary requirements to minimise, avoid, or mitigate impacts. For EPR SW7, he suggested post-construction monitoring should occur for at least two years, to appraise water quality

[180] 'Afflux' in the EES context, is described as 'predicted change in flood levels, between two scenarios, or measure of the change in flood level between an existing and a proposed scenario'.

conditions into operation. For EPR SW9, regarding development of the Project's IWMS, he suggested the various water authorities should be included.

In relation to the flood impact assessment, Mr Dunn stated:

- modelling generally matched industry best practice, where only some local inadequacies were identified
- Melbourne Water guidelines require modelling across 20, 10, five, two and one per cent AEP design floods, with climate change assessment. He noted the Proponent intends to model across a broader range of storm intensities and durations as design progresses (where Melbourne Water will continue its review of modelling)
- flood hazard has been appropriately considered, where acceptable flood safety and flood egress during operation could be managed
- a suitable range of EPRs has been developed to address flood risk (EPRs: SW2, SW3 and SW4). Some improvements to EPR SW3 were suggested, relating to consultations with the drainage authority and final modelling of the as-constructed form.

In relation to the water quality design, Mr Dunn stated:

- the Proponent completed a suitable appraisal of existing conditions, using water quality results available from Melbourne Water, EPA and Waterwatch for monitoring sites including Gardiners Creek (receiving waterway for Burwood) and Koonung Creek (receiving waterway for Box Hill)
- the EES should have assessed the condition and performance of existing water quality treatment assets that could be impacted
- the appraisal of construction impacts and related EPRs was deemed suitable
- the Proponent only conducted MUSIC modelling for those sites where a net increase for impervious area from existing to post-development condition was expected (Mr Dunn confirmed the Proponent should be allowing to treat all predicted surface water flows coming off the sites)
- EPRs SW1, SW5, SW6 and SW9 would suitably mitigate impacts to surface water quality. For EPR SW5 under operation, a more appropriate water quality treatment target should be set, based on improving existing conditions, where the suggestion of only adopting pollutant removal targets in accordance with the Best Practice Environmental Management Guidelines, 1999 (BPEMG) was not appropriate for a Project of this scale and importance (to avoid increasing pollutant levels above existing levels).

The EPA advised prior to the Hearing, it participated in a TRG convened by DELWP. The EPA made five recommendations relating to water and advised in closing these issues had been addressed through changes to the EMF.

Melbourne Water (S229) participated in an independent overview of hydrologic and hydraulic modelling from the EES (various sites). It conducted a review of preliminary EES water quality modelling appraisal using the MUSIC model.

DET raised concerns relating to four public schools.

Various submitters raised the following issues:

- improvement to water quality for Gardiners Creek and use of best practice mitigation methods
- how IWM and WSUD principles should be correctly applied
- current lack of detail within IWMS and WSUD proposals

- the Project's impact on hydrology and flooding
- level of flood immunity provided by the Project (including its surrounds)
- construction concerns for adverse impacts to water quality.

(ii) Discussion

Most of the Project rail alignment is underground, significantly limiting surface water interactions and impacts. Most stations are located at the top-end of drainage catchments, except for Gardiners Creek (Burwood), which is the only major drainage line close to a station.

The IAC observes Melbourne Water's general satisfaction with the EES flood and flow modelling, where it was generally supportive of the EES and its related EMF EPRs. The IAC notes Melbourne Water welcomed the inclusion of a modelling approach that anticipates climate change effects.

The EES and related follow-up studies through the Hearing provide an adequate and appropriate assessment of potential flood impacts for the reference design, to reliably develop suitable controls and mitigations. Further flood modelling across a series of more frequent rainfall intensity events is planned to occur through detailed design.

With regard to the importance of the IWMS and related WSUD measures, the IAC notes:

- the UDS calls for WSUD and IWM principles for infrastructure, matched to the Proponent's Sustainability Strategy
- EPRs SW1 to SW10 should provide for suitable management of various surface water aspects (including development of the IWMS with various key stakeholder involvements)
- EPRs SGG1 to SGG10 are appropriate for developing sustainability targets for water and other resource use.

In relation to the arrangement for licensed Trade Waste discharges for the Project across construction and operation, the IAC notes the Proponent continues to liaise with Melbourne Water, where that Authority's independent reviewer has indicated expected discharges from the tunnel can be suitably catered for, via expected permitted sewer disposal (either at the Eastern Treatment Plant, or elsewhere in the Melbourne Water network).

The IAC notes the proposed EPRs call for Council consultation at specific Project sites, where acceptance will be required for the development of various design strategies and management plans.

(iii) Findings

The IAC finds:

- Implementation of the required strategies, management plans and recommended mitigation measures can adequately manage surface water impacts.
- The EES and additional reporting presented through the Hearing is suitable for the appraisal of the EES scoping guidelines.
- Effects of climate change have been suitably addressed.
- Ability to allow for IWMS and WSUD measures for the Project are included within the EMF.
- 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).

14.2.3 Cheltenham

(i) Evidence and submissions

Mr Yule gave evidence that:

- the Elster Creek Flood Management Plan (2019-2024) uses IWM with its flood mitigation, where existing stormwater harvesting for the Sir William Fry Reserve lake occurs from the adjacent northern residential apartment block
- steep grades along the southern boundary of the Sir William Fry Reserve could limit control and capture of surface water flows towards Bay Road and its associated rail underpass
- the current proposal to discharge collected stormwater from the Project area to the adjacent Kingston stormwater drainage network was a poor approach, with minimal IWM concepts incorporated.

Mr Yule encouraged the incorporation of future precinct development with surface water infrastructure planning, and indicated:

- it would be practicable in design, to ensure not just the Project area, but future development within the Project area can discharge to the Sir William Fry Reserve lake (which is likely to have suitable storage to hold a one per cent AEP rainfall event and to use stored water for reserve irrigation)
- various swale features and raingardens could be created to passively treat stormwater, possibly coupled with a water education feature for the public.

(ii) Discussion

The IAC considers the EES addresses Kingston's concerns regarding the need for further flood modelling beyond the reference design (which related to proposed stormwater management measures to direct stormwater flows to Kingston's drains in the south-east corner of the site) [181].

The IAC notes the UDS contains a place-specific requirement (for Cheltenham), requiring the public realm to be designed to '[adopt] *an integrated water management approach which includes the existing lake, making allowance for appropriate landscape treatments and integration with open space design'* [182]. The UDS requires the Public Realm to be designed, such that the IWMS is applied to the Sir William Fry Reserve lake and associated park landscaping.

In its closing submission, the Proponent indicated it is practical to direct all surface water flows from the site towards the north, to the Sir William Fry Reserve lake (and not directly into Kingston's drainage system to the south-east site corner).

With regard to Kingston's Advocacy Design, the Proponent considered such principles as reflected from that design were '*generally consistent with the requirements already proposed*' [183]. Accordingly, some adjustments to EPR SW9 by the Proponent acknowledged this. The IAC observes, the Proponent seeks to retain as much flexibility in implementing its IWMS as possible (where the amended EPRs provide for design, to account for future approved development).

[181] D114
[182] EES, Attachment B, Urban Design Strategy
[183] D775

(iii) Findings

The IAC finds:

- The Proponent should work closely with Kingston, to conduct sound IWM and WSUD practices for Cheltenham and the surrounding the Sir William Fry Reserve, taking into account the relevant design initiatives put forward by Kingston.
- Project IWMS and WSUD measures should suitably intercept and treat surface waters running off the Cheltenham site into Bay Road.

14.2.4 Burwood

(i) Evidence and submissions

Mr Bishop indicated modelled flood impact predictions indicated a slight residual afflux (< 100 mm increase) outside the site, mainly associated with the proposed naturalisation of Gardiners Creek. He noted there were available options to mitigate such afflux within the proposed creek naturalisation section.

Mr Dunn indicated for flood modelling, there was available historic information from Council, where in 2020-2021, Engeny undertook detailed hydraulic modelling of the Gardiners Creek catchment immediately upstream (approximately 500 metres) from the site, on behalf of Melbourne Water and Whitehorse (which covered the full extent of the catchment). He observed:

- the Proponent's hydrological modelling should have adopted 75th percentile pre-burst rainfall (where to not do so, could result in an underestimation of flood levels)
- use of median temporal patterns with the RORB hydrological model could lead to an inaccurate estimation of inflows, as then applied to the hydraulic modelling
- a full range of temporal rainfall patterns should have been run through the hydraulic model, to assess flooding outside of Gardiners Creek (to identify critical durations)
- modelling assessment of the sensitivity of tailwater levels within Gardiners Creek should have been assessed (to ensure creek conveyance capacity had not been overestimated in the hydraulic models).

Melbourne Water confirmed its expectations and requirements in respect of the Gardiner's Creek naturalisation proposal, which were consistent with Mr Bishop's evidence.

Various submitters, including Whitehorse, supported the proposed naturalisation of the Gardiners Creek Project section.

(ii) Discussion

The IAC notes flood modelling for construction showed no predicted adverse impacts would extend beyond the site in the one per cent AEP event. EES modelling indicated '*several small, isolated zones of afflux in the McComas Grove and Sinnott Street road reserves. However, adverse impacts are largely contained within the Construction Phase extents'* [184]. The IAC agrees the proposed mitigation measures would suitably eliminate afflux for these areas.

Under Project operation and the proposed naturalisation of Gardiners Creek, the IAC observes:

- modelling showed residual afflux (after mitigation) was generally acceptable, apart from increases predicted along Gardiners Creek (outside of the site)

[184] EES, TA Q.2 Surface Water Impact Assessment

- given these afflux increases only marginally extend beyond the site, the experts were confident the afflux could be addressed through site landscaping/building works
- the modelled one per cent AEP Event (with climate change) showed residual flood level increases are generally confined to the Gardiners Creek waterway reserve (north of the Burwood Highway), but two properties at Cropley Court (some 275 metres north of Burwood Road) were predicted to have increased flood levels in excess of Melbourne Water's guidelines.

Further, the modelled five per cent AEP event (with climate change) suggested an area of adverse flood impact is located downstream of Sinnott Street for several private properties outside of the site. While Mr Bishop in evidence, referred to such areas of flood increase as 'minor', the five per cent AEP Flood Modelling Memorandum labelled these areas as a 'moderate' flood effect (based on increases being greater than 50 millimetres, but less than or equal to 200 millimetres). Mr Dunn did not believe the flood depth increases presented in the afflux plots for the one per cent AEP and five per cent AEP events (with climate change) could be categorised as 'minor', where such afflux areas needed to be addressed through mitigation. Additional mitigation measures would be required to address the adverse afflux predicted just south of the Burwood Highway.

The IAC understands from the Proponent, there is a range of possible mitigation options related to optimising flows through Gardiners Creek, to control flood afflux both south and north of Burwood Highway. This includes possible additional flood storage, in a portion of area occupied by the two sporting ovals, just north of Burwood Highway and to the immediate east of Gardiners Creek (this could include a portion of the former Bennettswood Landfill, which may constrain such an option).

In relation to reducing ('choking') the existing Burwood Highway creek culverts, all experts indicated concern that such action could increase the risk of culvert blockage.

The IAC considers for construction, a minor concern about flood risk around the northern end of Burwood Station could be practically addressed through deployment of flood mitigation measures within the site.

The proposal for naturalisation of Gardiners Creek (the section from Burwood Highway to the pedestrian footbridge, over the creek near Sinnott Street) is based around the environmental and amenity benefits it provides, and it would:

- comply with the UDS (EPR BUW3(b))
- be designed to promote appropriate flow conditions (EPR EC5)
- be designed and maintained under a suitable Naturalisation Plan (EPR SW8).

The currently identified, potential flood risk from Gardiners Creek, immediately upstream of Burwood Highway is directly associated with the Proponent's proposal to naturalise the creek. The experts agreed, the use of suitably modelled 'drop structures' or energy loss structures, incorporated into the proposed design of the naturalised section of Gardiners Creek, would capably prevent such a flood risk and the IAC accepts this advice. This is an issue that can be addressed through future detailed design.

(iii) Findings

The IAC finds:

- Predicted flood modelling impacts to and from the Project reference design can be suitably managed and mitigated through detailed design.

- Naturalisation of the proposed section of Gardiners Creek (between the Burwood Road creek crossing, to the existing pedestrian bridge crossing near Sinnott Street) is appropriate and can be managed through the recommended mitigation measures.
- Mitigating downstream flood effects associated with the planned naturalisation of Gardiners Creek, such as choking the existing Burwood Road crossing culverts, should be avoided through detailed design and consideration of alternative energy abatement structures.

14.2.5 Box Hill

(i) Evidence and submissions

Mr Dunn gave evidence that:

- hydrological modelling should have adopted 75th percentile pre-burst rainfall
- a validation exercise should have been undertaken, utilising recently completed flood mapping by Whitehorse (commissioned by Melbourne Water in the 2020/2021 Flood Mapping Program)
- flood modelling across construction showed adverse impacts were predicted to extend beyond the Project site for the one per cent AEP event.

Mr Dunn considered these issues could be satisfactorily mitigated through the EMF.

(ii) Discussion

Under operation, flood modelling showing residual afflux (after mitigation) was generally acceptable, apart from some impact beyond the extent of the Project land boundary (for both one and five per cent AEP events, including the climate change effect). The IAC notes these increases only marginally extend beyond the site. Mr Dunn indicated such an afflux impact could be addressed by landscaping /building works within the site.

In considering water quality design, Mr Dunn observed:

- the EES should have assessed condition and performance of the existing Box Hill Gardens stormwater harvesting system (which should include MUSIC modelling)
- the EES initially only conducted a qualitative assessment of operational impacts, where it was shown, there was a proposed run-off flow decrease associated with predicted surface impervious areas, reducing from 70 to 60 per cent.

Mr Dunn indicated that such a water supply impact (flow reduction) on the Box Hill Gardens stormwater harvesting system should have been considered. The IAC agrees with this point and is satisfied it can be addressed in detailed design.

(iii) Findings

The IAC finds:

- Future design needs to consider the IWMS and WSUD measures in association with the existing lake at Box Hill Gardens and its related stormwater harvesting system.

14.3 Groundwater

14.3.1 What did the EES say?

The rail tunnels are designed to be watertight in the long-term, minimising groundwater inflows. Localised groundwater drawdowns at stations and tunnel cross passages will occur through construction, but groundwater is expected to return to near-normal levels following 'tanking' (permanent water sealing). Such drawdowns have potential to decrease groundwater availability to surrounding irrigation bores, aquifer investigation/monitoring wells and the ability for GDEs to access the water table. Likely mitigation measures include the use of diaphragm walls or secant pile walls, aquifer recharge options and water replenishment.

The following management plans and protocols were proposed:

- Groundwater Management Plan
- Groundwater Monitoring Plan (GMP)
- Groundwater Disposal Strategy.

Under the planned mitigation approaches, there would be minor impacts to groundwater, in terms of drawdown, inflows, generation of acidic groundwater, movement of existing contamination plumes and water quality.

The key issues to be resolved are:

- additional investigation for groundwater, baselining of existing conditions and model calibration (i.e. accounting for variability)
- ground truthing of modelling.

14.3.2 Evidence and submissions

Mr Middlemis conducted a peer review of certain groundwater issues. This did not extend to groundwater contamination or chemistry in any specific detail, apart from a discussion around general aquifer drawdown mitigation measures. He indicated the EES investigations provided a sound understanding of existing conditions to suitably assess groundwater levels, quality and modelling/engineering parameters. He noted:

- there has been a suitable appraisal of the causal pathways for Project impacts/risks to groundwater on the surrounding environment
- extensive groundwater modelling had been competently conducted, in a manner generally consistent with best practice methods, and:
  - certain modelling aspects were recognised, for the reference design to be affected by limitations of data and/or the modelling method (not uncommon for this type of Project, at the EES stage)
  - most modelling assumptions were considered as reasonable, where the range of predicted uncertainty was not considered to be extensive for key inputs
  - related qualitative appraisal as was undertaken by the Proponent to address modelling uncertainty generally followed best practice.

Mr Middlemis indicated the proposed EMF will provide confirmation of the adequacy of, and/or require the investigation of refinements to the Project's design, construction and operational phases. The staged approach was designed to reconfirm the proposed mitigation measures are sufficient to suitably reduce anticipated impacts at each stage.

Mr Ife provided comments on the EES methodology for Cheltenham and the Stabling Facility, where he stated:

- both these sites and the adjacent connecting tunnels through Kingston are constructed through Tertiary (sedimentary) sequences of sandy clays and sands (Brighton Group), where groundwater levels are reasonably shallow (particularly around Heatherton and the southern part of Clayton)
- there are many existing groundwater bores in this area (Bayside and Kingston hold up to 1,060 privately-held, licensed groundwater bores), where many of these could be influenced by Project groundwater drawdowns
- there are many GDEs in association with the shallow groundwater systems for this region.

Mr Ife noted the region holds many known contaminated sites, including former industrial sites (Cheltenham) and operating or closed landfills at former sand mines (Heatherton and Clayton South). For these landfills, leachate losses to groundwater from the landfill containment cells (often old and poorly engineered) pose a common issue.

Professor Coombes provided evidence in relation to the Kingston Heath Golf Club (KHGC), located on the southern side of Kingston Road, opposite the Stabling Facility. The KHGC turf is dependent on groundwater supply and KHGC is licensed to use some 173.5 ML/year of groundwater. It currently takes some 110 ML/year of very good quality water from two operational bores [185]. Professor Coombes advised, the EES investigations were adequate for impact assessment for the reference design but further works were required leading into final design, to further address uncertainties.

The EPA provided recommendations across contamination, groundwater and related surface water effects and provided a number of recommendations. It advised in closing these issues had been suitably addressed in the updated EPRs.

Other submitters raised various groundwater concerns related to:

- impacts on existing users
- the disposal of groundwater
- GDE protection
- data-gaps and quality concerns with baseline data
- modelling methodology, assessment and verification
- the migration of contaminated plumes
- the need for a robust GMP.

Mr Middlemis, Mr Ife and Professor Coombes held an initial conclave on 28 February 2022, accompanied by two EPA observers. They produced a conclave report and had no material disagreements on general technical matters [186]. They agreed the preliminary technical understanding for the Project's potential interaction with hydrogeology was sound, which allowed for suitable EES review and appraisal of 'proof of concept'. They further agreed:

- continued and updated groundwater information gathering and modelling are Project requirements (addressed by EPR GW3)

[185] The IAC requested further information about the bores from KHGC during the Hearing. This information was provided in D801 received on 21 June 2022. Due to the timing of receiving this information, the IAC has not had regard to it in its consideration of associated issues.

[186] D247

- groundwater modelling uncertainty analysis to date was consistent with best practice, but requires expanding as the understanding of groundwater systems improved (where groundwater models would be further refined [addressed by EPR GW2])
- establishment of a key groundwater users stakeholder group for consultation with the Proponent was a sound idea (addressed by EPR GW3.3)
- information from monitoring should be posted onto a Victorian groundwater public data base (addressed by EPR GW5.6)
- a suitable 'agent' should be established, responsible for identifying sentinel groundwater monitoring bores and for managing the decommissioning of obsolete water bores in accordance with the requirements of water authorities (addressed by EPR GW3.4)
- on the importance in understanding seasonal effects of groundwater extraction for surrounding golf courses and irrigators (as addressed by EPRs GW3 and GW5), EPR GW5 should be amended, such that post construction monitoring of groundwater extends for at least five years
- annual IEA Reports to the Proponent should be made publicly accessible.

Professor Coombes requested an existing KHGC groundwater bore (WRK058434), be utilised as a key monitoring bore relating to the Project's effect. Mr Middlemis indicated that instead, specific groundwater monitoring bores should be utilised as 'sentinel' indicator bores, to be judged for any dewatering effects. Such sentinel bores would be typically placed between the Project and operational bores of concern. Mr Middlemis considered however, performance data from the KHGC operational water bore may prove useful for future model calibration (agreement was reached on this point (addressed by EPR GW2.4).

The same witnesses met for a second conclave, finalised on 1 April 2022. All recognised they did not consider the Day 1 EPRs for the initial conclave in any detail and subsequently did so. Their additional comments included:

- previously suggested changes to EPR GW3 should be retained on the basis that '… *regular meetings with a consultative working group of groundwater users and key stakeholders can highlight concerns that might need timely responses during the design, construction and operational phase of the project*'
- they disagreed on the mechanisms to achieve the above point, in that Mr Middlemis and Mr Ife considered the EMF provided this, but Professor Coombes sought clearer and more direct wording
- for EPR GW5, they agreed '*data collected under the Groundwater Monitoring Plan should be accessible to the public at least annually via the State-wide database Water Measurement Information System*' [187].

The Proponent urged the evidence of Mr Middlemis and Mr Ife be accepted, where there was only minor disagreement in respect of the potential environmental effects from the Project on groundwater systems and interconnected GDEs. It submitted:

- modelling methodology and presented results in appraising existing conditions and Project impact assessment was generally adequate for the reference design
- exhibited EPRs were only subject to relatively minor amendments, where a suitable regime for future investigating, monitoring, modelling and management of groundwater systems and related risk was proposed

[187] D478

- it was agreed by the experts that currently identified shortfalls and inconsistencies in the understanding of groundwater systems and their response to the Project can be suitably addressed into detailed design and construction, via the amended EPRs
- EPR GW2.1 calls up additional modelling, consistent with the Australian Groundwater Modelling Guidelines, to include additional model calibration information and to better appraise observed variances in the short-term (seasonal) and long-term (impacts of climate change)
- EPR GW5.2(b) suitably allows for establishing sentinel groundwater monitoring bores for early identification of groundwater impacts to receptors, or users
- the potential for Project effects to groundwater were expected to be relatively modest, through deployment of a suitable tunnelling methodology, tanked structures and the common use of deep diaphragm walls
- where there were certain sites, such that groundwater drawdowns were anticipated to cause an issue with encountering and influencing the migration of contamination plumes (e.g. contaminated sites, or landfills), additional risk mitigation strategies could be looked at (such as aquifer recharge).

The Proponent suggested the final EMF suitably encapsulated the agreed review comments and suggested edits from the various experts and the EPA.

14.3.3 Discussion

The IAC considers key groundwater related risk issues from the Project are associated with its construction below the water table (which occurs across most of the alignment length). Short or long-term alteration to groundwater levels can arise from aquifer dewatering, where resultant drawdowns to groundwater levels may cause impacts to groundwater quality (e.g. mobilising existing chemical plumes). It may also impact on GDEs, such as terrestrial vegetation and interactions between shallow groundwater and connected creeks and wetlands. The EES outlines a range of well-proven design measures to avoid, minimise and/or mitigate such impacts.

Main tunnels will be constructed using TBMs that minimise groundwater inflow and drawdown (through near-immediate water proofing). Construction of the stations and the Stabling Facility are of most concern to the IAC. These facilities require significant excavation, with continuous dewatering over an extended timeframe. The IAC notes station construction is often anticipated to require mitigation measures, such as the use of large diaphragm walls, or secant support pile walls, to minimise groundwater inflows and drawdowns (but construction may also require other mitigation measures, such as groundwater recharge and/or soil, or rock treatment (i.e. grouting).

Numerical groundwater models have been suitably developed for the EES, under a range of scenarios to quantitatively assess the potential impacts from groundwater disturbance and lowering. These models were used to evaluate the effectiveness of available risk mitigation measures. In considering modelling and its related uncertainty, the IAC considers:

- collected data through the EES is sufficient for the assessment of environmental impacts for the reference design
- suitable spatial and temporal coverage of the available groundwater datasets has been conducted, to adequately characterise aquifer properties and historic groundwater behaviour for the reference design
- groundwater model calibration meets suggested modelling guidelines presented in the EES, where sensitivity and uncertainty analyses has been suitably conducted across the

expected range of predicted groundwater inflows and drawdowns for the reference design
- as the Project progresses, additional intrusive investigation and monitoring data is expected to feed into the various groundwater models, which will further refine groundwater management and mitigation measures (addressed through EPR GW2).

There are several significant and large contaminated industrial land parcels near Cheltenham under specific groundwater risk management controls, previously established by the EPA (formerly defined as 'Groundwater Quality Restricted Use Zones' [GQRUZs]). The EES sets out mitigation measures for these parcels and elsewhere, if encountered, across the rail alignment (addressed by EPRs: GW1, GW2, GW3 and GW5). Such measures include use of diaphragm walls (or similar), improved structure tanking and possible aquifer managed recharge, so the risks of contamination migration from these lands are suitably controlled.

The IAC notes Mr Ife's concern, such mitigation schemes often take significant time to properly design, permit and implement, where they need a further process to formally allow for their suitable decommissioning, once risk levels abate. The IAC concludes EPRs: GW1, GW2, GW3 and GW5) will suitably address such concerns.

Mr Ife suggested the current assessment of contamination migration risk for groundwater was simplistic, relying on many assumptions. He noted while some sensitivity appraisal for migration risk of contaminants was attempted for key aquifer water flow parameters, the influence of aquifer retentive properties to hold up migrating chemicals had not been suitably considered. The IAC considers EPRs: GW2 and GW5 suitably address this.

Groundwater dewatering can result in potential acid-forming conditions through the 'Red Bluff Sands', the 'Black Rock Sands' (both parts of the Tertiary - Brighton Group Formation) and the underlying Fyansford Formation. These particular sediments require suitable management plans to protect the Project and surrounding land receptors (refer to Chapter 9). The IAC concludes EPR GW1 will address this, together with other related EPRs for land contamination (i.e. C1 and C6).

Mr Ife was critical of the general use of the '*10 % drawdown criterion*' to be applied when assessing drawdown effect on groundwater extraction bores [188]. He considered this did not account for variable well depths and particular aquifer zones, where impacts from groundwater drawdown from the Project could prove more significant. He believed the Groundwater Management Plan should establish a '*statistically robust method for distinguishing seasonal variability and long-term rainfall recharge trends from drawdown impacts'* [189]. The IAC concludes amended EPR GW3.2.a) suitably addresses this.

Professor Coombes noted groundwater extraction at KHGC is influenced by seasonal variability in groundwater levels. He raised concern about the unknown effectiveness of suggested mitigation measures to control groundwater drawdown, where if these failed, there could be significant economic cost to KHGC for replacement water. He stressed the importance for:
- timely access to groundwater monitoring results
- use and offer of current KHGC bore data, to assist with Project groundwater model calibration/verification
- agreement of suitable action trigger levels, to initiate 'deeper inquiry' or mitigation measures

[188] EES Attachment A, Day 1 EMF and EPRs
[189] D119, Expert Witness Statement, D. Ife

- the need for contingency plans for golf course water supplies.

The IAC concludes the recommended EPRs GW1, GW2, GW3 and GW5 suitably address these concerns.

As jointly recommended by the experts at the first conclave agreement and in the oral evidence from Mr Middlemis, the IAC considers it appropriate to maintain the Groundwater Management Plan for a minimum of five years (not two) following completion of underground structure tanking, or until an IEA verifies that groundwater is recovering (or has recovered) to a satisfactory level.

14.3.4 Findings

The IAC finds:

- Implementation of the required management strategies and plans, associated with mitigation measures, can adequately identify and manage groundwater impacts.
- Estimated effects of future climate change have been suitably addressed for the reference design and are suitably catered for in the EMF.
- EPR GW5.5 should be amended, to show the GMP being implemented and maintained for a minimum of five years (not two), following completion of underground structure tanking, or until an IEA, appointed pursuant to section 208 of the EP Act, verifies that groundwater is recovering (or has recovered) to a satisfactory level.
- EPR GW5.6: should require that annual monitoring data with associated explanations of its limitations be made publicly available (the IAC finds, this must also include data reports related to groundwater contamination testing).
- EPRs GW1, GW2, GW3, GW4 and GW6 will appropriately mitigate risks.

14.4 Ground Movement and Land Stability

14.4.1 What did the EES say?

Land stability encompasses the general topic of ground movement (i.e. vertical and horizontal movements from Project subsurface influence) and the appraisal of slope stability, possibly associated with creek valleys, close to the rail alignment. There were no significant slope stability issues identified in the EES.

Unmitigated ground movement has the potential to impact upon infrastructure assets (e.g. buildings, roads, infrastructure and service lines). Under the proposed mitigation measures, limited ground movement is expected from construction excavation and tunnelling works.

Post-mitigation impacts at Glen Waverley, Burwood and Box Hill, the Stabling Facility and the ESF are predicted to be 'negligible' to 'minor'. Some 'moderate' post-mitigation impacts were predicted for relatively short road sections close to Cheltenham, Clayton and Monash.

Under a Ground Movement Plan, further detailed analysis across certain assets will be undertaken as the design progresses, to further appraise the extent of potential impact and to consider the use of additional mitigation measures tailored to specific structures, or predicted areas. Such measures should reduce these more noticeable impacts to either a 'negligible' or 'minor' ranking.

The key issue to be resolved is:

- building dilapidation surveys for surrounding residential and commercial users.

14.4.2 Evidence and submissions

Mr Bennett was the only presenting witness. Dr Button did not appear, due to Monash University's withdrawal from the proceedings, but provided a written statement and attended a conclave with Mr Bennett.

Mr Bennett's firm was responsible for preparing the two main documents related to Technical Appendix J (Existing Conditions and Impact Assessment). He:

- co-authored the Existing Conditions Report and wrote the Impact Assessment Report
- wrote the SRL East PSA GC197, 'Strategic Justification Report' (October 2021).

Mr Bennett also provided technical input for the protection of Project infrastructure in the proposed SCO14 ID and SCO15 ID).

Key elements of Mr Bennett's evidence were:

- the Project meets the EES evaluation objectives for land stability (ground movement from tunnelling is the major consideration),
- the Existing Conditions and Impact Assessment Reports were suitably completed and considered appropriate for EES assessment
- assessment of Project impacts on other existing or proposed assets used predictions of movement resulting from Project excavations and groundwater dewatering/drawdowns
- predictions were made using a combination of empirical methods, based on historical data and numerical modelling
- the assessment identified typical ground responses for construction and suggested areas where ground movement impacts could be critical
- the assessment showed ground movement impacts could be controlled or reduced by sound engineering design and construction methods
- the predictions considered and assumed mitigation measures (where necessary), such as improvement of ground mass surrounding excavations.

With these mitigation measures in place, predicted impacts on buildings, structures, utilities, and other infrastructure were predicted to range from 'negligible' to 'minor', except for some sections of road pavements along Nepean Highway, Kingston Road, Dingley Bypass, Clayton Road, Normanby Road, and Waverley Road, together with five adjacent side streets, where the impact was rated as 'moderate'. For these particular cases, further remedial actions are expected and would be implemented as required.

Across the Project's alignment, within the estimated ZoI for ground movement, there were 2,256 buildings considered through the EES, including:

- Bayside: 17
- Kingston: 794
- Monash: 899
- Whitehorse: 546 [190].

Most of these building impacts were expected to rate as 'negligible'.

EPRs GM1 to GM4 establish a framework to regulate control of ground movement and to limit its effects on buildings and other infrastructure. These EPRs call for the development of ground

[190] Any buildings of floor area less than 36 m^2 was not considered (such as adjoining sheds and garages).

models, monitoring of movement as excavation progresses, and the use of various construction methods to minimise ground movement and groundwater inflows.

Mr Bennett indicated the derivation and use of the potential ZoI is a commonly used tool to address impacts from tunnelling ground movements. It allows for systematic identification of potentially vulnerable structures along the alignment (EPR: GM1, GM2 and GM3) and which structures should be the subject of pre-construction condition surveys (EPR GM2). Final definition of the ZoI is expected to be determined by the contractor based on re-assessed risk. This may be based on different criteria, depending on the particular purpose for which the infrastructure asset is used. Typically, a ZoI based on vertical settlements of 5 or 10 millimetres would be appropriate. For the EES, the 5 millimetre ZoI criterion was adopted for assessment.

Mr Bennett considered whether the EMF established an appropriate framework across construction and operation, even if the final Project form differed from the reference design (but was still situated primarily within the Project site). He determined that a modified Project design (in comparison to the reference design) would still meet the EES Evaluation Objective.

For the reference design and considering the modified alignment for Monash University, Mr Bennett determined the EMF would provide an appropriate risk management framework. He indicated the EMF achieved 'good practice' for the management of ground movement (i.e. not limited by geology, or construction type of overhead infrastructure). Proposed GMPs (through EPR: GM3) provide for:

- determining applicable geology/hydrogeology
- developing the design, assessing the effects of groundwater drawdown and ground movement to agreed criteria
- constructing in a manner that limits ground movement and confirms predictive performance via monitoring
- recognising and repairing any damage caused by Project ground movement.

Mr Bennett recommended two changes for the Day 1 EPRs:

- GM1: include a reference to the Australian Tunnelling Society's Tunnel Design Guideline, to assist in defining Project expectations on the assessment processes and acceptability criteria for ground movements
- GM4: be updated, to include a requirement for an independent mediation process to resolve disputed claims for repairs of Project damage (including a three-year time frame for making damage claims, related to the anticipated duration of ground movement from the Project).

Mr Bennett and Mr Button met in conclave on 28 February 2022 and produced a report that agreed:

- the ground model provided a reasonable interpretation of available geotechnical data, recognising further investigations will be undertaken to augment knowledge across geological strata and engineering properties
- the methodology for assessing ground movement effects was appropriate for the purposes of the EES, subject to addressing uncertainty across boundaries between different geological strata[141].

Mr Button indicated it was not clear how the appraisal of support pile depth and settlement effects with 'Level 2' assessments had been conducted for the EES. Mr Bennett confirmed predicted movements at the 'toe' of support piles were used to assess likely building impacts (this was agreed as an acceptable approach).

Mr Button queried the validity of assumptions made for TBM excavation and corresponding ground volume losses (assumed for finite element modelling, to appraise ground movements, strains and stresses). Mr Bennett indicated the contractor would need to suitably demonstrate how the proposed ground movement management strategy, including selection of TBMs and operations, would achieve the final criteria. They agreed the proposed EPRs would facilitate this.

Mr Button suggested an alternative horizontal alignment through Monash University could decrease the number of buildings located directly or partially above the tunnels and avoid directly passing beneath sensitive buildings (decreasing risks) [191]. (This was subsequently agreed by the Proponent in the Monash agreement).

Kingston raised concern about the effects of ground movement on the liners of landfills and the assessment of construction methods and proposed ground improvement methods for the Stabling Facility. Mr Bennett opined that while the EES noted the presence of these landfills, their assessment was not individually addressed. Acceptability of the effects of ground movement on landfill liners was instead based on a qualitative assessment to check that predicted ground movements and strains were within the typical strain capacity for such landfill liners (i.e. usually either clay-based liners, or geosynthetics/geomembranes). Mr Bennett advised EPR GM.1.c) suitably addressed the need to review predicted movements related to landfill liners.

Manningham raised concern about the impact of SCO15 on future development costs for landowners. It suggested the Proponent should undertake further work to demonstrate the Project would not unreasonably impact upon such costs.

DET raised concerns about the four government schools directly impacted by the proposed rail infrastructure and underground tunnelling. It recommended further consultation be undertaken by the Proponent and contractors with DET.

Other submitters raised the following issues related to:

- how Project damage to buildings/assets will be measured and monitored, and the process/responsibility for repairs
- mechanisms and responsibility for asset repairs and such processes, ensuring assessment of damage and suitable repair are independent
- requests for a property asset condition survey, prior to and after construction
- ground movements potentially causing damage to buildings (including basements and car stackers) or utilities
- ground modelling, methodology and assessment
- duration of monitoring for existing conditions and post construction.

Manningham raised concerns about the planning permit triggers and that strategic land (such as the Doncaster Hill Activity Centre) should not be prejudiced or constrained by the Project. Mr Bennett indicated the Project will be designed with additional capacity beyond that required by the existing conditions. He expected the Project would not preclude future development, although there might be some circumstances where additional engineering solutions would be required to protect the tunnel asset. Mr Bennett indicated the additional capacity as assigned to the Project's tunnel assets is similar to that as used for other recent underground projects in Melbourne (e.g. MTP).

[191] D267

14.4.3 Discussion

Noting the evidence and comments of Mr Bennett about SCO15, the IAC considers EPRs GM1 to GM4 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 suitably address potential impacts through detailed design, construction, and post construction. Further, the EPRs identify the requirement for pre-construction and post construction surveys. The extent of the surveys will be part of the risk assessment, conducted through detailed design (EPR GM2 will achieve this).

The IAC is satisfied EPR GM4 adequately requires properties and assets damaged by Project ground movements to have required repair works undertaken.

Building damage has been estimated from correlations between predicted ground movements, distortions of buildings and their effects. Across and following construction, ground movement predictions will be confirmed using various monitoring techniques. Monitoring of the ground offers early movement detection. Where there is a building concern, other measurements (such as building crack monitoring) may be deployed. The IAC considers EPRs GM1 to GM4 suitably provide for this.

EPR GM2 requires (pre-construction) ground movements to be recorded for at least one cycle of seasons (one year), either by conducting surveys, or obtaining data from other sources. EPR GM3 requires GMP development, establishing monitoring duration and quality of monitoring work. The IAC views these EPRs as appropriate. Further, the IAC agrees heritage structure protection is suitably provided by the EPRs. It acknowledges further consultation with asset owners through the Project's detailed design phase is expected and accounted for in EPRs GM1 and GM2.

Predicted movements were based around available EES investigation borehole information, supplemented by inferred geological conditions. While the EES showed some gaps for investigations, Mr Bennett was satisfied with the level of geotechnical information for EES appraisal, where further investigations are planned through EPR GM1, which the IAC supports.

Regarding concerns that effects of piled foundations on ground movements had not been considered, the EES noted the approach for assessment would be made on a case-by-case basis. For piled structures, the ground movement profile at the level of the base of the piles, using slope and displacement criteria, was used to determine whether a 'Level 3' assessment was required and the IAC agrees, this is a suitable assessment method.

Further, in relation to concerns about additional damage to buildings that have already suffered damage, EPR GM3 requires the GMP identify structures that might be susceptible to damage, where the structural form and current condition of a building will be assessed by pre-construction condition survey. The IAC agrees EPRs GM2 and GM3 suitably address this.

The IAC notes the method used in calculating SCO15 offset plan widths is summarised in the EES *Infrastructure Protection Report*. Recommended triggers are set with sufficient buffer around the tunnel design allowances, to provide confidence that all developments potentially of concern will be reviewed. The IAC considers the triggers provide suitable criteria (by the number of building levels and depth of excavation) to determine whether a future development within SCO15 requires assessment by the referral authority.

Submissions S251 and S262 suggested a clearer definition of '*alteration of building*' as internal and external alteration to a building could cover a wide spectrum of works, many of which would have no effective impact on loading, or load changes to the tunnel asset. Mr Bennett agreed the

alteration of a building needed to be more clearly defined, where review would be required if the alterations of a building significantly change its overall mass, required modifications to its foundations, or involved excavations (subsequent changes were made to the draft PSA in response). The IAC finds these suggested changes to be acceptable.

Submission 251 suggested the referral trigger, currently based on the number of storeys of a building, be changed to the height of a building. Mr Bennett responded '*generally, the loading from a building has a stronger correlation with the number of storeys rather than its height*'[192]. The IAC agrees the current referral trigger as proposed should be maintained, in relation to the number of storeys.

In summary, the IAC generally agrees with the Proponent's closing submission:

- anticipated geological conditions along the Project alignment are well known formations and a substantial amount of engineering information (from other large tunnelling projects underway) on their material properties and the risks posed is available to industry
- the EES investigations and modelling for the establishment of the ZoI for appraisal of ground movement impacts to buildings and other infrastructure are appropriate and are observed as best practice for large tunnelling projects
- the risk mitigation approaches for asset protection are rated as 'conventional', whereas across most infrastructure, the anticipated Project impacts generally rate between 'negligible' to 'minor'
- the proposed mitigation measures are similar to those for other recent large tunnelling projects in Melbourne and Australia in relation to:
    - preparation and maintenance of a detailed ground modelling program
    - conduct of building/asset dilapidation surveys, with suitable baselining to account for seasonal soil movements and pre- to post-asset conditions
    - deployment of a suitable GMP
    - undertaking initial treatment works and remedial works (as necessary) to address Project impacts.

14.4.4 Findings

The IAC finds:

- Implementation of EPRs GM1 to GM4, which include the establishment of the GMP and associated mitigation techniques, can adequately manage land instability and ground movement impacts.

14.5 Recommendations

The IAC recommends:

Environmental Management Framework

Include the following changes:

- **Revised EPR SW1 to apply the EPA Victoria, Publication 1992, Guide to the Environment Reference Standard, June 2021.**
- **Revised EPR SW5 (1) to apply the EPA Victoria, Publication 1992, Guide to the Environment Reference Standard, June 2021.**

[192] D74

- **Revised EPR SW5 (3) to ensure modelling of water quality treatment accounts for all site surface water flows (not just incremental flows, based solely on change to impervious site area from the design).**
- **Revised EPR GW5 (5) to require the Groundwater Monitoring Plan be implemented and maintained for a minimum of five years under specified circumstances.**
- **Revised EPR GW 5 (6) to require at least annual publication of groundwater contamination testing results to the State-wide database Water Measurement Information System.**

These changes are included at Appendix G.

14.6 Overall conclusions on surface water, groundwater and land stability

Subject to the recommendations of the IAC, there are no surface water, groundwater or land stability impacts that preclude the Project from being approved or the evaluation objective being achieved.

15 Transport and traffic management

15.1 Introduction

Transport and traffic management is discussed in:

- EES Technical Summaries:
  - Traffic and Transport
- Technical Appendices:
  - R.1 – Traffic and Transport Existing Conditions
  - R.2 – Traffic and Transport Impact Assessment.

The evaluation objective is:

> 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.

As exhibited, the EES proposed eight mitigation measures in the EPRs to manage the impacts of the Project on transport and traffic management. These included:

- EPRs: T1 – T8.

In response to the IAC's RFI and other issues raised at the Hearing, the Proponent provided the following TNs:

- TN01 - Transport modelling reports and report authors (D43)
- TN22 - Traffic and Transport (D372-382)
- TN45 - Responses to transport evidence (D645)
- TN47 - Response to One Mile Grid report at Cheltenham (D738).

Additionally, the IAC had regard to relevant submissions and evidence. Table 11 lists the transport and traffic management evidence. A traffic conclave was held prior to the hearing of traffic evidence, with all experts attending except for Mr Hunter and Mr Greenland [193].

Table 11 Transport and traffic management evidence

Party	Expert	Firm	Area of expertise
Proponent	John Kiriakidis	Stantec	Traffic and transport
Proponent	Robert Dus	Stantec	Traffic and transport
Kingston	Bruce Johnson	Arup	Traffic and transport
Monash	Jason Walsh	Traffix Group	Traffic and transport
Monash	Ross Hunter	Ranbury Management Group	Rail infrastructure
Whitehorse	Bruce Johnson	Arup	Traffic and transport
Monash University	Bruce Johnson	Arup	Traffic and transport
Kingston Heath Golf Club	Chris Greenland	Ratio Consultants	Traffic

[193] D387

15.2 Project wide

15.2.1 What did the EES say?

During construction there would be varying levels of inconvenience to road users and the broader community at and around each Project location due to road closures, loss of car parking and construction activities. Management measures were identified to reduce this inconvenience to a reasonably practicable extent.

Once operational, the Project would increase public transport trips and reduce the number of private vehicle trips on the road network. There would be legacy traffic impacts primarily due to re-routing of traffic around some SRL stations and any notable impacts can be managed with implementation of mitigation measures identified in the EPRs. At each SRL station, the surface transport layout would improve safety for all road users and large cycle parks would help facilitate bicycle trips.

Overall, while some refinement of mitigation measures to minimise any adverse effects on road users would be ongoing, the significant benefits generated by the Project would outweigh any adverse impacts.

The key issues to be resolved are:

- the design year for transport modelling
- the provision of 'paid area connections' to adjacent rail stations
- pick-up/drop-off parking (PuDo) and commuter parking
- use of the Movement and Place Framework.

15.2.2 The design year for transport modelling

(i) What did the EES say?

SRL East is assumed to open in 2035 and the modelled year for operational impacts is the sixth year of operation, 2041. SRL North is expected to be operational by 2056. Pedestrian modelling was undertaken for 2056.

(ii) Evidence and submissions

Mr Johnson raised concern with the selection of 2046 for the design year (six years post-opening) for the transport modelling assessment and recommended that 2051 would be more appropriate being at least 10 years post-opening. He argued a 10-year horizon was standard practice for impact assessments.

Mr Kiriakidis advised that 2046 was an appropriate design year, noting:

- strategic modelling platforms follow five year intervals comprising 2031, 2036, 2041, 2046, 2051 and 2056
- the SRL is being delivered in stages with the following stage expected to be under construction or in operation within the ten year period while subsequent EES processes will consider the years beyond 2041 as well as the local precinct planning
- the station boxes have been designed for 2056 for future proofing.

The Proponent submitted a six year horizon was appropriate for an EES assessment noting that past major project environment effects assessments have adopted assessment years that align with strategic modelling years and were less than ten years. These are:

- Melbourne Metro Tunnel: five years 2031 design year
- Westgate Tunnel: nine years 2031 design year
- North East Link: eight years 2036 design year [194].

The Proponent noted the Project's design years is some twenty years on from the assessment year of 2021 and this is a longer horizon than considered for other identified projects.

Whitehorse submitted the Project should be assessed for a ten year horizon consistent with the Australian Transport Assessment and Planning (ATAP) Guidelines, noting that:

- a six year horizon doesn't allow a sufficiently rigorous assessment of the impact on the road network or appropriateness of the adopted design
- passenger demands are forecast to triple by 2056, with a substantial increase in demand following 2041
- the Project should be assessed on its merits and the prospect of SRL North coming into operation before ten years is not sufficient justification to adopt six years.

DoT submitted it was satisfied with the adopted assessment year and it would continue to assist with further traffic and transport modelling required to support development and delivery of the Project.

Ventana questioned whether consideration of future traffic demand generated by future expansions of the Southland Shopping Centre land had been accounted for in the modelling.

(iii) Discussion

Modelling is not an exact science and the further into the future one seeks to model, the less likelihood there is of a high degree of accuracy due to the number of variances with input assumptions. Such long-term modelling assists with forward planning when considering sensitivity testing around the assumptions. For this Project, there is a future precinct planning process to follow, which will provide a fine grained appraisal of development potential and associated traffic impacts.

The IAC does not expect the EES for SRL North to revisit SRL East precincts, but notes DoT's commitment to ongoing modelling and review. It accepts that Proponent's contention that an assessment year 20 years from 2021 is a reasonable time horizon.

The IAC is however, concerned the Surface and Tunnel Plans, particularly for Box Hill and Cheltenham, seek to lock in significant changes to arterial roads without the benefit of the fine-grained assessment that would be undertaken during future precinct planning.

The IAC notes EPR T6-6 includes a requirement to review the performance of the wider network so that opportunities to re-distribute through traffic away from station precincts can be pursued. This is work that is needed to ensure assumptions that traffic can be redistributed away from the stations, can be realised. Should such opportunities not be able to be realised, this would call into question the robustness of the planned road network changes. This EPR should be widened to include some sensitivity testing around different precinct development scenarios.

(iv) Findings

The IAC finds:

- A 2046 design year is reasonable given it represents a 20-year horizon.

[194] D406

- Further sensitivity modelling of precinct development scenarios and the ability for traffic to be redistributed away from station precincts should be undertaken before locking in surface works plans, this can be done through a modification to EPR T6.

15.2.3 The provision of 'paid area connections' to adjacent rail stations

(i) What did the EES say?

The Project includes a paid area connection to the Clayton Metro station.

Walk times to nearby Metro station platforms would be:

- Cheltenham: 6:10 minute walk time (new pedestrian and cycle bridge)
- Clayton: 2:35 minute walk time (underground paid connection) and 4:50 minute walk time (Clayton Road signalised intersection)
- Glen Waverley: 3:35 minute (pedestrian plaza)
- Box Hill: 3:20 minute walk time (pedestrian plaza).

(ii) Evidence and submissions

DoT submitted the Project includes a paid area connection at Clayton Station and allows for future paid area connections at Cheltenham, Box Hill and Glen Waverley. DoT noted its intention to deliver these additional paid area connections in due course (but could not specify a timeframe) subject to funding and approvals.

The Proponent submitted the designs for these stations make allowances for future paid area connections at Cheltenham, Glen Waverley and Box Hill. The designs for each of these SRL stations enable passengers to interchange without mixing with vehicular traffic.

Works will be required at Box Hill Metro station to connect into the SRL station. This will be done as a separate project in consultation with the shopping centre owner under which the Metro station sits.

At Glen Waverley, the closure of Coleman Parade will facilitate safe interchange between the SRL station and the at-grade Metro station and bus interchange to the north.

At Cheltenham, a pedestrian and cyclist bridge over Bay Road will connect to the Southland Metro station.

Kingston, Monash and Whitehorse all submitted the paid area connections should be provided as a part of the Project.

Monash advised that at Glen Waverley:

> This is a matter of convenience, proper connectivity and commuter safety, in circumstances where the closure of Coleman Parade has unacceptable impacts on Kingsway and the activity centre more broadly – so, a direct paid area connection is the 'best alternative' if the Ring Road is not provided concurrently [195].

Whitehorse advised that it appeared arbitrary to include a paid connection to Clayton Station and not to other Metro stations given the SRLA advised that all connections were feasible.

[195] D480, para 8(a)

Mr Johnson estimated from information in the EES, the following rail to rail interchange volumes in 2041:

- Cheltenham: 7,500 passengers
- Clayton: 24,700 passengers
- Glen Waverley: 2,200 passengers
- Box Hill: 18,100 passengers [196].

(iii) Discussion

There was uniform agreement from submitters and experts that paid area connections were both feasible and would improve multi-modal connections between SRL and Metro stations.

The included paid area connection at Clayton avoids the needs for passengers to cross busy Clayton Road, which has the highest pedestrian demand supporting its inclusion in the Project.

The interchange demands at Cheltenham and Glen Waverley are significantly lower. At Cheltenham, the proposed pedestrian and cyclist bridge will eliminate vehicular conflict and address safety concerns. It is noted a more direct link would be subject to design review with future development of Southland. At Glen Waverley, interchange demands, excluding bus interchange, are even lower and pedestrians will be accessing an at-grade Metro station requiring a short walk across a plaza, or a local collector road in the event Coleman Parade remains open.

At Box Hill, the interchange between all public transport modes will be by way of a pedestrian plaza, thus avoiding conflict with vehicles. However, both the SRL and Metro stations will be underground and the relative high number of interchange movements by 2041 suggests strong support for a direct interchange, noting station patronage is expected to triple by 2056 with the completion of the SRL.

A paid area connection at Box Hill would:

- reduce interchange time
- reduce the vertical travel distances
- improve way finding between stations, noting the Box Hill Metro station entry is located within Box Hill Central shopping centre
- reduce weather exposure
- remove some transiting passengers from a busy shopping area
- avoid the need to tap off and on when interchanging.

In addition, there would be considerable advantages in undertaking the construction of a paid interchange concurrently with the Project to avoid the need to impose additional construction impacts on this local precinct due to the already long construction time.

The IAC notes further work is required to enable a paid connection at Box Hill due to involvement of a third party and DoT's preference to deliver a paid connection as a complementary project.

(iv) Finding

The IAC finds:

- Additional paid connections are not required to enable the Project to meet its transport objective, however, such connections would add significant value.

[196] D404, slide 20

- Delivery of an underground paid connection at Box Hill should be delivered as soon as practicable, preferably concurrently with the Project.

15.2.4 Pick-up and drop-off parking and commuter parking

(i) What did the EES say?

The Project includes parking, generally on street, for PuDo, taxi/ride share, accessible PuDo, rail station staff and maintenance vehicles. No long-term commuter parking would be provided at any of the stations. Commuters would be able to park at Metro stations where available and interchange at SRL East stations.

The location of PuDo parking is shown on the Surface and Tunnel Plans.

(ii) Evidence and submissions

The Proponent advised private vehicle access would rely on designated on-street parking for PuDo and accessible parking for disabled passengers. The Proponent and DoT noted both parties are working to improve access through walking and cycling improvements, with large bicycle parks included in the station buildings. No commuter parking is being provided and this *'… is consistent with stations in other high density areas of Melbourne such as Richmond, North Melbourne, South Yarra, and the five stations under construction for the Metro Tunnel Project'* [197].

The Proponent tabled TN45 to show how additional PuDo parking, beyond what is provided in the reference design, could be provided near each station to address future demand, including when SRL North comes into operation. The additional PuDo parking would be achieved by continuing to reconfigure and repurpose l existing on-street parking. It advised it had not undertaken any surveys of commuter parking at Metro stations but, under pre COVID-19 conditions, such parking was highly utilised.

Mr Kiriakidis gave evidence, the supply of PuDo parking at each station was determined based on patronage forecasts for 2051 (With SRL North and East in operation) and an estimated duration of stay of three minutes (five minutes for accessible spaces); with half of the estimated demand being provided as part of this Project.

He advised the peak hour demand was based on an assumption of ten per cent arrival, but he did not know of any evidence that underpinned the assumptions. He stated the duration of stay could be lower.

Mr Kiriakidis recommended further analysis be undertaken during design development that includes refinement of inputs such as dwell time and research around PuDo arrival patterns during peak periods and any associated queuing [198].

DoT submitted it supported the decision not to provide commuter parking to incentivise other modes of transport. It advised that it is not possible to restrict rail commuter parking only to those that do not have convenient access to public transport. The provision of commuter parking in activity centres would result in more vehicular trips being made in the centres.

At the traffic conclave, Mr Kiriakidis did not agree with Mr Johnson and Mr Walsh that commuter parking should be provided at stations.

[197] D372 (TN22), para 30
[198] D386, slide 28

Mr Johnson opined the SRL East stations are not in inner city locations, where public transport accessibility is higher and parking controls tighter. He suggested there is no clear strategy beyond the provision of cycle parking and some short sections of paths to achieve the aspirational mode share for cycling and there is no clear strategy to manage commuter parking demands.

Mr Walsh advised the existing commuter parking at Glen Waverley is fully utilised and rail passengers arriving by car at Glen Waverley are estimated to increase from 1,500 passengers in 2018 to 2,300 in 2041, a net increase of 800 passengers arriving by car [199]. At Clayton, the net increase is estimated to be 2,300 passengers.

Kingston raised concern with the location of PuDo parking, putting forward an alternative plan for the station precinct, which had been prepared in consultation with Mr Johnson [200].

Monash and Whitehorse expressed concern regarding the location and supply of PuDo parking, noting:

- without providing sufficient convenient PuDo spaces, the use of local streets for pick up and drop off may give rise to safety and operational issues, as well as amenity impacts on local residents
- at Clayton, PuDo access should be easily navigable and convenient and access, noting access by way of Shandeau Avenue is not
- plans for future additional PuDo should not be at the cost of other users and local businesses, but rather, provided within the confines of the SRL station
- there is no certainty, if additional parking demand results from SRL North or SRL West, that it will be in the scope of those EES processes to address sites along the SRL East alignment [201].

Specific locational aspects of PuDo parking at some stations are set out later in this Chapter.

Monash and various submitters expressed concern about the lack of public transport in some areas of Glen Waverley, with some noting the steep topography to the east of Springvale Road makes cycling an unattractive mode choice.

(iii) Discussion

The aspiration to shift mode of travel to rail stations away from private cars is consistent with planning policy. To achieve this, it will be important to provide a high level of accessibility by public transport, cycling and walking, as well as sufficient and convenient PuDo parking. This is something that will need significant expenditure by DoT to provide complementary projects to support the Proponent in achieving the aspirational mode shift.

With the exception of Burwood, the SRL East stations are well located within major activity centres that are expected to continue to grow with the provision of the SRL. The provision of new large car parks for all day commuter parking is not appropriate in these areas.

At Burwood, the absence of commuter parking may discourage use of the station and put pressure of parking in local streets. The provision of commuter parking is a matter that can be considered as part of the precinct planning process, noting it may be a temporary measure that could be readapted as the area develops.

[199] D294, Fig 7
[200] D216
[201] D757

PuDo parking is a key component in supporting the absence of commuter parking.

The IAC was not provided with sufficient evidence to assess the adequacy of the amount of PuDo parking being provided. Further work to validate assumptions is needed. This work should be reviewed by the Transport Management Liaison Group (TMLG). The IAC raises concern regarding the location of PuDo parking at a number of stations (which is discussed in more detail later in the following sub-chapters) to accommodate both Day 1 and longer-term demands.

As discussed in Chapter 12.2, PuDo parking could be provided within the station precincts in the areas nominated for future precinct planning, which in some instances would improve supply, personal safety and travel distance.

Further precinct planning will have a large influence on the ultimate surface plans, and it will be important not to lock in or lock out options through adoption of Surface and Tunnel Plans in their current form.

It is noted that SCO14 ID requires use and development of the Project to be carried out in accordance with the approved UDS and the UDLPs.

The UDS provides guidance on the locational aspects for parking and bus interchanges (and notes the general location of the proposed bus interchanges on its maps). The UDLPs will be used to detail the above ground works and the SCO14 ID, at Clause 4.7.4 requires the UDLPs to have consideration of relevant EPRs. Clause 4.7.5 requires additional consultation with Councils and other stakeholders.

Given the above and concerns in relation to the amount of PuDo parking discussed earlier, the IAC considers it would be preferable for the Surface and Tunnel Plans not to show specific locations for PuDo parking, allowing this to be resolved in the UDLPs, with guidance from the UDS.

(iv) Findings

The IAC finds:

- The absence of new commuter parking in existing activity centres is appropriate.
- The need for some commuter parking at Burwood should be reviewed as a part of the precinct planning process.
- Further work must be undertaken to validate the assumptions underpinning the supply of PuDo.
- The Surface and Tunnel Plans should not specify locations for parking, including for buses, with this detail to be resolved following further work, with the approval of the UDLPs.

15.2.5 Movement and Place Framework

(i) What did the EES say

The EES included an assessment of the Project (in 2041) against 'Existing' and 'No Project' scenarios, using the Movement and Place (M&P) Framework developed by DoT.

(ii) Evidence and submissions

DoT advised the M&P Framework is a future-focussed multi-modal approach to network planning that assesses movement, place and safety functions of roads, streets and interchanges. It is a new tool that has not been used on previous major projects. DoT advised it has provided guidance as to its use and will continue to support the ongoing application of the M&P Framework throughout

development and delivery of the Project. It acknowledged the M&P Framework will continue to be developed and refined. Matters of weightings will be considered by DoT who advised the acceptability of the interchange solutions was not determined by the M&P Framework.

Mr Kiriakidis advised M&P was used to demonstrate the Project would meet the objectives to improve transport connectivity and multi-modal connections. He advised there was some variance in the application of the tool across stations as they were undertaken by different teams of staff for AJM. Mr Kiriakidis and Mr Dus' evidence statement included some technical advice notes from AJM prepared in February 2022 which provided some corrections and sensitivity testing. Mr Kiriakidis and Mr Dus advised he was '*satisfied that the M&P assessments generally represent the likely effect to the network the Project will achieve'* [202].

Mr Johnson stated the use of the M&P tool was not appropriate as it does not consider the number of people undertaking particular movements, the pedestrian capacity or end to end user experience. He advised different weightings were used for some aspects at different stations and the basis for this was not known. He noted the Project did not result in a number of the determined Level of Service targets being met. However, he recommended the requirements of the M&P classifications be included in EPR T5 to guide the construction traffic management.

(iii) Discussion

Amendment VC204 introduced *Movement and Place in Victoria* as a policy document in Clause 18 of the VPP in December 2021. It is a relatively new tool that will need to continue to be developed and refined. Of particular concern is the use of weightings for various elements, which is not contemplated in DoT's guidance material [203].

Like all tools, it has its limitations, particularly with the amount of data it requires or potentially does not use. As the EES only used it to compare Existing, No Project and Project cases, it is not clear how it might be helpful in looking at alternative designs or small changes. Indeed, the use of weightings could influence particular outcomes. Accordingly, the IAC does not support an EPR that mandates its application to construction management for this project.

(iv) Findings

The IAC finds:

- The Movement and Place Framework assessments reasonably demonstrate the Project meets its objective to improve transport connectivity and multi-modal connections.
- EPR T5 should not be modified to require use of the Movement and Place Framework.

15.3 Cheltenham

The key issues to be resolved are:

- surface plan and station access arrangements
- shared path connections.

[202] D386, slide 20
[203] D379, 380

15.3.1 Surface plan and station access arrangements

(i) What did the EES say?

The Project would significantly improve the function of public transport at Cheltenham with an orbital rail link and new bus interchange located in a new service road on Bay Road. A single station entry is orientated to Bay Road, Southland Station and Southland Shopping Centre. The station design includes an underground train crossover facility to allow terminating trains to turn back and recommence services in the opposite direction.

PuDo parking would be located in the Nepean Highway service road, with accessible spaces located to north of the station box along a new access road within Sir William Fry Reserve.

(ii) Evidence and submissions

The Proponent submitted the road network plan shown in the Surface and Tunnel Plans prioritises the use of public transport over other modes and allows passengers to interchange between rail and bus without interacting with other vehicles. It advised the station entry was set well back from Nepean Highway, as the design for the below ground works includes a train crossover facility between the platform and Nepean Highway. Providing an entry at Nepean Highway would require a long access adit and would not shorten travel distances to the platform.

The Proponent submitted plans showing additional PuDo parking could be provided by utilising more of the existing kerb side parking along the Nepean Highway service road [204]. It noted PuDo parking could potentially be provided on Bay Road and within the station access road [205].

It further advised, the UDS included a requirement to provide for a future pedestrian and cycle crossing on Nepean Highway at Outcome CTM4d.

Mr Kiriakidis supported the location of the exhibited PuDo spaces. However, he recommended further work be undertaken to ensure PuDo parking did not obstruct the Nepean Highway service road entry. He suggested provision be made for vehicles to U-turn on Nepean Highway to return south when departing the PuDo. He supported the provision of a new crossing on Nepean Highway.

Kingston provided an alternative surface plan that included, among other things, a road through the station from Nepean Highway to Bay Road, that could accommodate the PuDo parking and allow buses to circulate to reach bus bays located on Bay Road. It sought a station entry at Nepean Highway to provide weather protection and traffic signals on Nepean Highway at Enright Street to improve pedestrian and connectivity (a position echoed by several submitters).

Kingston was concerned the Surface and Tunnel Plans would lock out alternative options and recommended the plans be simplified, with arrows rather than specific roads and boxes. It suggested more reliance should be given to an outcome driven by the UDS.

Mr Johnson raised concern the transport modelling simply diverted traffic away from the precinct to ensure the modelling indicated the intersections operated within acceptable limits, with the exception of the Southland entry which had a level of service of 'F'. He stated the performance for buses could be much worse than the modelling indicated if some traffic did not divert.

[204] D645, p17
[205] D215, p15

Mr Johnson considered the Project did not integrate well with the residential area to the north-east due to the Nepean Highway being a barrier to pedestrian access and the design providing poor weather protection for pedestrians, as well as a lack of activation at night. He advised he had assisted in the development of Kingston's alternative plan and considered it provided improved passive surveillance, and a better balance of walking, cycling and bus performance.

Submitter 302 (Ventana) was concerned with the delay outcome as modelled for traffic exiting Southland. It queried whether the modelling had accounted for the future development at Southland. It raised further issues with the location of bus bays on the south side of Bay Road to the west of the Southland entry.

The Proponent tabled a review of Kingston's alternative plan. It raised concerns about requiring bus passengers to cross an internal road, thus conflicting with circulating buses and PuDo vehicles [206]. It had further concerns about road safety with the bus interchange being a row of bus bays on Bay Road.

(iii) Discussion

Many of the issues Kingston raised in respect of the Surface and Tunnel Plan are matters addressed in the UDS. While Kingston's alternative plan has some merit, it and other options may exist that can be explored further as the urban design plans are more fully developed. The IAC sees benefit in moving the PuDo parking closer to the station entry, but considers the bus interchange would be safer within a service road, rather than directly on Bay Road, due to traffic and safety impacts.

Connecting pedestrians across Nepean Highway is important to assist the Project in meeting its transport objective of connectivity and the Project should include a convenient and safe crossing facility in the vicinity of Enright Street.

EPR T6 includes a requirement for road designs to be underpinned by appropriate traffic analysis and this will be subject to the review of the TMLG under EPR T2.

As discussed earlier, the design of the above ground road infrastructure, including PuDo parking and the bus interchange, would best be resolved in the UDLPs under the guidance of the UDS.

(iv) Findings

The IAC finds:

- Traffic capacity issues in the Cheltenham precinct will be addressed through EPR T5.
- The Urban Design Strategy Outcome CTM4d should be modified to include a new pedestrian and cycle crossing on Nepean Highway, rather than simply allow for it to be provided in the future.
- The location and provision of PuDo parking should be reviewed and this can be addressed in conjunction with the UDS.

15.3.2 Shared path connections

(i) What did the EES say?

Nepean Highway, Bay Road and the existing railway are major barriers for active transport. Active transport works include a new active transport bridge over Bay Road connecting to Southland

[206] D216

Station, a dedicated off-road cycle path along Bay Road under the existing rail line, 1.6 kilometres of new or upgraded footpaths, and nine new or upgraded crossings. A total of 400 bicycle parking spaces will be provided, with space to double this in the future.

The EES noted DoT and local councils will continue to have responsibility to deliver wider upgrades to the network.

(ii) Evidence and submissions

The Proponent advised the Bay Road pedestrian and cycle bridge were designed to orientate towards the SRL station entry while facilitating access to the proposed cycling corridor to the Metro line. It submitted the Project includes part of the future C1 high speed commuter cycle link along the Metro line within the Project boundary, but extension beyond that boundary was out of scope of the Project.

Kingston sought a modification to the Surface and Tunnel Plans, to include a wide throat to the northern entry to the pedestrian and cycle bridge over Bay Road. This was to allow a higher speed connection to the proposed shared path running along the rail line. It commended the layout shown on the 'work in progress' Cheltenham Urban Design General Arrangement Plan tabled as part of Ms Caffin's evidence [207].

A number of submitters sought additional shared paths, noting riding was dangerous on Nepean Highway with one-way service roads an impediment to cycling connectivity. They raised safety and connectivity concerns with the proposed bicycle path along Bay Road, noting Park Road was the preferred route for cycling, Bay Road is congested and the termination of the cycle path at Jackson Road, which they believed would lead to traffic chaos.

Submitter 340 recommended a shared path along the Metro rail line was needed now and would provide an important access route for construction workers.

(iii) Discussion

A C1 corridor is primary route that connects places of significance, in this case Metropolitan Activity Centres. A C2 corridor is a main route that provides additional connections to significant destinations and key railway stations.

The Bay Road pedestrian and cycle bridge will be a critical link, both between the two rail stations, and for the proposed C1 commuter cycle link along the Metro line. The northern end of the bridge will need to be wide enough to facilitate both routes. The IAC accepts the Surface and Tunnel Plans are indicative, but if relied upon too prescriptively, may limit design parameters as further work is resolved.

The Proponent seeks to encourage cycling as a mode of transport to the station. To achieve this, there will need to be high quality cycle links. The Proponent is addressing the major barriers by providing a bridge over Bay Road and a cycle path under the Metro line extending across Nepean Highway. A new crossing on Nepean Highway will help to reduce the barrier posed by the highway.

DoT will continue to have a role in providing new shared paths to complement the Project and these should be pursued as concurrent projects to assist in encouraging cycling as a key mode of transport.

[207] D395

(iv) Findings

The IAC finds:

- The Cheltenham Surface and Tunnel Plan should be modified to show a wider northern entry to the pedestrian and cycle bridge over Bay Road.
- The development of shared paths beyond the Project boundary are not required as a part of the Project, but should be considered by DoT as concurrent projects to help facilitate the aspirational mode split to cycling.

15.4 Stabling Facility

The key issues to be resolved are:

- closure of Old Dandenong Road
- Kingston Road traffic impacts.

15.4.1 Closure of Old Dandenong Road

(i) What did the EES say?

The closure of Old Dandenong Road will lead to a minor increase in travel time for private vehicles, but not buses. A right turn facility will be constructed on the Dingley Bypass to facilitate buses only to turn right onto Kingston Road from the north.

(ii) Evidence and submissions

The Proponent advised that since the opening of the Dingley Bypass in 2016, the traffic and transport function of Old Dandenong Road was reduced with that road now carrying relatively low volumes. It noted traffic could divert to Boundary Road to reach Kingston Road from the north. To retain Old Dandenong Road, the Stabling Facility would need to lowered by 10 metres, generating some 200,000 to 400,000 cubic metres of additional spoil, thus increasing the costs and time of construction, among other impacts.

Mr Kiriakidis advised the primary traffic impact would be the loss of the right turn from Old Dandenong Road into Kingston Road, with the Dingley Bypass able to cater for other movements. This would affect a relatively small volume of traffic and the next signalised intersection on the Dingley Bypass, 900 metres to the south, would allow motorists to loop back.

TN22 advised if a right turn was to be provided on the Dingley Bypass, the demand for the right turn from the north in 2026 would be 85 vehicles in the AM peak and 129 vehicles in the PM peak. It recorded there was insufficient capacity at the Dingley Bypass/Kingston Road intersection to accommodate this turning movement.

Kingston 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 local residents.

Mr Johnson gave evidence the closure of Old Dandenong Road would create a barrier for local movements between Heatherton and Clarinda and would impact recreational facilities, including the KHGC. He advised there would be a two kilometre additional travel distance and up to five minutes additional travel time due to the loss of the right turn movement.

MTTY submitted Old Dandenong Road was 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. It submitted the connection was important enough to be included in the Dingley Bypass

design and should not be lost; and highlighted the EES had not identified this road link and therefore underestimated impacts.

(iii) Discussion

Old Dandenong Road now forms a local connector function. The EES did not consider the impact of closing the vehicular route from the Elder Street South underpass on the local Heatherton residents. A five-minute increase in travel time is a significant impact for local shopping trips, roughly doubling the trip time in one direction, and adds to other negative impacts resulting from this element of the Project.

In addition, the IAC notes that while the route can still be used for walking and cycling trips, there will be less visual surveillance of the underpass with the loss of the vehicular connection from Kingston Road.

It is feasible to mitigate this impact through the provision of a local turning facility to reduce the travel time for movements from north to west.

(iv) Findings

- The closure of Old Dandenong Road will have an adverse impact on local residents to the west of the Stabling Facility.
- 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.

15.4.2 Kingston Road traffic impacts

(i) What did the EES say?

Kingston Road is one lane in each direction, with allowance for kerbside parking. The daily heavy truck generation is 370 trucks (740 truck movements). Three gates to the Stabling Facility are proposed for construction access, with two gates on Kingston Road and one on Old Dandenong Road. Traffic will be split equally across the gates.

A traffic management plan (TMP) would seek to minimise disruption and prevent queuing outside the worksite. However, there would still be some disruption in the vicinity of the site access points due to construction vehicles entering and exiting the site.

(ii) Evidence and submissions

The Proponent submitted that as Kingston Road is already a declared B-double route, it was a suitable road for truck access during construction.

Mr Kiriakidis advised Kingston Road is marked as a two-lane road in front of the Stabling Facility and could potentially support four lanes. He noted this was occurring now in practice, but noted driving two abreast depends on driver confidence. Mr Kiriakidis advised a typical arterial carries around five per cent of heavy vehicles, while Mr Dus suggested a range of five to 10 per cent. Mr Kiriakidis noted there would be increased truck activity on Kingston Road associated with the Project.

Mr Kiriakidis advised there is a network of shared paths around the Stabling Facility that connects between Pietro Road and Henry Street. He said the network would benefit from a pedestrian

crossing on Kingston Road to the west of Pietro Road. He recommended this be considered as part of detailed design [208].

Mr Johnston raised concern with pedestrian safety on Kingston Road during construction. He supported the need for a pedestrian crossing near Pietro Road. He recommended the use of western construction gate (Gate 2) on Kingston Road be minimised to reduce residential and traffic impacts.

Mr Greenland gave evidence that Kingston Road, outside the Stabling Facility, is currently carrying in the order of 20,000 vehicles per day, with approximately 13 per cent heavy vehicles [209]. He advised vehicles slow to move around a vehicle stopped to turn right into the KHGC.

He noted there have been six reported vehicular accidents, including three resulting in serious injuries, over the last five-year reporting period in this section of road. Five of the accidents were described as rear end crashes, while one was described as a rear end accident with a vehicle turning left into the KHGC.

He advised the majority of Club patrons arrive from the west, doing a right turn into the KHGC. He advised a new golf course was under construction with car park access from a new (second) entry at its eastern boundary on Kingston Road.

To mitigate the impacts of the Project, Mr Johnston recommended Kingston Road be line marked as a three-lane road, including a dedicated right turn lane into KHGC. He advised this would improve safety for traffic turning into the Golf Club in the AM peak by providing space for right turners to stop clear of the eastbound through lane. He contended this was required due to the increase in heavy vehicles and construction worker traffic on Kingston Road. He noted the traffic volume on Kingston Road would meet Austroads' guidelines for the provision of a right turn lane into the Golf Club.

The provision of a right turn lane into the Golf Club was not supported by Mr Kiriakidis, due to impacts on other traffic, as through traffic would not be able to travel two abreast.

MTTY expressed concern with the safety impact of Gate 2 on Kingston Road, noting a crest already obstructs sight lines for drivers exiting Nicholas Grove. It contended this will be exacerbated with trucks slowing and potentially queuing on Kingston Road to enter the construction site.

(iii) Discussion

Safety is a paramount consideration. In 2022, Kingston Road is already carrying 20,000 vehicles per day with, as advised by Mr Greenland, a very high proportion of heavy vehicles (13 per cent) [210]. This volume is it at a level where duplication may ordinarily be considered.

Kingston Road has already been widened to provide two through lanes in each direction (plus turning lanes) at both its intersection with Old Dandenong Road and at its intersection with Ball Road (400 metres to the west of the Stabling Facility).

The current road width between these two intersections 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. This constraint was noted by both experts, with Mr Kiriakidis noting 'driver confidence' was required to travel two abreast.

[208] D386, slide 31
[209] D360
[210] D360, Table 3.1

The IAC is concerned about the current accident history, which shows a series of rear end accidents. Adding two construction access points onto this section of road will exacerbate this.

Given both the high traffic volume and current very high proportion of truck traffic, an additional 500 additional heavy truck movements per day during construction, slowing and turning into and out of the site, will have a significant effect on road safety in the vicinity of the site.

Large heavy vehicles will need to slow down to turn into the site and this will result in increased potential for rear end accidents or vehicles attempting to pass trucks raising the potential for head-on accidents if they cross the centreline. Exiting trucks will also increase the potential for accidents.

The IAC notes Mr Greenland's recommendation to mitigate this impact on KHGC traffic by marking a dedicated right turn lane for the Golf Club traffic. While this could be accommodated, the benefit would be limited to a small group of road users in the AM peak at the expense of other traffic and the ability to create two through lanes in each direction.

While not explicitly discussed at the Hearing, the IAC considers Kingston Road would benefit from being widened and marked to safely accommodate two lanes of traffic in each direction along the frontage of the Stabling Facility site.

The IAC notes that part of site's Kingston Road frontage is already set back to allow some additional road space at the Old Dandenong Road intersection. It would be appropriate to continue the setback along the whole of the frontage and widen the road. This would assist in mitigating the impact of providing construction access on Kingston Road, allowing through traffic to safely pass slow moving and turning trucks.

Widening the road for construction will provide legacy benefits, helping to offset some of the other disbenefits of constructing and operating the Stabling Facility at this location.

The IAC noted the difficulty in turning right out of Nicholas Grove during its site visits due to the volume of traffic on Kingston Road. It considers this will be further exacerbated by truck movements at Gate 2 and will need to be addressed in the construction TMP. The traffic management plans should seek to ensure that trucks do not need to stop on Kingston Road. Prohibiting trucks turning left into Gate 2 may assist in minimising impacts on traffic exiting Nicholas Grove.

As Mr Kiriakidis noted, the provision of a pedestrian crossing on Kingston Road would help connect the shared path network, as well as improve access to the bus stops on Kingston Road.

This area will be heavily impacted by the Project and providing safe access to the bus stops outside and across the road from the Stabling Facility site and to Pietro Road will help to:

- encourage residents to use the local bus service along Kingston Road to reach the rail stations at Cheltenham and for local shopping trips
- allow nearby residents to safely cross Kingston Road to reach open space and alternative walking trails
- provide safe access for construction workers using public transport to access the site.

While typical pedestrian warrants for a crossing may not yet be met, the volume of heavy vehicles on this road and total volume of traffic increase the need for a safe crossing. This will not only be important to mitigate traffic and social impacts during construction but will be a beneficial legacy project for the community.

(iv) Findings

The IAC finds:

- Kingston Road should be widened to four lanes outside the Stabling Facility to mitigate construction traffic impacts and improve road safety.
- The construction TMP will need to consider impacts on Nicholas Grove and Golf View Road.
- A pedestrian crossing should be provided on Kingston Road to mitigate construction impacts and improve safety for pedestrians and public transport users.
- Improvements to Kingston Road to mitigate construction impacts will have beneficial legacy impacts for the local community.

15.5 Clayton

The key issues to be resolved are:

- closure of Carinish Road and location of PuDo parking
- station access arrangements.

15.5.1 What did the EES say?

The closure of Carinish Road would result in some local traffic re-routing, with Haughton and Madeleine Roads easily able to accommodate any changes to traffic volumes. It would provide a new pedestrian plaza that provides a safe and attractive place for passengers using the southern entrance of the SRL station.

An entrance on the eastern side of Clayton Road would provide access to the Clayton campus of Monash Health, which would be a significant destination for passengers.

15.5.2 Closure of Carinish Road and location of PuDo parking

(i) What did the EES say?

Permanent closure of Carinish Road west of Clayton Road will enable a new station plaza and public realm interfacing with the SRL station and providing direct connection between Metro, Regional and SRL services. The closure of Carinish Road is also required for construction of the station box.

The U-turn movement, from south to south on Clayton Road (at its intersection with Carinish Road) will be banned to prevent excessive queuing from traffic diverted around Carinish Road closure.

Traffic flow on Clayton Road will improve as traffic will reroute to other arterials with the closure of Carinish Road, resulting in traffic re-routing to other arterial roads and the loss of the fourth leg of the Carinish Road and Clayton Road intersection signals.

Local traffic diverted from Carinish Road will increase traffic volumes on Madeleine Road, which was not included in the local VISSIM transport software model, and other roads.

(ii) Evidence and submissions

In a supplement to Position Paper 3, the Proponent advised Carinish Road was required to be closed during construction for six years. It noted maintaining its closure would be '*highly desirable during operation to deliver a high-quality station forecourt and pedestrian environment between*

the SRL and MTM stations' [211]. Vehicles approaching the station from the north could use the new traffic signals at Shandeau Avenue to access the precinct and travel 400 metres along Madeleine Street to reach the SRL station. The various options explored to facilitate traffic heading south from the precinct included:

- provision of a right turn at the Shandeau Avenue and Clayton Road intersection
- turning left out of Haughton Road into Clayton Road and then performing a U-turn at the Carinish Road (east) intersection, noting the U-turn on Clayton Road would not have capacity to accommodate all diverted traffic
- travelling south via Haughton Road, Faulkner Street and Prince Charles Street to Centre Road.

Drivers could use existing short-term parking and PuDo parking to the east side of Clayton Road near Clayton Station for PuDo activities from the station entrance at the Remembrance Gardens [212]. Additional PuDo parking could be provided to cater for future demands when SRL North is in operation by converting more spaces on both sides Haughton Road to provide an additional nine PuDo spaces [213].

PuDo parking is proposed to be located on the north side of Haughton Road, accessible from the proposed plaza, with accessible bays in the new street along the west side of the station.

Mr Kiriakidis gave evidence there would be capacity benefits to Clayton Road by the closure of Carinish Road, freeing up 'green time' for the arterial road. He noted the Clayton Activity Centre Precinct Plan (2020) has a longer-term aspiration to reduce traffic on Clayton Road.

He advised modelling showed there would be sufficient capacity on local roads for traffic to be diverted, noting the EES showed that traffic will increase on Madeleine Street, Shandeau Avenue and Prince Charles Street. Some traffic would be diverted from the area to Wellington Road.

Mr Kiriakidis agreed with Mr Walsh the closure of Haughton Road would have less impacts than Carinish Road, but he did not consider it would achieve the various objectives of the Project.

Monash submitted that Carinish Road should remain open in construction and operation and the station box shifted northward, if required, to accommodate this. It noted the plans for additional PuDo parking in TN45 overrepresent the amount of parking that could physically be provided in the kerb lengths available. It expressed concern regarding access to the PuDo.

Mr Walsh advised Carinish Road currently carries in the order of 6,000 to 7,000 vehicles per day. with all turning movements accommodated at its intersection with Clayton Road. The closure of Carinish Road, while providing pedestrian benefits, would significantly impede traffic from the local area to the northwest of the station to exit the area and head south due to right turn bans at other intersections. Haughton Road, which runs parallel to Carinish Road on the south side of the Metro rail reservation, and which has a link to Carinish Road under the rail overpass, is limited to left in and left out at Clayton Road.

Mr Walsh advised the closure of Carinish Road would conflict with the Clayton Activity Centre Structure Plan which envisions the closure of Haughton Road. The Haughton Road and Clayton Road intersection was downgraded as part of the level crossing removal project (from a full signalised intersection) leaving Carinish Road to accommodate right turns in and out of the area.

[211] D713, PP3A, para 4a
[212] D713
[213] D645, TN45, p2

(iii) Discussion

The closure of Carinish Road was put forward to provide for a pedestrian plaza. The IAC notes an underground paid connection is proposed under Carinish Road to accommodate the major pedestrian flows between the Metro and SRL stations, with a further underground connection to the Remembrance Gardens to cater for the flows to and from the Monash Medical Centre.

The closure of Carinish Road is contrary to both the Clayton Activity Centre Precinct Plan (which recommends the closure of Haughton Road not Carinish Road) and the recent downgrading of Haughton Road to left in and left out as part of the level crossing removal program.

The closure will have significant impacts on accessibility of the area and would create convoluted access arrangements to reach and depart the SRL station by car. Requiring station traffic from the north to enter the local street network some 400 metres north of the station is not consistent with local street functions, nor for convenient and logical way finding. It is likely to need to rely on extensive signage.

The EES noted there will be an increase in traffic on Madeleine Street by over 500 vehicles per day as a result of the road closure, but it did not include Madeleine Street in the VISSIM model, noting it was incorrectly classified as a Connector Street Level 1 [214]. The VISSUM model did not assess local street impacts.

The evidence of Mr Kiriakidis and Mr Dus provided an assessment of traffic volumes on Madeleine Street, classifying it as Residential Access Street Level 2, reporting daily volumes as follows:

- Existing modelled volume: 0 vehicles/day
- Existing survey 2021: 1724 vehicles/day
- No Project 2041: 0 vehicles/day
- With Project 2041: 1705 vehicles/day
- Difference: 1705 vehicles/day (Project to no Project) [215].

The 2041 data appears to be from the VISSIM model, which did not include local streets. Adding the difference between Project and No Project scenarios onto the existing traffic would result in a volume over the target volume for the Madeleine Street.

The data for Shandeau Avenue and other streets show inconsistencies when compared to 2021 survey data, as does the data for the 2031 construction period, presented in their combined evidence in reply statement [216].

Further, the assessment of PuDo parking opportunities appears to be overestimated with substandard bays lengths drawn. These data errors result in the traffic impacts being underestimated.

It will be important to ensure that, given the absence of commuter parking, PuDo spaces are conveniently located, easy to access and practical. The IAC notes that while the Proponent has stated traffic leaving the PuDo space and heading south could do a U-turn at the Clayton Road/Carinish Road intersection, the EES identified the U-turn would be banned as a part of the Project.

[214] TA R.2 Chapter 7.1.6, p172 and Table 7.15
[215] D230, Fig D6
[216] D345, Table 10

Opportunities to include PuDo parking within the sites identified for future precinct planning could be pursued as discussed in Chapter 12 to improve amenity and supply.

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.

(iv) Findings

The IAC finds:

- The closure of Carinish Road will have significant impacts on local traffic movements and way finding that are not mitigated.
- The permanent closure of Carinish Road is not needed to meet the transport objective of the Project and it should be modified to allow Carinish Road to remain open.
- A temporary closure of Carinish Road is required to construct the pedestrian access adit, but the design and construction methodology should seek to minimise duration of that closure.
- The location and provision of PuDo parking should be reviewed.

15.5.3 Station access arrangements and bus interchange

(i) What did the EES say?

The EES noted almost three quarters of passengers will access the SRL station at Clayton by rail, with one fifth accessing the station by bus. A station entry on the east side of Clayton Road will provide access to the health precinct.

(ii) Evidence and submissions

Submitter 93 called for a station entry at Monash Medical Centre and at the bus interchange.

The Proponent advised the majority of SRL passengers will be interchanging between rail and bus services that requires a co-location with Clayton Station and its adjacent bus interchange. Monash Medical Centre is over 200 metres to the north and a pedestrian adit connection of that length is undesirable due to safety issues. Constructing an adit would require cut and cover construction due to soil conditions, resulting in additional costs, land acquisition and disruption or demolition of several significant buildings.

The entry at the Remembrance Gardens will allow passengers to cross under Clayton Road to reach the Monash Medical Centre and bus interchange.

The Proponent advised the station box design allows for an additional paid area connection to Clayton Station by way of a link under Clayton Road, with two options available [217].

(iii) Discussion

The Project will include paid connection (by way of an adit under Carinish Road and an elevator) to link passengers into the elevated Clayton Metro station and an underpass to the Remembrance Gardens to minimise the need for passengers to cross Clayton Road. Passengers who wish to cross at-grade can use the traffic signals under Clayton Station.

[217] D217, p14, Figure 8

A station entry at Monash Medical Centre would be convenient to reduce weather exposure but the IAC accepts the advice of the Proponent on its feasibility and safety.

(iv) Findings

The IAC finds:

- The station entries are well located and an additional station at the Monash Medical Centre is not justified.

15.6 Monash

The key issue to be resolved is:

- station access arrangements and bus interchange.

15.6.1 Station access arrangements

(i) What did the EES say?

Approximately 60 per cent of pedestrians entering and exiting the station would be associated with Monash University to the south of Normanby Road. The Project includes an option of a pedestrian underpass to the south side of Normanby Road off Scenic Boulevard (Option A). This would relieve pedestrian crowding at the intersection of Normanby Road and Howleys Road, and result in improvement of traffic performance.

(ii) Evidence and submissions

The Proponent advised that it had come to a private and confidential agreement with Monash University in relation to the Project, but did not specify if this addressed matters relating to the location of the station.

The Proponent acknowledged there was consensus at the traffic conclave, to move the northern station entry closer to the bus interchange. However, it advised that moving the station entry would not reduce walking distances without a corresponding shifting of the station box location, noting a crossover facility was located underground to the north of the station box. This would increase the walking distance to Monash University, as the southern entry accommodates the primary movements to it.

In response to an RFI from the IAC, the Proponent advised it did not anticipate the need to upgrade footpaths in the wider area, referring to the pedestrian assessments at Figures 7.43 and 7.44 of TA R.2 [218].

Mr Kiriakidis advised that to cater for pedestrians crossing Normanby Road, a 10 metre-wide crossing would be provided on the east side of the Howleys Road intersection. He compared the width of this crossing with crossings at Flinders Street station:

- Swanston Street crossing: 13 metres
- Flinders Street crossing: 7.5 metres.

He acknowledged further work needed to be done to resolve pedestrian conflict at the southeast corner of the intersection with the bi-direction off-road cycle path proposed along the southern side of Normanby Road.

[218] TN22: RFI 86, para 13

Mr Johnson highlighted the pedestrian assessment in TA R.2 did not consider pedestrian movements south of Normanby Road.

Submitter 356 sought a station entry on Ferntree Gully Road.

(iii) Discussion

The EES identified that more than half of the station pedestrian catchment would be to the south, into Monash University. However, other than providing Option A as a potential underpass under Normanby Road, it provided no assessment of this predominant pedestrian movement past the southern kerbline of Normanby Road.

There is no commitment to provide Option A and the street layout plan was prepared without it.

The size of the Monash University pedestrian movement was highlighted by the need for a 10 metre-wide crossing. It is yet to be resolved how this movement would cross the proposed off-road cycle path, along Normanby Road, or continue into the campus. Monash University was not designed for a significant pedestrian flow between the main campus buildings and Normanby Road, with only a narrow footpath along the east side of Scenic Boulevard and no footpath on the west side.

Assessment of how pedestrians would flow into the campus is required to fully understand the risks and impacts of the Project and the need for Option A and pedestrian facilities within it.

The IAC notes that Monash University did not pursue issues relating to its pedestrian catchment and the IAC is unaware if the agreement reached between the University and the Proponent covers this issue. Regardless of who pays for works within the University campus, a study of the need for works should be undertaken and it would be appropriate to require this in EPR T8.

In relation to the northern station entry, the IAC accepts the station entry is in an acceptable location but agrees the bus interchange should be moved closer to the station entry. This can be achieved under guidance of outcome MSH2 in the UDS, which requires a multi-modal transport hub that provides for quick and efficient movement of people between public transport access points.

In this regard, it is noted that both the Surface and Tunnel Plans and Figure 16: 'Monash place-specific requirements' diagram in the UDS shows the location of the bus interchange. Figure 16 in the UDS should be amended to show the bus interchange closer to the station entry. There is no need for the Surface and Tunnel Plans to show the location of the bus interchange given its location will be determined by way of the UDS and ultimately detailed in the UDLP.

Providing a long pedestrian adit as far as Ferntree Gully Road is likely to introduce safety concerns that would outweigh other benefits and is not supported.

(iv) Findings

The IAC finds:

- An 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 need for Option A
  - design of Normanby Road/Scenic Boulevard/Howleys Road intersection.
- The location of the northern station entry is acceptable.

- The bus interchange should be moved closer to the station entry and this can be done under the guidance of the UDS.

15.7 Glen Waverley

The key issues to be resolved are:

- closure of Coleman Parade
- location of replacement car parking.

15.7.1 Closure of Coleman Parade

(i) What did the EES say?

Construction of the station and associated works will result in:

- permanent closures of Glendale Street and Coleman Parade, between Kingsway and Myrtle Street, with traffic on Kingsway south of Coleman Parade predicted to more than double with the Project than without the Project [219]
- temporary closure of Montclair Avenue during construction
- re-routing of bus route 737 adding three to four minutes travel time, as it would need to use Springvale Road to divert around the closure of Coleman Parade
- improvements to cycling and pedestrian connectivity.

(ii) Evidence and submissions

The Proponent submitted permanent closure of Coleman Parade is required for construction of the station box. In operation, the road closure will provide for a pedestrian plaza enabling SRL passengers to access the Glen Waverley Metro station and bus interchange without crossing a road.

The Project allows for a future underground connection to be provided to the Metro station, but this is not part of the Project, neither is undergrounding the Metro station. Undergrounding of the Metro station would require the relocation of the existing stabling facility, catering for five trains.

Monash submitted lowering of the Metro rail and station has been a long-held policy of Council to facilitate construction of a ring road by extending Myrtle Street north across the rail line. It submitted this need was being exacerbated by the proposed closure of Coleman Parade. This policy is embodied in the Glen Waverley Activity Centre Structure Plan, which was implemented into the Planning Scheme on 25 January 2018 by Amendment C120 and is supported by various other plans and Clause 22.14.

Monash called for a supplementary EES to consider the ring road and rail station lowering projects or a recommendation that they be undertaken as a concurrent project to SRL East.

Mr Hunter provided evidence on how the Metro station could potentially be lowered with a stabling facility for three trains located to the west near Syndal station.

Mr Walsh recommended Coleman Parade remain open during the eight-year construction period. When operational, noting the road carries currently around 7,000 vehicles per day, a significant proportion would reroute via the Kingsway shopping strip, which conflicts with Monash's vision to downgrade traffic on this strip in favour of improved pedestrian amenity.

[219] TA R.2 Tables 7.38, 7.39 (construction), 7.43 and 7.44 (operation)

Mr Walsh advised the pedestrian volume in Kingsway is comparable to predicted volumes that would cross Coleman Parade in operation.

The Proponent advised it proposes to replace the lost parking with a new car park structure on the north side of the rail line. Mr Walsh gave evidence that replacement car parking should be located to the south of the rail line between the station box and Myrtle Street, keeping it conveniently accessible to the Kingsway shopping strip, a position supported by Monash.

(iii) Discussion

The IAC acknowledges the Metro rail line forms a significant barrier to north-south movement at the western edge of the Activity Centre. Coleman Parade provides a key traffic route for patrons from the southwest of the centre to travel to the northern side of the centre.

The Kingsway shopping strip will be significantly impacted by:

- closure of both Coleman Parade and Montclair Avenue for the eight-year construction period
- permanent closure of Coleman Parade in operation
- relocating the main carpark and new car parking to the northern side of the rail line.

The closure of Coleman Parade was proposed to facilitate safe and convenient access between the SRL station and the Metro station, bus interchange and commercial area to the north. However, this comes at the disbenefit of the Kingsway area and bus route 737.

While some traffic may be diverted out to High Street Road, the majority would be diverted onto Kingsway via Bogong Avenue and travel through the shopping strip. Kingsway would need a significant redesign to cater for this increase in traffic and it is at odds with aims to improve pedestrian amenity. The traffic impacts on the Kingsway strip was not assessed in the EES.

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 vehicular traffic.

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.

Due to the duration of construction, all effort should be made to maintain at least some traffic flow on Coleman Parade and minimise the duration where the road must be fully closed to minimise impacts on the Kingsway strip.

(iv) Findings

The IAC finds:

- Coleman Parade should not be permanently closed as part of the Project.
- Construction should seek to minimise the duration of the closure of Coleman Parade and maintain at least some traffic flow whenever possible.

15.7.2 Location of replacement parking

(i) What did the EES say?

Construction of the station and associated works will result in the need to replace over 300 parking spaces, with sites being investigated by the Proponent in consultation with stakeholders.

(ii) Evidence and submissions

The Proponent identified a site to the northwest of the bus interchange to accommodate parking which would be lost in the Glendale Street car park.

Monash submitted the parking was being partly funded by the Kingsway shopping strip traders and it should be replaced on the south side of the rail line, where it would best service the southern area of the Activity Centre.

At the traffic conclave, Mr Walsh contended that impacted parking should be located in a manner that '*provides an equivalent level of support to the operation and success of the Activity Centre*'. Mr Walsh and Mr Kiriakidis agreed more work was needed to identify the level of provision and its ultimate location.

(iii) Discussion

The Proponent's preferred site for the replacement car parking to the north-east of the bus interchange, will add at least a 200 metre walk back to its primary catchment. Noting preference for car parking to be located at the periphery of activity centres, this is not an unreasonable distance.

The IAC is, however, unable to make any recommendation on a car park location, as it has not been provided with an assessment of the benefits and disbenefits of this or other locations in the Activity Centre. No information was provided on the origin of traffic likely to use the car park nor the potential for a car park to the north of the Metro rail line to attract users from the Bogong Avenue car park creating a rebalance of traffic patterns. The IAC agrees with the traffic witnesses that further study is required to determine where the ultimate location of the replaced car park would best meet the needs of the Activity Centre.

EPR B5 allows flexibility for the assessment of a new car park location, but it could be enhanced with a further requirement to minimise traffic impact on Kingsway between Coleman Parade and Bogong Avenue.

(iv) Findings

The IAC finds:

- Further study is required to determine where best to locate replacement parking.
- EPR B5 2 should be amended to include a requirement to minimise traffic impact on Kingsway south of Coleman Parade.

15.8 Burwood

The key issue to be resolved is:

- shared path along Gardiners Creek to Highbury Road.

15.8.1 Shared path along Gardiners Creek to north of Burwood Highway

(i) What did the EES say?

Burwood Highway would be upgraded with a pedestrian bridge, new tram stop and new signalised intersections. New pedestrian and cycling connections in local streets surrounding the station and along the eastern side of Gardiners Creek would improve active transport.

A cyclist crossing on Burwood Highway would allow for cyclists to connect to the Gardiners Creek Trail, a strategic cycling corridor, more directly than the current 100 metres plus diversion to the Elgar Road traffic signals.

The street network plan shows the cycle crossing will align with the shared path along the east side of Gardiners Creek, where it intersects with the existing shared path along the north side of Burwood Highway. The shared path to the east of this point will be deviated to the north, running off the creek path, to accommodate the widening of Burwood Highway to include a tram stop.

(ii) Evidence and submissions

The Proponent acknowledged there is a grade problem with the Gardiners Creek shared path on the north side of Burwood Highway as it slopes down from Burwood Highway, but submitted this is outside the scope of the Project to address. It noted substantial works may extend beyond the Project boundary to improve upon this grade issue, where this was not assessed as part of the EES.

Whitehorse submitted the Gardiners Creek Trail on the north side of Burwood Highway should be upgraded to meet current design standards within the Project boundary and '*the provision of upgraded links supports and is consistent with the evaluation objective as it would promote connectivity to the station, and support multimodal transport connections*' [220]. It noted at Box Hill, and at other stations, cycle links are being provided beyond the specific environs of the station locations. It did not expect the provision of an upgraded cycle link in this location would alter the environmental assessment for Burwood.

(iii) Discussion

The Project is seeking to achieve a significant mode shift to sustainable travel modes. The absence of commuter car parking and significant cycle parking are indicators of its aim to encourage cycling as a primary mode of private transport to the station. This will require paths that meet an appropriate design standard for convenient, safe and efficient access.

The Project includes a signalised crossing on Burwood Highway to include cyclist facilities to enable a direct connection between the Gardiners Creek paths on both sides of Burwood Highway to help remove a major barrier to cycling to the station. The widening of Burwood Highway will necessitate modification to the Gardiners Creek Trail, to ensure the junctions between the trail and the shared path along Burwood Highway on both sides of the creek can accommodate the expected cyclist and pedestrian demands. The trail will need to be re-graded, as it slopes down northward from Burwood Highway, to provide a level landing zone at the junction and to meet disabled access requirements.

This upgrade is necessary to help meet the transport objective and the upgrade is expected to be within the current Project boundary, which extends approximately 40 metres north of Burwood Highway.

(iv) Findings

The IAC finds:

- 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.

[220] D471, para 366

15.9 Box Hill

The key issues to be resolved are:

- bus interchange
- location of PuDo parking
- cycle path connections to strategic cycling corridors.

15.9.1 Bus interchange

(i) What did the EES say?

The EES noted no changes to the Box Hill Bus Interchange would be required for the Project, however, it noted the SRL station at Box Hill *'would also improve interchange with the existing public transport services (rail, bus, tram)'* [221].

There are 17 bus routes operating in the vicinity of the station. The walk time between the SRL station and bus interchange will be 4:25 minutes.

The M&P assessment set a minimum target level of service for the bus interchange in the 'No Project' scenario of 'B' and for the 'Project' scenario of 'A', but in both cases gave it a level of service rating of 'C' [222].

A pedestrian model was prepared for Box Hill but this did not extend into Box Hill Central shopping centre from which the bus interchange is accessed via a single file escalator and lift.

The EES did not directly report on changes in bus patronage as a result of the Project, with some data reported from the VISUM transport model as combined bus and tram data and other data reported as a percentage mode split.

(ii) Evidence and submissions

The Proponent submitted changes or relocation of the Box Hill Bus Interchange above the Box Hill Central shopping centre were out of scope of the Project and the interchange time was acceptable.

DoT submitted planning for the bus interchange should be subject to a separate process, noting it will be a complex endeavour and require input from several parties, including the shopping centre owner. It noted '*While future planning for the Bus Interchange would not be precluded by the Project in any way, it cannot properly be resolved as part of this process nor does it need to be*' [223]. It cautioned to be wary of seeking absolute perfection of a project in retrofitting an orbital rail in a metropolitan environment.

Whitehorse submitted:

> Council has long advocated for the improvement of the bus interchange, including its relocation.
>
> The importance of rail and bus connectivity at Box Hill warrants proper consideration of the existing bus interchange within the Project. It is a poor outcome to ignore the difficulties and issues of amenity, connectivity and wayfinding while significantly increasing the demands on the interchange.

[221] TA R.2 chap 8.2.6.
[222] TA R.2 Fig 7-5 and 7-6
[223] D759, para 29

> To fulfil the evaluation objective of improving transport connectivity and multimodal connections, the Project should as a minimum address the amenity and other issues that currently exist with the interchange. It should investigate measures to improve the proposed travel time between the SRL station and the bus interchange above the poor 4.5 minutes presently projected. It should demonstrate that the design of the SRL station can accommodate a relocated bus interchange. To fully deliver on the evaluation objective, however, it should go further and incorporate redevelopment of the bus interchange on a relocated site [224].

Mr Johnson gave evidence the interchange between bus and rail is flawed with extensive vertical travel, poor wayfinding and interchange time.

A number of submitters called for the relocation of the bus interchange. S97 submitted the existing single file escalator up to the bus interchange was wholly inadequate.

(iii) Discussion

The M&P assessment highlighted concern with the bus interchange, giving it a level of service C, in the post operation condition, well below the stated target of A. The EES did not provide advice on the number of passengers expected to interchange with the bus services, nor the ability of Box Hill Central and its single file escalators to cater for any increase in demand.

The limited data in the EES indicates there will be growth in bus patronage with or without the Project and it is clear from submissions, the Box Hill Bus Interchange is a candidate for relocation or upgrade. The IAC is not sure why this facility was essentially ignored by the Proponent when new or additional bus interchanges have been included as part of the Project at Cheltenham, Monash and Burwood.

At the very least, a pedestrian study of the access up to the bus interchange deck should have been included, to determine the impacts of the Project on this facility.

The Project is seeking to make significant changes to the public realm and road network without a plan for how to address the existing bus interchange issues. The bus interchange is a very large piece of infrastructure and if the solution to address existing or future issues is to relocate it, this will require space to enable the relocation, to ensure it retains a strong interchange function with the rail services. This needs to be determined before approving the UDLP for this station to ensure additional constraints are not added that lockout the best solution.

(iv) Findings

The IAC finds:

- 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.
- The Box Hill Bus Interchange may require relocation to best service the future needs of the Activity Centre and this should be determined prior to the approval of the Box Hill UDLP.

[224] D471, p98

15.9.2 Location of PuDo parking

(i) What did the EES say?

There will be a loss of 147 public parking spaces, mainly on Whitehorse Road. General PuDo parking will be located on Elland Street, with accessible parking on Whitehorse Road.

(ii) Evidence and submissions

The Proponent submitted:

> The SRL East reference design includes seven PuDo spaces on Elland Avenue and three CPV space on Whitehorse Road.
>
> To address future demand, including when SRL North comes into operation, an area of land is earmarked for an additional seven PuDo spaces through reconfiguring parking on Elland Avenue and Irving Avenue [225].

Elland Avenue will be a cul-de-sac requiring vehicles to enter and exit from Station Street [226].

(iii) Discussion

Parking on both sides of Elland Avenue limits traffic to a single lane. No traffic capacity assessment was provided to determine whether the street can cater for the future traffic volume in a single lane, nor the impact on the intersection of Elland Avenue and Station Street.

There has been no consideration of the demand for parking and loading within this local street to service the abutting residential and commercial users.

As discussed in Chapter 15.2, further work is required to better quantify parking demands, where this may result in a change in space requirements. Opportunity to provide PuDo parking within the sites identified for future precinct planning should be explored to reduce impacts on traffic and the community.

(iv) Findings

The IAC finds:

- A traffic impact assessment should be undertaken of Elland Avenue and its intersection with Station Street, to ensure adequate capacity is available to accommodate the expected level of PuDo parking, this can be considered under EPR T6.
- Consideration should be given to locating PuDo parking within the sites identified for future precinct planning.

15.9.3 Cycle path connections to strategic cycling corridors

(i) What did the EES say?

Target cyclist mode share for the Project is 15 per cent, with 500 bicycle spaces provided at Box Hill on opening and with scope to increase this to 1000 once SRL North is commissioned. It is anticipated 35 per cent of cyclists will be generated from the south of the Metro rail line.

A new bi-directional cycle path will be provided along the reconfigured section of Whitehorse Road from Nelson Street to Linsley Street.

[225] D645, p3
[226] D375, TN22 Attachment C p6

(ii) Evidence and submissions

The Proponent advised it supported providing a cycling link along Linsley Street and across Bank Street, from the eastern end of the proposed Whitehorse bicycle facility to connect to the existing Box Hill-Ringwood strategic cycling corridor. However, it considered such connection falls outside the Project boundary and should be considered as part of the precinct planning process.

In relation to a connection from the western end of the Whitehorse Road to the planned Box Hill to Hawthorn C2 strategic cycling corridor facility along Hopetoun Parade to the south of the Metro rail line, the Proponent noted:

- delivery of this link is complex and may require land acquisition, utility relocation and rail disruption
- the link has already been designated as forming part of the broader corridor which demonstrates the need is not attributable to the Project.

Mr Kiriakidis supported the eastern connection being delivered by the Project, but considered the western connection should be considered as part of future precinct planning investigations.

Mr Johnson opined the proposed cycle path along Whitehorse Road should be connected at both ends to the strategic cycling corridors, to ensure the Project achieves its aspirational target of 15 per cent mode share to cycling. He noted this mode share target was used to justify the absence of commuter car parking.

(iii) Discussion

Clause 18.01-1S of the PPF seeks to protect existing and facilitate new walking and cycling access to public transport. The Box Hill to Ringwood strategic cycling corridor is designated C1, with the Box Hill to Hawthorn corridor designated C2.

Given the aspirational mode shift to cycling and 35 per cent catchment south of the Metro line with further catchments to the east and west served by these corridors, the IAC considers it is the responsibility of the Project to deliver complete links to the strategic cycling corridors providing access to the station.

The eastern connection along Linsley Street should not be a difficult or expensive connection, noting there is already an at-grade pedestrian crossing on the Metro line.

The western crossing is more challenging to deliver. However, it is important the Project determines a way to deliver safe and efficient access for cyclists from the south and west into the SRL station in order to meet its transport objective. This could be delivered as an outcome of the UDS.

(iv) Findings

The IAC finds:

- 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.

15.10 Recommendations

The IAC recommends:

<u>Environmental Management Framework</u>

Include the following changes:

- **Revised EPR B5 (2) to include a requirement to minimise traffic impact on Kingsway between Coleman Parade and Bogong Avenue.**
- **Revised EPR T3 to include a requirement for construction management plans to minimise the extent of time required for the temporary closure of roads and paths.**
- **Revised EPR T3 (3) (e) to include a requirement for the Transport Management Liaison Group to consider parking matters.**
- **Revised EPR T3 to include new requirements to:**
  - **Widen Kingston Road to a four-lane road along the full frontage of the site, prior to using access gates on Kingston Road.**
  - **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.**
- **Revised EPR T6 (5) to expand the traffic analysis to include sensitivity testing with potential precinct development scenarios.**
- **Revised EPR T6 to include a new requirement in relation to pick-up and drop-off parking spaces, to require:**
  - **a parking demand study to validate assumptions around the requirements for pick-up and drop-off parking**
  - **minimisation of the walking distance from the station entries to pick-up and drop-off parking.**
- **Revised ERPs T6, T7 and T8 to require the design responses to be in accordance with the SRL East Urban Design Strategy.**
- **Revised EPR T8 to include requirements to assess pedestrian and cycle flows across and along Normanby Road and to the Box Hill Bus Interchange.**

These changes are included at Appendix G.

Surface and Tunnel Plans

Include the following changes:

- **omit locational references for pick-up/drop-off parking and bus interchanges**
- **show a wider northern entry to the pedestrian and cycle bridge over Bay Road, at the Cheltenham Suburban Rail Loop Station.**
- **include a primary pedestrian route and a cycle route across Kingston Road between Nicholas Grove and Pietro Road, at the Stabling Facility**
- **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**
- **locate the new bus interchange at closer to the station entry, at the Monash Suburban Rail Loop Station**
- **remove the permanent closure of Coleman Parade, at the Glen Waverley Suburban Rail Loop Station**
- **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.**

Urban Design Strategy

Include the following changes:

- **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 …'.**
- **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.***
- **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.***
- **Modify Figure 16: Monash place-specific requirements to show the location of the bus interchange closer to the station entry.**

15.11 Overall conclusions on transport and traffic management

Subject to the recommendations of the IAC, there are no transport or traffic management impacts that preclude the Project being approved or the evaluation objective being achieved.

PART C: PROJECT IMPLEMENTATION AND ASSESSMENT

16 Project implementation

16.1 Planning and Environment Act 1987

16.1.1 Draft Planning Scheme Amendment GC197

The draft PSA (EES Attachment C) proposes to apply a new SCO14 and SCO15 within the Bayside, Kingston, Monash and Whitehorse Planning Schemes.

SCO14 applies the Suburban Rail Loop East Incorporated Document within which the Minister for Planning would be the responsible authority.

The SCO14 ID requires the approval of:

- Environmental Management Framework
- Surface and Tunnel Plans
- Urban Design Strategy.

The IAC has recommended the SCO14 ID require the preparation of the POSF and reference the POSEP.

SCO15 applies the Suburban Rail Loop East Infrastructure Protection Incorporated Document, within which the Secretary to DoT would the determining referral authority for permit applications.

The SCO15 ID includes Project Infrastructure Protection Area maps that differentiate between two types of areas that are subject to differing provisions.

The draft PSA GC197 includes consequential changes to Clauses 66.04, 72.01 and 72.03.

16.1.2 SCO14 and associated provisions

(i) SCO14 ID

The SCO14 ID is discussed in chapters 8, 11, 12 and 15. Chapter 12.2.3 concluded that the use of the SCO and an ID was an appropriate use of the VPP to approve the Project.

The IAC has recommended various changes to the Proponent's final version of the SCO14 ID (D791), including:

- A requirement that proposed amendments to the Surface and Tunnel Plans be provided to the relevant Council/s for review and comment before approval by the Minister for Planning.
- Kingston, Monash and Whitehorse membership of the UDAP for land within their municipalities.
- A requirement that the Minister approve the POSF.
- A description of what the POSF must contain.
- Kingston, Monash and Whitehorse membership of the POSEP for land within their municipalities.

The recommended SCO14 ID is included at Appendix F.

(ii) Environmental Management Framework

The EMF is discussed in Chapters 5 to 15 in which the IAC has recommended various revisions and additions to the Proponent's final version (D796), included at Appendix G. The IAC has concluded the recommended EMF, in conjunction with other mitigation measures, can acceptably manage the Project's environmental impacts.

The key changes relate to:

- air quality
- business
- contaminated land
- land use planning
- noise and vibration
- social and community
- traffic and transport.

The IAC notes the EMF will require various consequential revisions to reflect its change from a 'draft' document to an 'approved' document.

(iii) Surface and Tunnel Plans

The Surface and Tunnel Plans are discussed in Chapters 5, 7, 11, 12 and 15.

The IAC has recommended various changes to the Proponent's final version of the Surface and Tunnel Plans (D761, 762, 763 and 764), including:

- a change to the description of the 'sites subject to future precinct planning process' to provide more flexibility in determining the future land use mix
- changes to address various traffic and transport issues.

(iv) Urban Design Strategy

The UDS is discussed in Chapters 5, 7, 8, 11, 12, 13, 14 and 15. Chapter 12.2.5 concluded the UDS is a comprehensive, well-considered document that will appropriately guide the Project's detailed planning and design.

The IAC has recommended various changes to the Proponent's final version of the UDS (D768 and 769), including:

- consideration of green roof structures at the Stabling Facility where appropriate and feasible
- improvement to the Gardiners Creek shared trail on the north side of Burwood Highway
- delivery of a connection to the Box Hill to Hawthorn C2 strategic cycling corridor and to the Box Hill to Ringwood C1 strategic cycling corridor
- revisions that reflect the IAC's recommended changes to the Surface and Tunnel Plans.

(v) Public Open Space Framework

The POSF is discussed in Chapters 11, 12, and 13. Chapter 11.2.2 concluded that implementing the POSF and role of the POSEP will be key factors in mitigating open space impacts.

The IAC has recommended various changes to the Proponent's final version of the POSF (D786), including:

- reference to the revised EPR LUP4 recommended by the IAC

- Kingston, Monash and Whitehorse membership of the POSEP for land within their municipalities
- replacement open space for the Clayton Remembrance Gardens
- a buffer between the Uniting AgeWell facility and construction area in the Box Hill Gardens
- identifying a replacement site for the land lost to the Stabling Facility and implementing a process for its acquisition.

The recommended POSF is included at Appendix H.

(vi) SCO15 and associated provisions

The SCO15 ID is discussed in Chapters 12 and 14. Chapter 12.2.4 concluded the use of the SCO and an ID is an appropriate use of the VPP to protect the Project's infrastructure.

The IAC supports the Proponent's final version of the SCO15 ID (D790).

16.2 Other approvals

Clause 24 of the Terms of Reference notes the Project may require other statutory approvals and/or consents as outlined in the EES, including:

(i) Environment Protection and Biodiversity Conservation Act 1999

The EES noted the Proponent is responsible for seeking a decision under the EPBC Act on whether the Project is a controlled action and, if so, an approval for the Project (if required).

The IAC is not aware of any matters that would require or preclude approval under the EPBC Act. The IAC notes this is a matter for the Commonwealth to determine.

(ii) Aboriginal Heritage Act 2006

The *Aboriginal Heritage Act 2006* requires the approval of CHMPs before the Project can proceed. Chapter 5 discusses the two CHMPs that are required for the Project, including their status and further actions that are necessary to finalise them.

On the material presented to it, the IAC is satisfied that there are no impediments to the CHMPs being approved.

(iii) Environment Protection Act 2017

The implications of the new EP Act and the GED are discussed in Chapter 4. The IAC is satisfied that the recommended mitigation measures, including the EMF, are consistent with and will implement the EP Act's requirements and guidance.

(iv) Flora and Fauna Guarantee Act 1988

The *Flora and Fauna Guarantee Act 1988* lists threatened flora and fauna species and communities, and includes requirements for removing listed species.

A range of listed species are present in the Project area and their removal from public land would require approval under the Flora and Fauna Guarantee Act. The IAC is satisfied there are no impediments to approval under this Act, subject to compliance with relevant mitigation measures.

(v) Water Act 1989

The *Water Act 1989* regulates the impacts on and use of surface water and groundwater. The Project would likely require the following approvals under the Act:

- a licence to construct, alter, operate or decommission works on, over or under waterways impacted by the project works (from Melbourne Water)
- a licence to construct a groundwater bore (from Southern Rural Water)
- a licence to extract groundwater for construction purposes (from Southern Rural Water).

The IAC discusses Surface Water and Groundwater in Chapter 14. The IAC is satisfied there are no impediments to approval under this Act, subject to implementing the recommended mitigation measures.

(vi) Road Management Act 2004

The *Road Management Act 2004* establishes the statutory framework for the DoT and local Government to manage the Victorian road network. The Project may require consent under this Act for works on, in or under any road.

The IAC discusses transport and traffic management in Chapter 15. The IAC is satisfied there are no impediments to approval under the Act, subject to implementing the recommended mitigation measures.

16.3 Recommendation

The IAC recommends:

Draft Planning Scheme Amendment GC197

Adopt draft Planning Scheme Amendment GC197 and associated documents subject to the changes recommended by the Inquiry and Advisory Committee.

17 Integrated assessment

This chapter on integrated assessment brings together the IAC's considerations in relation to:

- Net community benefit
- EES draft evaluation objectives
- response to Terms of Reference
- response to draft Evaluation Objectives.

17.1 Net Community Benefit

A Project such as this invariably will have competing policy objectives and analysis of these assists to determine whether the Project will result in acceptable outcomes that achieve a net community benefit.

Clause 71.02-3 of the Victoria Planning Provisions 'Integrated decision making' provides that:

> Victorians have various needs and expectations such as land for settlement, protection of the environment, economic wellbeing, various social needs, proper management of resources and infrastructure. Planning aims to meet these needs and expectations by addressing aspects of economic, environmental and social wellbeing affected by land use and development.
>
> The Planning Policy Framework operates together with the remainder of the scheme to deliver integrated decision making. Planning and responsible authorities should endeavour to integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. (IAC underlining)

In considering net community benefit, the 'community' which might be positively or negatively impacted must be acknowledged. It is well recognised that planning is not about maintaining the status quo but, in accordance with section 4(1)g of the Planning and Environment Act, planning is to balance the present and future interests of all Victorians. All Victorians includes not just an immediate local community.

Clause 71.02-3 further notes the importance of sustainable development and effective and efficient use of resources.

At the beginning of the Hearing, the IAC asked the Proponent to articulate the Project's net benefits and disbenefits [227]. The Proponent's response focussed on the benefits of the Project, and relied on the EES Strategic Justification Report and Mr Barlow's assessment [228].

The EES concluded:

> As expected for an infrastructure project of this scale, adverse impacts and disbenefits are anticipated. The Project would result in changing land uses, temporary occupation, permanent land acquisition and some loss of amenity, vegetation and open space. The greatest social, economic and environmental disbenefits would occur during the construction phase of the Project and would predominantly impact local communities through land acquisition and displacement of residences, businesses, services and open space; localised construction activities which impact on surrounding communities and the land use changes which alter existing neighbourhood character. However, these disbenefits are considered acceptable in return for the longer term benefits of an enhanced public transport network that provides for local communities, Melbourne's middle ring and for Victoria. The Project would facilitate a major positive benefit to the metropolitan structure of Melbourne and

[227] RFI 66
[228] TN18

> accommodate increased development capacity to the residential and working populations in the precincts it serves [229].

The IAC agrees the Project's benefits are potentially significant and notes this assessment was not fundamentally challenged in submissions or evidence. However, there will be clear disbenefits, particularly during construction in all areas and particularly in relation to the Stabling Facility site.

The IAC agrees with the EES and Mr Barlow that the extensive use of tunnelling is a significant mitigation measure that will limit overall construction and operational impacts. The key environmental effects and disbenefits relate to the above-ground infrastructure and will predominantly be experienced during construction. The Project's benefits will only be realised when it is operational, particularly when the SRL stations are integrated within their respective locations and activity centres.

The key operational disbenefits relate to the Stabling Facility and the amenity and other impacts it will have on the local community. An associated disbenefit is the loss of the site from the Chain of Parks and the distress about this within the local community.

The IAC has systematically reviewed and assessed each of the Project's key environmental effects and is satisfied they can be acceptably mitigated, subject to applying more sophisticated, prescriptive and targeted mitigation measures. There will still be disbenefits, but the recommended mitigation measures will enable them to be reduced and more appropriately managed.

The disbenefits associated with the Stabling Facility are more pronounced and will extend over its construction and operation, however the recommended changes to the mitigation measures will provide a better framework for managing the environmental effects. The loss of the site from the Chain of Parks is a significant disbenefit and the IAC is strongly of the view that this can only be effectively mitigated if a replacement site is identified, and an acquisition process established.

Having regard to the Project's broader metropolitan and State benefits, the IAC is satisfied the Project will result in a net community benefit, subject to applying its recommended mitigation measures.

17.2 Response to Terms of Reference

This section provides the IAC's responses to its Terms of Reference.

(i) Clause 43

Clause 43 identifies the matters the IAC's findings and recommendations should respond to in its report. The IAC's responses are included in Table 12.

Table 12 Summary of IAC response to Terms of Reference Clause 43

Terms of Reference Clause 43	IAC response and findings	Relevant report reference
43a. the environmental effects of the Project	The IAC finds the environmental effects of the Project are generally acceptable, subject to applying the recommended	Chapters 5- 15

[229] EES Strategic Justification Report, p41

	changes to mitigation measures and further actions.	
43b. the significance and acceptability of the potential environmental effects	Most environmental impacts will be relatively benign and can be acceptably managed through standard mitigation measures. Some environmental effects will be more significant and require more sophisticated, prescriptive and targeted mitigation measures to ensure environmental effects are acceptable.	Chapters 5- 15
43c. the appropriateness and effectiveness of proposed environmental mitigation or management measures	The mitigation and management measures in the EES are generally appropriate and will be effective for many environmental effects. However, some environmental effects are significant and require more sophisticated, prescriptive and targeted mitigation measures, including changes to how the Project is constructed and will operate. The environmental effects of particular concern and that require more appropriate and effective mitigation, include noise, business and residential acquisition and disruption, site contamination, the loss of existing and planned open space, social impacts and changes to traffic and parking infrastructure.	Chapters 5-15 Noise is discussed in Chapter 6. Business and residential impacts are discussed in Chapter 8. Contaminated land is discussed in Chapter 9. Open space is discussed in Chapter 11. Social impacts are discussed in Chapter 13. Traffic and parking are discussed in Chapter 15.
43d. any potential design alternatives or additional environmental mitigation and management measures that it considers are feasible and effective to avoid, mitigate or manage adverse effects or offer beneficial outcomes	The IAC is satisfied the key project elements, including the tunnel alignment and sites for the stations, Stabling Facility and Emergency Support Facility are acceptable. Future, more detailed design will provide the mechanism to further refine design issues. The IAC has recommended various changes and additions to the mitigation measures that will provide more flexibility for future planning and design and increase Council involvement in those processes. A key recommendation is that the POSF be approved by the Minister for Planning. The POSF should include an explicit commitment to identifying replacement land for the loss of	Chapters 5-15 The Public Open Space Framework is discussed in Chapter 11. The Stabling Facility site is discussed in Chapters 11 and 12.

	Stabling Facility site from the Chain of Parks and establish a process for its acquisition.	
43e. conditions on any approval necessary to avoid, mitigate or manage the environmental effects	The IAC is satisfied environmental effects can be acceptably avoided, mitigated or managed, subject to its recommendations being adopted. Some of these recommendations are fundamental to the IACs assessment of the more significant issues highlighted earlier.	Chapters 5-15

(ii) Clause 44

Clause 44 requires the IAC provide a report on the draft PSA, including any recommended modifications.

The IAC's responses are included in Chapters 11 and 16.

(iii) Clause 45

Clause 45 specifies the matters the IAC's report should include. The IAC's responses are included in Tables 13 and 14.

Table 13 IAC's responses to Clause 45

Terms of Reference Clause 45	Terms of reference requirement	Relevant report reference
45a	Information and analysis in support of the IAC's findings, recommendations and advice.	Parts B and C
45b	A list of all recommendations, including cross references to relevant discussions in the report.	Table 14
45c	A description of the public Hearing conducted by the IAC, and a list of those persons consulted with or heard by the IAC.	Chapter 1 and Appendices B and C
45d	A list of all submitters in response to the exhibited EES and draft PSA.	Appendix B
45e	A list of the documents tabled during the proceedings.	Appendix D

Table 14 Cross references between recommendations and discussions

Recommendation	Relevant report reference
Environmental Management Framework	
Revised EPR HH9 (Develop and implement external conservation works)	Chapter 5
Revised EPR AQ1 (Develop and implement an Environmental Air Pollution and Dust Management Plan)	Chapter 6
Revised EPR AQ2 (Monitor air quality prior to and during construction)	Chapter 6

Revised EPR NV2 (Minimise out of hours construction works and their impacts)	Chapter 6
Revised EPR NV3 (Develop and implement a Construction Noise and Vibration Management Plan)	Chapter 6
Revised EPR NV12 (Minimise airborne rail noise levels for operation)	Chapter 6
Revised EPR NV13 (Minimise ground-borne noise impacts for operation)	Chapter 6
Revised EPR NV14 (Minimise vibration impacts for operation)	Chapter 6
New EPR NV17 (Assess cumulative noise levels from the Stabling Facility)	Chapter 6
New EPR NV18 (Non-compliance of operational ground borne noise and vibration)	Chapter 6
Revised EPR EMF4 (Develop and implement a Complaints Management System)	Chapter 6
Revised EPR EC1 (Minimise vegetation and habitat removal and disturbance)	Chapter 7
Revised EPR EC4 (Implement fauna management measures to minimise impacts to fauna)	Chapter 7
New EPR AR1 (Develop and Implement a Tree Inventory Database)	Chapter 7
Revised EPR AR1 (renumbered as AR2) (Develop and implement Tree Removal Plans)	Chapter 7
Revised EPR AR3 (renumbered as AR4) (Develop and implement a Tree Canopy Replacement Plan)	Chapter 7
Revised EPR B2 Provide support to businesses that are relocating due to acquisition	Chapter 8
Revised EPR B3 Prepare and implement a Business Disruption Mitigation Plan	Chapter 8
Revised EPR B4 Undertake proactive business engagement	Chapter 8
New EPR B8 (Develop a voluntary business and commercial acquisition plan)	Chapter 8
New EPR B9 (Develop an Employee Assistance Strategy)	Chapter 8
New EPR C7 (Implement Suitable Air Cover and Treatment Controls – SRL Cheltenham station)	Chapter 9
Revised EPR C3 (Develop and implement a Spoil Management Plan)	Chapter 9

Revised EPR C4 (Develop and implement a Hazardous Ground Gases Management Plan)	Chapter 9
New EPR EC8 (Human Health Risk Assessment – Stabling Facility)	Chapter 9
Revised EPR LUP4 (Develop and implement a Public Open Space Framework)	Chapter 11
Revised EPR SC6 (Minimise Disruption and Impacts on residents of Uniting AgeWell at Box Hill)	Chapters 11 and 13
New EPR LUP5. (Prepare a guide for planning permit applications under the SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document)	Chapter 12
Revised EPR SC2 (Develop and implement Communications and Stakeholder Engagement Plans to manage interactions with the community)	Chapter 13
Revised EPR SC4 (Minimise disruption to public and private events)	Chapter 13
New EPR SC7 (Develop a voluntary residential acquisition plan)	Chapter 13
Revised EPR SW1 (Develop and implement a Surface Water Management Plan during construction)	Chapter 14
Revised EPR SW5 (Design and operate SRL East to manage stormwater runoff)	Chapter 14
Revised EPR GW5 (Develop, implement and maintain a Groundwater Monitoring Plan)	Chapter 14
Revised EPR B5 (Provide effective replacement of car parking spaces in Glen Waverley)	Chapter 15
Revised EPR T3 (Manage road transport impacts during construction)	Chapter 15
Revised EPR T6 (Design road transport to maintain safety in operation)	Chapter 15
Revised ERP T7 (Manage public transport outcomes in operation)	Chapter 15
Revised ERP T8 (Design for safe and connected active transport in operation)	Chapter 15
Draft Planning Scheme Amendment GC197	
Adopt draft Planning Scheme Amendment GC187, subject to the following:	Chapters 5 - 16
SCO14 Suburban Rail Loop East Incorporated Document	
Adopt the Specific Controls Overlay 14 Suburban Rail Loop East Incorporated Document included at Appendix F, subject to the following:	Chapters 8, 11, 12 and 15
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.	Chapter 8

Include any consequential changes to reflect the revised tunnel alignment under Monash University.	Chapter 12
Tunnel and Surface Plans	
Adopt the Surface and Tunnel Plans as shown in D761, D762, D763 and D764, subject to the following:	Chapter 12
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 pick-up/drop-off spaces'.	Chapter 12
Omit locational references for pick-up/drop-off parking and bus interchanges.	Chapter 15
Show a wider northern entry to the pedestrian and cycle bridge over Bay Road, at the Cheltenham SRL Station.	Chapter 15
Include a primary pedestrian route and a cycle route across Kingston Road between Nicholas Grove and Pietro Road, at the Stabling Facility.	Chapter 15
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 SRL Station.	Chapter 15
Locate the new bus interchange at closer to the station entry, at the Monash SRL Station.	Chapter 15
Remove the permanent closure of Coleman Parade, at the Glen Waverley SRL Station.	Chapter 15
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 SRL Station.	Chapter 15
Urban Design Strategy	
Adopt the Urban Design Strategy as shown on D768 and D769, subject to the following:	Chapter 12
Include the following additional consideration under outcome SF4, 4a: *i) Include green roof structures where appropriate and feasible.*	Chapter 12
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 DoT, a pedestrian and cycle crossing …'.	Chapter 15
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.*	Chapter 15
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.*	Chapter 15
Modify Figure 16: Monash place-specific requirements to show the location of the bus interchange closer to the station entry.	Chapter 15

Update the 'place-specific requirements diagrams' to reflect the IAC's relevant recommendations, including recommended changes to the Surface and Tunnel Plans.	Chapter 12
Public Open Space Framework	
Adopt the Public Open Space Framework at Appendix H, subject to:	Chapter 11
Review the accuracy of the open space maps and open space area calculations.	Chapter 11
Include a reference to the Whitehorse Road Linear Reserve in the summary table.	Chapter 11
Business and Residential Support Guidelines	
Adopt the Business and Residential Support Guidelines included at Appendix I, subject to the following:	Chapter 8
Review and update the Business Support Guidelines to: - *clarify support measures that will be funded by SRLA 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.*	Chapter 8
SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document	
Adopt the Specific Controls Overlay 15 East Infrastructure Protection Incorporated Document as shown in D790, subject to the following:	Chapter 12
Include any consequential changes to reflect the revised tunnel alignment under Monash University.	Chapter 12

17.2.2 Response to evaluation objectives

Clause 6b of the Terms of Reference requires the IAC to have regard to the evaluation objectives in the Scoping Requirements Report. Table 15 summarises the IAC's findings about the Project's consistency with the objectives and indicates where the relevant discussion can be found in its Report.

Table 15 Response to EES evaluation objectives

Evaluation objective	Response
Aboriginal cultural and historical heritage: *Avoid or minimise adverse effects on Aboriginal and historical cultural heritage values and maximise opportunities to appropriately complement and preserve these values.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 5.
Amenity and environmental quality: *Avoid or minimise air quality, noise and vibration effects on the amenity and health of nearby residents and local communities and protect sensitive infrastructure.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 6
Biodiversity and arboriculture:	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations.

Avoid or minimise adverse effects on vegetation (planted, remnant and regenerated), tree canopy and native terrestrial and aquatic flora and fauna.	Refer to Chapter 7.
Business and retail: *Avoid or minimise adverse effects on business functionality, access to services and facilities provided by businesses and on the retail economic environment.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 8.
Contaminated land and spoil management: *Avoid adverse environmental effects resulting from the disturbance of contaminated or acid-forming material and minimise spoil generation, maximise reuse and manage spoil in accordance with best practice principles.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 9.
Greenhouse gas emissions and resource efficiency: *Avoid and minimise greenhouse gas emissions and capitalise on opportunities to reduce waste and use resources efficiently.*	The Project is consistent with the evaluation objective. Refer to Chapter 10.
Landscape, visual, recreational values and built form: *Avoid or minimise adverse effects on landscape, visual amenity, recreational and public realm values and capitalise on opportunities to enhance these values.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 11.
Land use planning and infrastructure: *Achieve integration with adjoining land uses, minimise displacement of land use activities and key infrastructure and resolve inconsistencies with strategic land use plans.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 12.
Social, community and public health: *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.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 13.
Surface water, groundwater and land stability: *Avoid or minimise adverse effects on the interconnected surface water, groundwater and floodplain environments and on land stability.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 14.
Transport and traffic management: *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 network.*	The Project is consistent with the evaluation objective, subject to applying the IAC's recommendations. Refer to Chapter 15.