Warburton Mountain Bike Destination

Minister's Assessment under Environment Effects Act 1978

Minister for Planning
October 2022

VICTORIA State Government | Environment, Land, Water and Planning

Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.

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Glossary

CEMP	Construction environment management plan
CHMP	Cultural heritage management plan
CFA	Country Fire Authority
CTR	Cool Temperate Rainforest
CTMF	Cool Temperate Mixed Forest
DELWP	Department of Environment, Land, Water and Planning
EE Act	*Environment Effects Act 1978*
EES	Environment effects statement
EMF	Environmental management framework
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EVC	Ecological vegetation class
FFG Act	*Flora and Fauna Guarantee Act 1988*
GDE	Groundwater dependent ecosystems
GED	General environmental duty
Ha	Hectares
HO	Heritage Overlay
IAC	Inquiry and advisory committee
MNES	Matters of national environmental significance
OEMP	Operations environment management plan
PSA	Planning scheme amendment
P&E Act	*Planning and Environment Act 1987*
RSP	Regional strategy plan
SCO	Specific controls overlay
VHI	Victorian Heritage Inventory

Executive summary

On 21 May 2020, following receipt of a referral from Yarra Ranges Council under the *Environment Effects Act 1978*, the former Minister for Planning decided that an environment effects statement (EES) was required for the Warburton Mountain Bike Destination project ('the project').

The Yarra Ranges Council prepared an EES which the Minister authorised for public exhibition and comment. The EES was exhibited for public comment from 26 November 2021 to 25 January 2022.

On 8 December 2021, the Minister for Planning appointed an Inquiry and Advisory Committee (IAC) to consider the project's environment effects statement (EES) and a draft planning scheme amendment. Planning Panels Victoria received 2707 submissions and the IAC held a public hearing from 15 March 2022 to 7 April 2022. The IAC provided its report on 20 June 2022. The IAC's report, EES documentation and other material including submissions and documents tabled at the hearing have informed the preparation of my assessment of the environmental effects of the project.

It is my assessment that the majority of the trails and other works proposed for project can proceed with acceptable environmental effects, subject to project modifications and an environmental management regime, consistent with the findings and recommendations of this assessment. However, I support the conclusion of the IAC that Trails 1, 45, 46 and 47 present unacceptable risk of significant effects, particularly on Cool Temperate Rainforest and Cool Temperate Mixed Forest and the Mount Donna Buang Wingless Stonefly, which are of high conservation value.

Consistent with the IAC, I therefore conclude that Trails 1, 45, 46 and 47 should not be implemented as part of the project. As a result, the project's potential impact on environmental values in the Yarra Ranges National Park should be substantially reduced, including a reduced risk of impact on the critically endangered Leadbeater's Possum. Any further consideration of the trails proposed within the national park needs to ensure impacts on significant stands of Cool Temperate Rainforest and Cool Temperate Mixed Forest, as well as the Mount Donna Buang Wingless Stonefly and Leadbeater's Possum are avoided – this needs to be demonstrated to the satisfaction of decision-makers, particularly for those decisions made under the *National Parks Act 1975*.

My assessment includes specific recommendations to inform the proponent and statutory decision-makers responsible for approval decisions under Victorian and Commonwealth law. These include recommendations regarding key measures to be included in final environmental management plans developed for the project. The recommendations will also need to be reflected appropriately in the final trail designs and development plans to be submitted before the project can proceed, should the project be approved. Decision-makers need to consider this assessment before deciding whether and how the project should proceed. As a matter of good practice, I also expect decision-makers to write to me to advise how my assessment was considered and applied.

The Victorian EES process served as the accredited assessment process for the purposes of examining the significant impacts of this 'controlled action' on matters of national environmental significance (MNES) under the *Environment Protection and Biodiversity and Conservation Act 1999* (EPBC Act). My assessment is to be issued to the Australian Government Minister for Environment and Water to inform the decision about whether and under what conditions to approve the project under the EPBC Act.

It is my assessment that residual impacts on EPBC Act listed species and communities are unlikely to be significant. Residual impacts on these species and communities can be acceptably managed through implementation of mitigation measures and as part of required approvals. I support amendments to mitigation measures as recommended by the IAC and further strengthened by my assessment to assist in avoiding and minimising impacts on MNES as detailed in Section 6.8 of my assessment.

1. Introduction

On 20 December 2019, Yarra Ranges Council referred the Warburton Mountain Bike Destination Project to the former Minister for Planning under the *Environment Effects Act 1978* (EE Act).

On 21 May 2020, the former Minister for Planning decided that an environment effects statement (EES) was required under the EE Act. The decision to require an EES included procedures and requirements for the EES, in accordance with section 8B(5) of the EE Act, specifying that the EES must investigate and report on effects on/of: biodiversity and ecological values; surface and groundwater hydrology, quality and aquatic ecology; Aboriginal and non-Aboriginal cultural heritage values; land uses; land stability and erosion; amenity; socio-economic aspects; and cumulative impacts.

1.1 Purpose of this document

This document constitutes my assessment of the environmental effects of the project under the Environment Effects Act. It represents the final step in the EES process and provides authoritative advice to decision-makers on the likely environmental effects of the project and their acceptability subject to recommendations on how those effects should be mitigated and addressed through relevant statutory decisions. My assessment is largely informed by the report of the IAC, together with the EES, submissions and documents tabled at the inquiry hearing.

My assessment will inform decisions required under Victorian law for the project to proceed, as well as a decision by the Australian Government Minister for Environment and Water on whether to approve the project under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Structure of the assessment

My assessment follows the general structure:

- Section 2 provides a brief description of the project and considerations of the IAC and my assessment;
- Section 3 outlines the EES process and statutory approvals required for the project;
- Section 4 provides my overarching findings in relation to key matters;
- Section 5 includes my examination and findings on the proposed environmental management and planning controls;
- Section 6 provides the detailed assessment of environmental effects of the project based on the applicable legislative and policy framework and provides a summary of key project impacts; and
- Section 7 provides my overall conclusions, including responses to the recommendations of the IAC.

2. Project description

Yarra Ranges Council proposes to construct a mountain biking destination centred around Warburton township, approximately 70 kilometres east of Melbourne, and is located on the Country of the Wurundjeri peoples of the Kulin Nation. The trail network is intended to consist of up to 61 trails, with a number of 'trail heads' which provide access to the trails.

The EES identified the project as comprising the following main components:

a) a mountain bike trail network with up to 177 km of trails which incorporates upgrades to some existing trails, construction of new trails, and use of existing vehicle roads/tracks;
b) two new significant bridges, including a shared use bridge crossing over the Yarra River, Warburton Highway and Dammans Road as well as a mountain bike only bridge over Old Warburton Road; and
c) new Visitor's Hub and main trail head at the Warburton Golf Course, as well as new trail heads at Mount Tugwell, Mount Donna Buang and Wesburn Park.

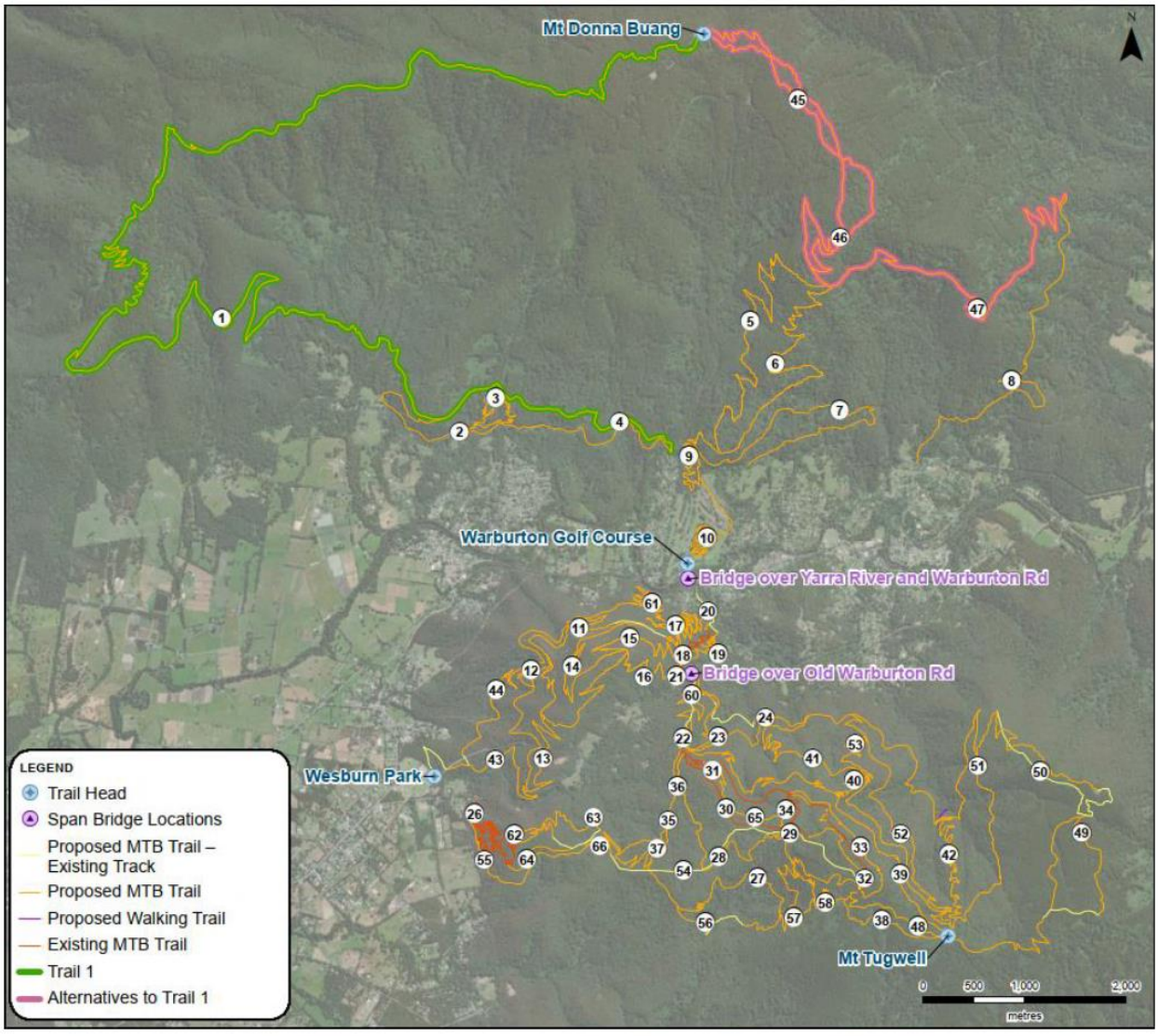

Figure 1. Project area and main features of the project (Sourced from EES Chapter 3)

The project proponent is Yarra Ranges Council. The council was responsible for preparing technical studies, consulting with the public and stakeholders, and preparing the EES and draft planning scheme amendment (PSA).

The area directly affected by the project comprises of the Yarra Ranges National Park, Woi Wurrung State Forest, Yarra State Forest, road reserves and freehold land including within the Warburton Golf Course. The proposed trails would intersect seven private landholdings and run within 100 metres of a further 29 private residences. The proposed trails occur on land with a range of existing recreational uses including bushwalking, trail running, hunting, horse riding, recreational motorcycle riding and four-wheel driving.

The project area for the proposal being assessed via the EES process and the main features of the project are shown in Figure 1. The project is described in further detail in Chapter 3 of the EES.

3. Statutory processes

To proceed with the project, Yarra Ranges Council require a variety of approvals under Victorian and Commonwealth law. My assessment under the EE Act will inform approval decisions under the *Planning and Environment Act 1987, Aboriginal Heritage Act 2006, Water Act 1989, National Parks Act 1975* and EPBC Act*,* as well as a range of other permits and consents.

3.1 Environment Effects Act 1978

The Environment Effects Act (EE Act) provides for assessment of proposed projects that are capable of having a significant effect on the environment. The decision to require an EES obliged the proponent to investigate the potential extent, significance and related uncertainties of the project's environmental effects, particularly on native vegetation, flora and fauna species and communities listed under the FFG Act and EPBC Act*,* as well as environmentally sensitive waterways.

Draft Scoping Requirements were exhibited for public comment for 15 business days from 1 September 2020 to 21 September 2020. On 25 November 2020 the final Scoping Requirements were issued, specifying the range of matters to be addressed in the EES. A technical reference group[1] was convened by the Department of Environment, Land, Water and Planning (DELWP) in accordance with normal EES practice to provide advice to the proponent and DELWP on the preparation of the EES.

As part of the EES the Yarra Ranges Council was required to document the investigation and avoidance of potential environmental effects of the project, including for any relevant alternatives, as well as associated environmental mitigation and management measures. The EES was required to document and explain the assessment of feasible alternatives and their effects, including an explanation of how and why specific alternatives were selected for detailed evaluation within the EES. Consideration and assessment of suitable alternatives, including trail realignments, ensured any feasible variations to the project were identified prior to, and during, the EES process.

The EES, prepared by Yarra Ranges Council, was placed on public exhibition from 26 November 2021 to 25 January 2022. A draft PSA (Amendment C198yran) to the Yarra Ranges Council planning scheme was also exhibited with the EES. A total of 2707 submissions were received, including three from State government bodies (EPA, Melbourne Water Corporation and Parks Victoria).

On 8 December 2021 with the consent of the Governor in Council, an inquiry was appointed under section 9(1) of the EE Act, to review submissions and inquire into the environmental effects of the proposal, in accordance with its terms of reference, which were approved on 21 November 2021. The inquiry members were also appointed as an advisory committee under section 151 of the *Planning and Environment Act 1989* to consider the draft PSA.

The inquiry and advisory committee (IAC) held the directions hearing on 11 February 2022, followed by public hearings, which were held from 15 March 2022 to 7 April 2022. The IAC provided its report on 20 June 2022.

The next step under the EE Act, requires me to provide an assessment of the environmental effects of the project to statutory decision-makers under Victorian law (i.e. this document), to consider before deciding whether and how the proposal should proceed. This assessment will inform approval decisions under the Victorian and Commonwealth law, as outlined below.

1. The technical reference group comprised representatives of departments and authorities with statutory interests and expertise relevant to the project, including DELWP (Planning and Environment portfolios), First Peoples – State Relations, Heritage Victoria, Parks Victoria, Melbourne Water, Department of Transport, Environment Protection Authority and the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation.

3.2 Planning and Environment Act 1987

The *Planning and Environment Act 1987* (P&E Act) sets out processes for planning permits and the amendment of Victorian planning schemes. This project is pursuing an amendment to the Yarra Ranges Planning Scheme, to provide comprehensive statutory planning controls to facilitate the construction and operation of the project, rather than multiple separate planning permits, required under various provisions of the relevant planning scheme. The bespoke amendment would introduce a comprehensive planning control for the project, using an incorporated document and specific controls overlay. Any amendment to the Yarra Ranges Planning Scheme in the area needs to be consistent with the *Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan* (Regional Strategy Plan).

The draft PSA included in the exhibited EES is discussed in Section 5.1.

3.3 National Parks Act 1975

The *National Parks Act 1975* establishes a network of national parks and other protected areas that are representative of Victoria's diverse natural environments and sets out the legal framework for their protection, use and management. The approval of the Minister for Energy, Environment and Climate Action is required for permanent works to be carried out in Yarra Ranges National Park under section 23 of the Act. Permanent works for which approval is required include the construction of a building or other structure or other permanent works for the protection, development or improvement of the park including the establishment of camping places, roads and tracks.

3.4 Water Act 1989

The *Water Act 1989* provides the legal framework for the management of Victoria's water resources, including the regulation of the protection of waterways. The project will require a licence to be granted by Melbourne Water under section 67 of the Water Act, including for construction on or over the bed and banks of designated waterways including construction of a bridge over the Yarra River.

3.5 Aboriginal Heritage Act 2006

The *Aboriginal Heritage Act 2006* provides for the regulation of the protection of Aboriginal cultural heritage in Victoria. A Cultural Heritage Management Plan (CHMP) is required under the Act before commencing works associated with the Warburton Mountain Bike Destination Project. Matters relevant to the assessment of the CHMP are addressed in Section 6.5 of this assessment.

As outlined in the EES, Yarra Ranges Council is preparing a CHMP for this project, in consultation with the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation, the Registered Aboriginal Party (RAP) for the project area. The draft CHMP15276 will be submitted to the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation for approval. As required under section 49 of the Aboriginal Heritage Act, construction of the project cannot commence until CHMP15276 has been approved.

3.6 Environment Protection Act 2017

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

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

incidents, contaminated land and waste. The new Act and regulations have also resulted in state environment protection policies being largely replaced by environmental reference standards.

The Environment Protection Authority (EPA) advised that a development licence was not required for any components of the project under the Environment Protection Act and associated regulations.

However, irrespective of permission not being required, the Environment Protection Act is still of relevance to the assessment of the project. The duties under the Act, including the GED, will apply to the project independently of and in addition to the other proposed project controls.

Matters relevant to the assessment of the project against the requirements of the Environment Protection Act and regulations are addressed in sections 5 and 6 of this assessment.

3.7 Other Victorian statutory approvals

The project also requires other Victorian statutory approvals and consents:

- a permit to remove listed flora and/or fauna from public land under the *Flora and Fauna Guarantee Act 1988*;
- a licence or permit may be required under the *Forests Act 1958*;
- amendments to the Yarra Ranges National Park Management Plan may be required under the *Parks Victoria Act 2018*;
- if needed, a permit to disturb an item listed in the Victorian Heritage Inventory under the *Heritage Act 2017*;
- if needed, a permit to take wildlife under the *Wildlife Act 1975*;
- consent to undertake works on a road and to connect to a freeway under the *Road Management Act 2004*; and
- a permit may be required for the management of noxious weeds under the *Catchment and Land Protection Act 1994*.

3.8 Commonwealth statutory approval

On 20 May 2020, the Yarra Ranges Council referred the project to the then Australian Government Minister for the Environment (Referral 2019/8605) for a determination on whether the project is a controlled action under the EPBC Act.

On 16 June 2020, a delegate for the Minister determined the project to be a controlled action requiring assessment and approval under the EPBC Act, as it is likely to have a significant impact on listed threatened species and communities, which are protected as MNES under Part 3 of the EPBC Act.

The EES is an accredited assessment process under a bilateral agreement between the Australian and Victorian governments. Hence, my assessment will inform the Australian Government Minister for Environment and Water's (or delegate) decision about whether the action is approved, approved with conditions or refused under the EPBC Act, therefore fulfilling the assessment requirements for MNES under the EPBC Act. My assessment of the potential impacts on MNES is addressed in detail in Section 6.8.

4. Environmental assessment – key matters

This part of the document provides my assessment on some key matters. On balance, it is my assessment that the large majority of the trail network and other works proposed for the project can proceed with acceptable environmental effects, subject to project modifications and an environmental management regime consistent with that endorsed by the IAC and refined as per the findings and recommendations of this assessment.

However, I support the conclusion of the IAC that Trails 1, 45, 46 and 47 would present unacceptable risk of significant effects, particularly for significant stands of Cool Temperate Rainforest and Cool Temperate Mixed Forest, as well as for the Mount Donna Buang Wingless Stonefly, which are of high conservation value to the State. The key reasons, as detailed within Section 6.1, are:

- they have the potential for significant effects on areas of high quality and pristine Cool Temperate Rainforest and Cool Temperate Mixed Forest vegetation communities from the spread of pathogens, particularly Myrtle wilt and Phytophthora, with no certainty that mitigation measures would reduce either the risk or the impacts to acceptable levels; and
- there is also the potential for these proposed trails to have significant effects on the Mount Donna Buang Wingless Stonefly (critically endangered under the FFG Act), as they include known locations and suitable habitat, and there is insufficient certainty regarding the effectiveness of proposed mitigation measures.

In line with the IAC, I recommend Trails 1, 45, 46 and 47 should not form part of the project that is implemented due to the risk of significant unacceptable effects on these significant environmental values within the national park. This will also assist in reducing potential impacts on the critically endangered Leadbeater's Possum by avoiding trails near areas of the highest quality habitat for the species, particularly closer to the summit of Mount Donna Buang. Further details on these potential effects are provided Section 6.1 and 6.8.

Any further consideration of trails proposed within the Yarra Ranges National Park needs to ensure impacts on significant stands of Cool Temperate Rainforest and Cool Temperate Mixed Forest, as well as the Mount Donna Buang Wingless Stonefly and Leadbeater's Possum are avoided – this needs to be demonstrated to the satisfaction of relevant decision-makers, in particular under the National Parks Act.

I acknowledge that without the feature trails as proposed in the EES, the project will likely need changes to some other components to adapt to a modified trail network within the national park. For example, the proposed trail head at the summit of Mount Donna Buang may no longer be required, and shuttle bus routes may need to be altered accordingly. If any aspects need to be added to the project to adapt it to the modified trail network, such as new shuttle bus drop off bays, any such changes would need to meet relevant assessment and approval requirements. I recommended that consultation with relevant government and community stakeholders are conducted regarding any proposed changes made in response to this assessment, to help ensure project design and mitigation measures are appropriately adapted and remain consistent with the findings of this assessment.

While specific environmental effects are considered further in Section 6, the sections below examine overarching issues related to:

a) project benefits;
b) consideration of project alternatives; and
c) impacts on Yarra Ranges National Park.

4.1 Project Benefits

The broader benefits of a project are an important matter and need to be considered and balanced in the context of the identified impacts of delivering the project, including for statutory decision making on the project, such as under the P&E Act.

The EES demonstrated that the project is likely to provide both local and regional economic benefits through additional indirect and direct spending, as well as additional job opportunities. I agree with the IAC that the project will boost the local economy and assist with diversification and the transition away from some employment sources that are declining in this region. The project will likely generate new opportunities for businesses. In turn, these businesses will provide new job opportunities during the operational phase of the project. I support the conclusion of the EES that these economic benefits are particularly important given the town and broader region has been experiencing economic hardship associated with the decline of local mining and forestry industries.

Additionally, I consider the project will result in significant benefits for health and wellbeing of the community through providing further recreational opportunities for a wide range of cyclists, not solely experienced mountain bike riders coming to the town. The broader economic and social benefits of the project, including these recreational benefits for the wider community, were acknowledged by most submitters.

I note that the EES Economic Feasibility Study concluded that, even without trails in the national park, the project would still provide a significant increase in local spending. I support the IAC's view that the project would still be expected to contribute positively to the economic and social wellbeing of the local area and region in this case.

On balance I consider that that the economic and social benefits of the project will exceed the adverse social and economic effects, which are largely localised in nature. However, it is acknowledged that there will be some people, particularly residents living close to the new trails, who will be affected by some noise and traffic from construction activities, or who will be adversely affected by impacts on housing affordability or changes to Warburton township likely to result from increased visitation and tourism.

The socioeconomic benefits and impacts of the project are examined in detail within Section 6.4.

4.2 Consideration of project alternatives

The EES was required to describe and assess effects of feasible alternatives for the project's design and layout. This included a comparative assessment of environmental effects of feasible alternatives, as well as the basis for the preferred alternative. The assessment of alternatives was appropriately risk-based in nature, with a focus on feasible alternatives that could provide greater opportunity to avoid and minimise significant environmental effects, while delivering the project's objectives.

The proponent examined various alternative tracks and alignments before identifying the proposed project design (and viable alternatives) within the EES. A screening process was used to identify trails for which further consideration of alternatives was warranted, using criteria developed in consultation with the TRG. The outcomes of this process were alternatives and refinements to the design, most notably two options for the feature trail (Trail 1) from the top of Mount Donna Buang within the Yarra Ranges National Park:

- Trail 1 (nicknamed Drop-a-K) involving the construction of a new track with a length of 22 km; or
- a combination of three new trails (45, 46 and 47), with a combined length of 15 km.

Of these two options presented in the EES, the proponent indicated their preference would be to construct the Drop-a-K trail. A comparison and assessment of the alternatives for Trail 1 was provided in Chapter 15 of the EES, and further detail on alternatives assessed in the EES process was provided in the Alternatives Assessment Report (Attachment II to the EES). This included consideration of whether there were any feasible alternatives to Trails 5 and 50, as well as trail head and bridge locations.

The IAC was satisfied that the identification and assessment of alternatives in the EES was sufficient, and I support the IAC's conclusion.

My assessment of effects of the project is made based on the Council's EES and subsequent documentation tendered to the IAC. This encompasses the proponent's preferred form of the project and the alternatives it identified and examined in the EES, particularly Trails 45, 46 and 47, as a viable alternative to Trail 1.

4.3 Yarra Ranges National Park

The northern part of the proposed trail network is located primarily within the Yarra Ranges National Park, including the proposed Mount Donna Buang trail head. The national park is managed by Parks Victoria under the National Parks Act, which is guided by the Park Management Plan (Tabled Document 96) approved in June 2002. I note there is community concern regarding trails in the national park, with around half of the opposing submissions having opposed or queried the appropriateness of trails in the national park.

The IAC considered submissions on various issues relating to the siting of a portion of the Project within the national park, including submissions from Parks Victoria and the Victorian National Parks Association (VNPA). The IAC concluded that mountain biking is not inherently inconsistent with the objectives of the National Parks Act or the aims and strategies in the Park Management Plan. Recreational uses including cycling are allowed in the park, however this is only if they do not compromise the conservation values of the protected area. I agree with the IAC that any proposed trails in the national park need to be carefully sited, designed, constructed and maintained to ensure that they do not compromise the conservation values of the national park.

As noted by the IAC, the feature trails proposed in the EES (Trails 1, 45, 46 and 47) include parts of the national park that are more pristine and contain important habitat for threatened species as well as very high quality stands of protected native vegetation communities. Due to the high conservation values present across these parts of the park and the risk of significant impacts associated with the development of trails through these areas, I support the findings of the IAC that Trails 1, 45, 46 and 47 should not be progressed. This is to be considered in the context of the significant value of high quality Cool Temperate Rainforest and Cool Temperate Mixed Forest vegetation communities, which are protected under the FFG Act and increasingly rare, and the relevant conservation objectives for the park. The protection of these pristine areas within the park is important, including from the spread of known pathogens such as Myrtle wilt and Phytophthora.

As outlined by the IAC, the remaining trails proposed in the national park (Trails 2 to 8) are in less pristine parts of the park. I support the finding of the IAC that, with implementation of the recommended mitigation measures, Trails 2 to 8 proposed in the EES are considered acceptable and are not misaligned with the Park Management Plan's aim to protect sensitive environments. However, the acceptability of these trails is strongly dependent on the effectiveness of mitigation measures implemented during the design, construction and operations. My assessment of the proposed mitigation measures and associated recommendations are provided in Sections 5 to 6.8.

As outlined in Section 3.3, any Project works proposed within the national park (including trails and structures) would require approval under section 23 of the National Parks Act. It is also noted that any necessary amendments to the Yarra Ranges National Park Management Plan would be required under the *Parks Victoria Act 2018*.

5. Environmental management and planning framework

This part of my assessment explains relevant aspects of the regulatory framework and the environmental control regime that have informed my assessment. It also summarises the proposed planning controls and environmental management framework for the project and my recommendations in relation to some elements of those.

My assessment has been informed by consideration of the EES, public submissions, evidence tabled with the IAC, information and submissions presented at the IAC's public hearing, the IAC report and other relevant resources. Legislation, policy, strategies and guidelines, and the objectives and principles of ecologically sustainable development, also contextualise my assessment.

5.1 Management of environmental effects

I acknowledge that the project will generate both positive and negative environmental effects. A sound regulatory framework and environmental control regime is needed to ensure that adverse effects of the project are effectively minimised, mitigated and managed. I have considered and made findings on key elements of that regime, as described below, and taken account of these when assessing the project's environmental effects.

Environmental management framework

The proponent developed an environmental management framework (EMF) for the project, presented in Chapter 16 of the EES. It consists of a regime of plans, controls and responsibilities to be given statutory weight through a planning scheme amendment (PSA) and associated incorporated document. The EMF and associated draft plans were updated through the IAC hearing.

A draft PSA was exhibited with the EES which included the proposed incorporated document with conditions, establishing obligations for the preparation of management plans that need to be approved, including a construction environmental management plan (CEMP) and an operations environmental management plan (OEMP), as well as development plans that will detail the final alignment of trails.

The final EMF tabled at the IAC hearing (document 157) provides a consolidated list of the proposed mitigation measures and identifies the key performance evaluation and compliance requirements. The EES generally refers to mitigation and contingency measures. Consistent with the IAC report, these are referred to in this report as 'mitigation measures'. All the elements of the environmental management regime set out in the EMF are to be translated into management plans for the project. The plans will include mitigation measures, independent review and environmental reporting requirements.

The responsibilities and accountabilities for environmental management primarily involve Yarra Ranges Council, contractors, independent auditors and relevant decision-makers, such as the Minister for Planning and Parks Victoria. The appointed contractor's responsibilities will be included as contractual requirements, including implementation of the CEMP. The draft CEMP was exhibited with the EES and updated during the IAC hearing. It will need to be finalised in light of my assessment and consultation with relevant regulators and submitted for approval in due course.

As noted in Section 3.6, since the assessment of recent public infrastructure projects under the Environment Effects Act, the new Environment Protection Act has now come into effect, creating a new regulatory context for environmental protection and management. This includes expectations such as the GED, which 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.

During the IAC hearing, Yarra Ranges Council made minor changes to the draft CEMP and draft OEMP to more clearly refer to the GED. This text noted that additional mitigation measures may be required to minimise the risk of harm to human health or the environment so far as reasonably practicable under the GED, and that these additional measures may change over time as the 'state of knowledge' evolves.

Once the project is constructed, Yarra Ranges Council would become responsible for the ongoing operation and maintenance of the infrastructure. This would need to be done in accordance with an approved OEMP. The broad structure of the key environmental management documentation for construction and operations was endorsed by most submitters and the IAC (Figure 2).

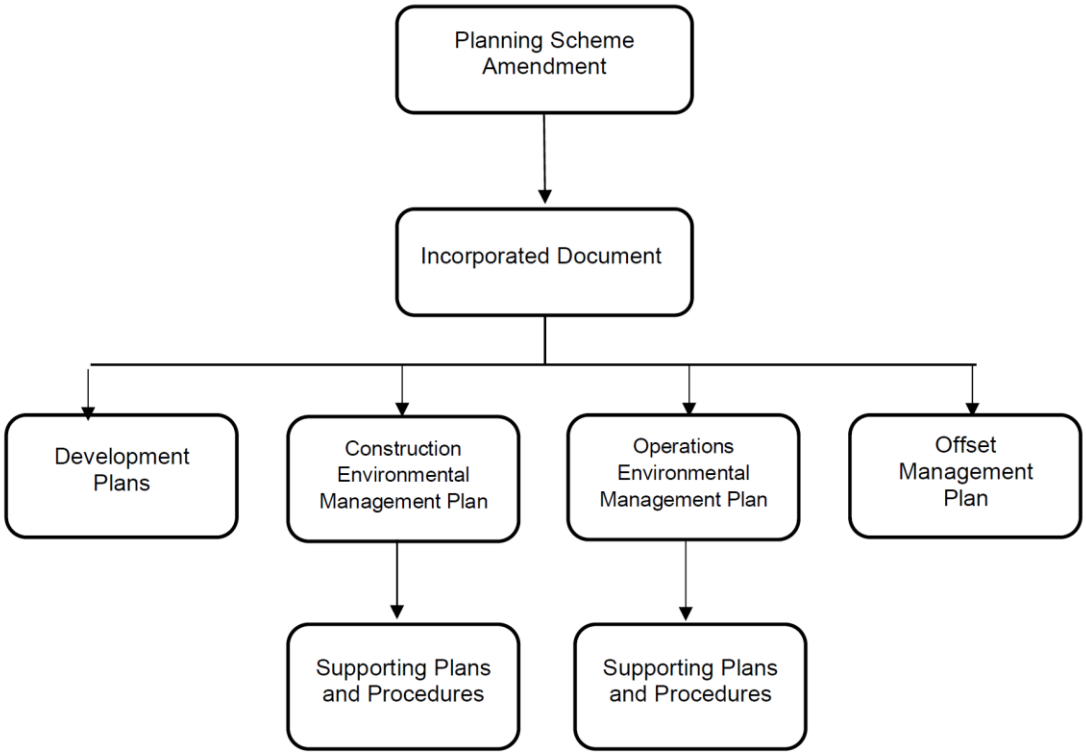

Figure 2: Overview of the key environmental management documentation (Source Chapter 16 of the EES).

An essential part of the proposed EMF is the mitigation measures which Yarra Ranges Council and its contractors need to implement (through the CEMP and OEMP) to mitigate or manage the environmental effects of the project. The mitigation measures were the subject of submissions and focussed consideration through the IAC hearing. This led to Yarra Ranges Council tabling updated versions of the draft CEMP, draft OEMP and EMF during the hearing (Final Hearing Versions – Tabled Documents 158, 159 and 157 respectively), with refinements resulting from further consideration of issues raised by submitters and advice from relevant experts. Along with the IAC, I support the proposed changes to the draft CEMP, draft OEMP and EMF included in the final hearing versions, unless otherwise recommended in Section 6 of this assessment.

I note the importance of the project effectively implementing further opportunities to reduce residual impact for biodiversity values during project design and construction, informed by appropriate targeted surveys, mitigation measures and micro-siting procedures for the final trail alignments. This would need to be undertaken to the satisfaction of relevant decision-makers, in line with approved management and development plans.

Notably, to assist in ensuring the project ecologist would have the appropriate independence and expertise, the IAC's proposed changes to the EMF included amending the roles and responsibilities to describe the requirements for the project ecologist and amending all references to an ecologist to refer to a

'suitably qualified independent ecologist'. Further amendments to specific mitigation measures are discussed in Section 6 of this assessment.

Without prejudice to any decisions that may follow with respect to the proposed PSA and secondary consents, I am satisfied that the proposed approach to environmental management set out within the EES and amended through the IAC hearing is sound. It incorporates clear accountabilities and key elements required for environmental management for both construction and operation. The final CEMP, taking account of the finding of this assessment, must be approved before project works may commence. I support the findings and recommendations of the IAC in relation to EMF and specific mitigation measures and draft plans, apart from where otherwise recommended in this assessment.

Planning controls

In its role as an advisory committee under the P&E Act, the IAC has made recommendations on the draft PSA. In this assessment, I will discuss the IAC's recommendations on the draft PSA in general and insofar as it is relevant to this assessment, but noting that subsequent consideration and decision on these matters is still required under the P&E Act. This will occur after the PSA is revised in response to the findings and recommendations of this assessment and a request is submitted and considered in the context of this assessment.

A PSA to the Yarra Ranges Planning Scheme is proposed to introduce project specific planning controls for the project, using an incorporated document and specific controls overlay. In the absence of a PSA, the project would be subject to multiple, separate planning requirements under various provisions of the planning scheme. A draft PSA (Amendment C198yran to the Yarra Ranges Planning Scheme) was prepared by the proponent and included in the exhibited EES (Attachment 7 to the main report).

The purpose of the draft PSA is to:

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

In broad terms, the proponent's draft PSA proposes to:

- insert an incorporated document into the Yarra Ranges Planning Schemes to allow use and development of land for the project in accordance with the specific controls or conditions in the incorporated document; and
- apply the Specific Controls Overlay (SCO) to land required for the project.

The draft incorporated document was updated by the proponent through the IAC hearing process in response to expert evidence and submissions. Yarra Ranges Council tabled a Day 1 draft version of the incorporated document (Tabled Document 48a). The changes made to the exhibited incorporated document and supported by IAC include:

- amendment to make the Minister for Planning (not Council) the Responsible Authority in relation to the Specific Controls Overlay in the planning scheme and the incorporated document;
- deletion of the exemptions for use on private land intersected by the trails due to an insufficient strategic planning basis;
- an addition to require a visual impact assessment for the two bridges (see Clause 6.1(d));
- an addition to allow variations within the 20-metre corridor if any trail alignment is required as a result of the pre-construction micro-siting process (see Clause 6.2);
- changes to the Emergency Management Plan requirements in Clause 8 to include a bushfire management strategy, additional consultation requirements (Victoria Police, Ambulance Victoria, SES and DELWP as well as the CFA and land managers);
- amendment to only require the OEMP plan prior to commencement of use, not prior to development;

- changes to native vegetation controls to make them clearer, and as an added protection in relation to vegetation removal;
- addition of a requirement for an Event Management Plan for large events;
- deletion of references to legislative approvals required for historic heritage and Aboriginal cultural heritage; and
- minor corrections and drafting changes for clarity.

The draft version of the incorporated document includes specific conditions that require the development of additional plans including development plans, CEMP, OEMP, Emergency Management Plan and event management plans. Other conditions in the draft incorporated document include actions being undertaken to the satisfaction of the Minister for Planning, the Secretary of DELWP and/or Council. These conditions or secondary consents included in the incorporated document, provide an essential means of ensuring appropriate avoidance and minimisation of impacts is achieved during development of the design, micro-siting and operation of the trails, including taking account of the findings and recommendations of this assessment. The final form of the PSA and incorporated document submitted for approval will need to take account of the recommendations of this assessment to help achieve acceptable environment outcomes.

The land proposed to be required for the project is defined by SCO on draft PSA maps. These would provide the basis to govern use and development of the project and provide planning approval for the project. IAC agrees that the SCO is an appropriate planning tool to govern the use and development of the project and that the planning controls in the draft PSA constitute an appropriate mechanism to facilitate the project.

The IAC recommended further changes be made to the incorporated document related to adjustments to the SCO mapping:

- apply the SCO to the whole of the golf course land;
- apply the SCO to land needed for the Wesburn Park and Mount Tugwell trail heads and two bridges to be constructed as part of the project; and
- remove SCO mapping for Trails 1, 45, 46 and 47.

I note SCO areas exhibited as part of the EES did not include land proposed for trail heads and agree with IAC that adjustments to the SCO mapping should be made to include land specifically required for the associated trail infrastructure to be implemented by the project. I also agree with IAC that the SCO is to be applied to the land needed for the use and development of trail head works at Wesburn Park and Mount Tugwell and the two bridges.

However, I do not support the IAC's recommendation to adjust SCO mapping for the main trail head to cover the entirety of the golf course land. The SCO should only be applied to the section of land on the golf course that is to be used for the project. Any variation to the SCO boundary beyond the area considered in the EES would need to demonstrate assessment and mitigation of any additional environmental or amenity impacts. Inclusion of additional land within the SCO would also need to be agreed to by the landowner and should be justified as part of PSA for my assessment. Future variations to the adopted SCO to allow for trail re-alignments or associated infrastructure works will require a further examination by relevant decision-makers. This approach is consistent with IAC's view in relation to trail alignments, i.e. it is not appropriate to widen approval corridors where impacts have not been assessed in the EES.

The controls and conditions in the incorporated document will help to ensure the narrowing of areas where works and impacts are permitted to occur, taking into account the findings and recommendations of this assessment. It is appropriate that further avoidance and minimisation of impacts be required by the controls set in place through the PSA. The drafted conditions require approval of development plans with detailed trail alignments, prepared in compliance with the CEMP. The CEMP needs to be finalised in line with this assessment before it can be approved and applied to the trail and infrastructure designs, micro-siting and mitigation of residual impacts.

As per Section 6.1, I have recommended Trails 1, 45, 46 and 47 not be implemented as part of the project layout. I support IAC's recommendation to remove the SCO from the proposed trail alignments and to not apply to the Mount Donna Buang trail head if it is removed from the project as a result as well. However, should further consideration of the trails proposed within the national park occur, subject to ensuring risks to significant conservation values are avoided to the satisfaction of relevant decision-makers, some portions of the SCO covering these trails will need to be retained.

The IAC recommended other changes to the incorporated document related to the following issues which I have discussed in relevant sections of Section 6:

- bushfire and emergency management (Section 6.7);
- event management (Section 6.4 and Section 6.6);
- native vegetation and hazardous trees (Section 6.1);
- parking and shuttle bus services (Section 6.6); and
- visual amenity (Section 6.4).

In principle I support these recommended changes to the incorporated document, noting I have recommended some refinements to recommendations as summarised in Section 6.

The P&E Act also requires any PSA to be consistent with the Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan (RSP). The draft PSA documentation at Attachment 7 of the EES, Council's submission and expert evidence submitted at the IAC hearing (Tabled Documents 70, 71 dated 23 March 2022; 33a and 33b dated 28 February) support the view that the project is consistent with the RSP. They also help to show consistency of the proposed introduction of the SCO to permit the use and development of the project with the relevant requirements of the planning scheme.

In summary, I consider that the broad planning framework recommended by the IAC with revisions made in accordance with my assessment of the environmental effects would be appropriate to facilitate the project, encourage tourism, economic development and minimise environmental effects and protect conservation values. However, I do not support extension of the SCO to the whole golf course land, and I have made other recommendations regarding the content of the PSA in Section 6.

6. Assessment of environmental effects

This section details my examination of the project's potential effects on each aspect of the environment in the context of relevant evaluation objectives, which are set out below.

Assessment evaluation objectives

To provide an integrated structure for this assessment, key aspects of legislation and statutory policy have been synthesised into a set of evaluation objectives (Table 1). These objectives are derived from the evaluation objectives included in the scoping requirements for the EES and used by Yarra Ranges Council in its assessment of alternatives and environmental effects within the EES. The IAC also assessed the project and its effects having regard to the evaluation objectives.

Table 1: Assessment evaluation objectives (key topics bolded)

Evaluation objective	Relevant section of this report
*Avoid, and where avoidance is not possible, minimise potential adverse effects on **native vegetation and animals** (particularly listed threatened species and their habitat and listed ecological communities), as well as address **offset requirements** consistent with state and Commonwealth policies.*	6.1 and 6.8
*Maintain the functions and values of **groundwater, surface water and floodplain environments** and minimise effects on **water quality and beneficial uses**.*	6.2
*Minimise potential adverse **social, economic, amenity and land use** effects at local and regional scales.*	6.3 and 6.4
*Avoid, or minimise where avoidance is not possible, adverse effects on **Aboriginal and historic cultural heritage**.*	6.5

The IAC made several findings and recommendations for the project. My response to its key findings and recommendations, along with my assessment of the environmental effects of the project, are detailed in the sections below. My findings in relation to matters of national environmental significance (MNES) are also provided in Section 6.8.

6.1 Biodiversity and habitats

Evaluation objective

Avoid and where avoidance is not possible, minimise potential adverse effects on native vegetation and animals (particularly listed threatened species and their habitat and listed ecological communities), as well as address offset requirements consistent with state and Commonwealth policies.

Assessment context

Biodiversity impacts are addressed in chapters 8 and 14 of the EES and Technical Appendix A (the Biodiversity Assessment prepared by Biosis). Chapter 5 of the IAC's report discusses the IAC's findings in relation to biodiversity and habitats. EES Attachment IV constitutes the proposed native vegetation offset strategy for the project.

The EMF included 78 key mitigation measures specifically addressing potential effects on biodiversity values and some of these have been the subject of recommendations by the IAC.

A number of potential impacts of the project for biodiversity values were examined through the EES and inquiry process, in particular:

- loss or degradation of native vegetation and/or habitat for threatened fauna and flora species and communities listed under the EPBC Act and FFG Act,
- direct impacts on threatened species;
- impacts on non-threatened fauna; and
- disturbance effects from changes in hydrology (including surface and groundwater changes), water quality, contaminants and pollutants, environmental weeds, pathogens and pest animals.

Discussion

Native Vegetation

Nine ecological vegetation classes (EVCs) were recorded within the project area across two bioregions; Highland Southern Falls and Victorian Alps. Native vegetation impacts were presented for the two project scenarios; the trail network including Trail 1 and the alternative trail network including Trails 45, 46 and 47. The EES stated that only understory vegetation to a height of 2.5 metres will be removed and assumed, based on arborist advice, that no large trees or canopy trees would be removed or deemed lost. The EES Biodiversity Assessment in Technical Appendix A identified that 37.047 hectares of understory native vegetation would be removed for the trail network including Trail 1. For the trail network including Trails 45, 46 and 47, 35.754 hectares of understory native vegetation would be removed. As detailed in Table 2 over 90 percent of vegetation proposed for removal belongs to EVCs which have a bioregional status of 'least concern'. One EVC with a bioregional status of 'vulnerable' is proposed for removal, Heathy Valley Forest, which comprises 0.3 percent of both trail network options.

The remainder of the understory native vegetation to be removed (1.053 hectares for the network including Trail 1, 0.504 hectares for the trail network including Trails 45, 46 and 47) is classified as Cool Temperate Rainforest EVC (EVC 31), which has a bioregional conservation status of 'endangered'. This EVC includes two FFG Act-listed communities; Cool Temperate Rainforest and Cool Temperate Mixed Forest.

In response to a request from the IAC, the proponent's expert witness clarified the amount of understorey native vegetation needing removal within the Yarra Ranges National Park would be 9.51 hectares for trail network 1 (including Trail 1) and 9.15 hectares for trail network 2 (including Trails 45, 46 and 47).

Calculation of vegetation impacts

The IAC considered that the methods used to estimate the construction footprint for the assessment for vegetation removal were sound. The IAC agreed with the proponent's expert and peer reviewer about the need for an audit of impacts subsequent to construction, using a sampling approach, to allow for adjustments to the offset calculations. The IAC recommended that the sampling approach applied should be approved by DELWP, prior to the removal of any native vegetation. I support the IAC's view on this matter and consider this should be completed to the satisfaction of DELWP[2].

The micro-siting protocol already provides for an ecologist to consider the need for additional offsets if hazardous tree removal or excessive pruning is necessary, but this is not reflected in the mitigation measures. The IAC agreed with evidence presented by the proponent peer reviewer, that the calculations for understory vegetation losses for the project should be undertaken using the methods in Appendix 3 B.3 of the Assessor's Handbook, rather than Appendix 3 B.1 as some small eucalypt, Silver Wattle or Blackwood trees, which qualify as canopy trees, may require removal or pruning. The IAC recommended additional mitigation measures B19A and changes to B70 be added to the emergency management plan and follow through to the CEMP to address the above matters. I support the IAC's recommended changes to the mitigation measures, to ensure accurate calculation of vegetation removal to inform the required offsets.

[2] Specifically, the DELWP Region (Regional Director Port Phillip Region, or delegate)

Table 2 Predicted maximum loss of EVCs for option with Trail 1 and option with Trails 45, 46 and 47 (Source: Table 33 in EES Technical Appendix A)

Bioregion	EVC	Bioregional conservation status	Removal of understory vegetation (ha)	
			With Trail 1	With Trails 45, 46 and 47
Highland Southern Falls	EVC 16 Lowland Forest	Least Concern	1.71	7.87
	EVCD 18 Riparian Forest	Least Concern	0.005	0.005
	EVC 23 Herb-rich Foothill Forest	Least Concern	0.41	0.41
	EVC 29 Damp Forest	Least Concern	10.651	9.98
	EVC 30 Wet Forest	Least Concern	10.990	9.917
	EVC 31 Cool Temperate Rainforest (**pure CTR**)	Endangered	0.059	0
	EVC 31 Cool Temperate Rainforest (**CTMF**)	Endangered	0.023	0.052
	EVC 39 Montane Wet Forest	Least Concern	0.270	0
	EVC 45 Shrubby Foothill Forest	Least Concern	12.319	12.319
	EVC 127 Heathy Valley Forest	Vulnerable	0.117	0.117
Vic Alps	EVC 30 Wet Forest	Least Concern	0	0.773
	EVC 31 Cool Temperate Rainforest (**pure CTR**)	Endangered	0.291	0.131
	EVC 31 Cool Temperate Rainforest (**CTMF**)	Endangered	0.683	0.321
	EVC 39 Montane Wet Forest	Least Concern	0.539	1.039
TOTAL			**37.047**	**35.754**

Hazardous Tree Removal

The IAC noted that there is uncertainty around the impacts from the removal or lopping of mature trees which may be considered hazardous. Parks Victoria, the Victorian National Parks Association, Warburton Environment, Friends of Leadbeater's Possum and other submitters all highlighted concerns around habitat loss from the removal of hazardous trees and consequential loss of trees during the operation phase of the project. Parks Victoria highlighted that old (and dead) trees have a role in providing critical habitat and stated that managing trees to prevent hazards to mountain bike users has the potential to result in significant numbers of old growth trees with habitat value being removed during the operational phase.

The proponent's expert argued that standing trees are not regularly felled as part of trail operational maintenance and considered that micro-siting would enable the avoidance of potentially hazardous trees meaning removal or lopping would not be necessary. If not resolved through micro-siting, it was considered the tree should be assessed by an ecologist, arborist and the land manager, as required in the EMF by mitigation measure BM62.

The IAC considered that measures related to tree removal or lopping (BM62, BM70, BM72 and the micro-siting protocol) framed a high-level objective, rather than making a firm commitment to avoid tree removal

during design and construction. The IAC recommended a number of changes to the mitigation measures to address related uncertainty and potential impacts. They considered that micro-siting would be most effective at avoiding most but not all removal or excessive lopping of hazardous trees, some of which are 30 to 40 metres high. The IAC also noted that trees may present new hazards throughout the operational life of the project, resulting in incremental lopping and/or removal.

The IAC also recommended insertion of a new clause 11 in the incorporated document to require that a hazardous tree assessment be undertaken before construction starts, based on advice from a suitably qualified arborist, and that this assessment should inform required offsets. I generally support the recommendations of the IAC in relation to hazardous trees, though with some amendments as discussed below.

I do not support the IAC's recommendation that the hazardous tree assessment include "an assessment of the frequency of tree lopping or removal of trees likely to be required during operations", as this is not practical and not supported by the relevant regulations. I do however note that separate hazardous tree assessment reports will likely need to be prepared for each progressive stage of the project. I recommend these hazardous tree assessment reports should be prepared to the satisfaction of DELWP[3] for trails outside the Yarra Ranges National Park, and to the satisfaction of Parks Victoria for trails within Yarra Ranges National Park.

The IAC also recommended to amend BM62 to ensure that trail closure is considered as an option to avoid tree removal if high habitat value trees are identified as hazardous. While I support this recommendation, I would recommend that 'minor realignment' of the trails should also be considered in such cases. Any realignment of the trails would need to meet relevant approval/ consent.

I support this and the other changes recommended by the IAC to BM10 and BM70. Requirements for hazardous tree removal (and associated offsetting requirements) for the operations phase should be determined as part of secondary consents in accordance with management arrangements and land manager standards of practice.

With the implementation of mitigation measures as amended by the IAC and this assessment, I consider that the impacts of hazardous tree removal would be acceptable.

Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDE) occur as montane thickets within wet forest and rainforest vegetation within the project area. Technical Report A describes potential impacts to GDE within the project area include both removal of vegetation as well as impacts to groundwater flow pathways. As discussed in Section 6.2 of this assessment, the EES Surface Water, Groundwater and Geotechnical Report concluded that no significant impacts on groundwater were expected to occur for the project, taking account of the implementation of the proposed mitigation measures. Potential impacts to GDEs are expected to be minimal and of short duration. Provided proposed mitigation measures are implemented I consider there is unlikely to be a significant impact on GDEs.

Requirements to avoid, minimise and offset

The EES states that the trail alignments and design responses were assessed and chosen to avoid and/or minimise impacts on threatened species and that these have translated to minimising impacts on general biodiversity values, including native vegetation. The IAC noted that the Native Vegetation Guidelines[4] require that efforts to avoid removal of native vegetation should be commensurate with the significance of the vegetation and considered the EES had sufficiently documented such efforts. The IAC also acknowledged that the only remaining option for avoidance was to remove trails.

[3] Specifically, the DELWP Region (Regional Director Port Phillip Region, or delegate)

[4] Department of Environment, Land, Water and Planning 2017. Guidelines for the Removal, Destruction or Lopping of Native Vegetation.

In the absence of specific, targeted surveys and detailed habitat assessments for threatened species, it makes it difficult to be completely definitive about whether the avoidance and minimisation has, at this stage, been commensurate with the significance of the biodiversity values of the vegetation. Maximising avoidance and minimisation will in fact be dependent on actions taken during micro-siting, which this assessment examines in further detail below.

The draft Native Vegetation Offset Strategy included within the EES indicates that for each trail network option, offsets comprising species habitat units for 13 species will be required. These include 12 species common to both network options, as well as species habitat units for Leadbeater's Possum for Trail 1 and species habitat units for Wavy Fork-moss for Trails 45, 46 and 47. The proponent's proposed strategy for addressing offsets includes obtaining some offsets from private land sites registered with the Native Vegetation Credit Register. Further credits would also be needed for Leadbeater's Possum, Smoky Mouse, Fairy Lanterns and Wavy Fork-moss, for which the proponent is proposing to establish new offset sites, two on private and one on crown land. Further assessment is required to confirm the suitability of these.

The IAC recommended that Clause 9.3 be removed from the Incorporated Document, noting the uncertainty on meeting species specific offset requirements, and that offsets need to be secured before removal of vegetation occurs. This clause was proposed to enable variation to the timing for evidence that offsets had been secured. I support the IAC's view that evidence of offsets is needed prior to the removal of native vegetation as per the Guidelines, particularly given the significance of the vegetation to be removed. This will ensure offsets are sufficient to meet the species habitat units required.

I note that the exhibited incorporated document did not include a requirement to provide information consistent with the application requirements of the DELWP Guidelines for the Removal, Destruction or Lopping of Native Vegetation. I therefore recommend adding to Clause 10.1 of the incorporated document the following requirement: "Before the removal of native vegetation, details of the proposed removal of native vegetation necessary for the construction of the Project must be prepared in accordance with the application requirements in the Guidelines to the satisfaction of the Secretary."

Listed ecological communities

As described above, two FFG Act-listed threatened communities – Cool Temperate Rainforest and Cool Temperate Mixed Forest – occur within the project area, which are synonymous with the Cool Temperate Rainforest EVC (EVC 31). The trail network including Trail 1 would impact about three times the amount of Cool Temperate Rainforest community and twice the amount of Cool Temperate Mixed Forest (Table 3) as the network that includes Trails 45, 46 and 47. Whilst the IAC report states that Trail 5 also intersects areas of Cool Temperate Rainforest and Cool Temperate Mixed Forest, these communities were not mapped along this trail.

Table 3 Predicted maximum loss of threatened ecological communities

Community (conservation status)	Area to be removed /length of trail to intersect	
FFG Act listed community	With Trail 1	With Trails 45, 46 and 47
Cool Temperate Rainforest (threatened)	0.35 ha/ 1.870 km	0.131 ha/ 0.616 km
Cool Temperate Mixed Forest (threatened)	0.706 ha/ 4.572 km	0.373 ha/ 2.435 km
Total	**1.053 ha/ 6.442 km**	**0.504 ha/ 3.051 km**

The EES describes the southern area of the network, where the trails are located within the state forest, as only containing only a small area of Cool Temperate Mixed Forest (along Trail 50) and very few Myrtle Beech trees. This is due to both current environmental conditions and the historical logging of the forest (Technical Report A).

The IAC noted evidence from submitters and experts including those from Parks Victoria, Friends of the Myrtle Beeches and the Victorian National Park's Association emphasising the very high significance of Cool Temperate Rainforest and Cool Temperate Mixed Forest communities within the project area, particularly in light of the significant impacts to rainforest communities across Victoria following the 2019/20 Black Summer bushfires and their habitat value for specific, significant species. The IAC recognised that these communities provide unique habitat compared to other areas of these ecological communities elsewhere in the state and their removal would be of greater significance than the proportional removal would indicate. I agree with this and consider that the removal and indirect impact from proposed trails would be very significant given the relative value to the state of these stands of the two threatened communities.

Evidence was presented to the IAC by Parks Victoria, the Victorian National Parks Association and Friends for the Myrtle Beeches that Myrtle Beech trees are a critical component of the Cool Temperate Rainforest and Cool Temperate Mixed Forest communities. Risks to Myrtle Beeches trees and Cool Temperate Rainforest and Cool Temperate Mixed Forest communities from Myrtle Wilt and *Phytophthora cinnamomi* are discussed in the section below.

Myrtle Wilt and Phytophthora

The potential for Myrtle Wilt to reduce the extent and quality of Cool Temperate Rainforest and Cool Temperate Mixed Forest was identified as a very high risk by the IAC. Human activity which results in artificially elevated or epidemic levels of Myrtle Wilt within *Nothofagus*-dominated Cool Temperate Rainforest is listed as a potentially threatening process under the FFG Act. The EES describes that this fatal disease, caused by the fungal pathogen *Chalara australis,* infects mature Myrtle Beech *Nothofagus cunninghamii* and is responsible for the deaths of large numbers of mature Myrtle Beech trees in some parts of Victoria. The pathogen spreads through air and water-borne spores, infecting Myrtle Beech through wounds to stems or roots then, spreading throughout stands of the species by underground root grafts (Technical Report A). The EES describes that any human activity is known to exacerbate the spread of the disease relative to natural levels in undisturbed forest, due to the increased potential for wounding of trees. Myrtle Wilt was not found within the portion of the project areas that are within the national park during the EES assessment.

The spread of *Phytophthora cinnamomi* from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority is listed as a potential threatening process under the FFG Act. This EES describes that Phytophthora is a soil-born pathogen which can infect and kill a large number of native plant species. The EES states that it has not been recorded in the Yarra Ranges National Park, however it has been recorded between Sugarloaf Dam and Glenburn to the north of the project area (Technical Report A).

The EES identified the potential for construction activities to impact the extent and/or quality of Cool Temperate Rainforest and Cool Temperate Mixed Forest as a very high risk, including through the infection of Myrtle Beech with Myrtle Wilt (Technical Report A). The proponent's expert stated to the IAC that the likelihood of Myrtle Wilt infection was "almost certain". The EES identified that wounding of Myrtle Beech trees could occur during construction, the operation phase and maintenance activities for the project.

The IAC considered evidence from Parks Victoria, experts representing the Victorian National Parks Association and Friends for the Myrtle Beeches, regarding the critical role Myrtle Beech plays as a component of the Cool Temperate Rainforest and Cool Temperate Mixed Forest communities. The evidence confirmed that if Myrtle Wilt spread into the project area it would result in a very high impact on these significant and threatened vegetation communities. The submitters detailed concerns that track formation and use by cyclists could damage trees and introduce Myrtle Wilt. Additionally, the submitters provided evidence that Phytophthora spores could be introduced to the national park on bike wheels and spread readily due to the wet and damp conditions prevailing within these vegetation communities. Evidence noted that if this occurred it would exacerbate the effects of Myrtle Wilt across this area, including pristine areas of these threatened communities.

The Victorian National Parks Association's expert provided evidence that in addition to being a key species in Cool Temperate Rainforest and Cool Temperate Mixed Forest, Myrtle Beech trees on Mount Donna Buang occur within Wet and Montane Wet Forest EVCs in the project area. Evidence noted these trees could provide stepping stones for Myrtle Wilt to spread between areas of rainforest and considered that trails should be re-routed to avoid all Myrtle Beech trees. The IAC noted that the mapping within the EES is limited to the areas of proposed trail alignments, making it difficult to assess the risk of Myrtle Wilt infection moving from stepping stone Myrtle Beech trees along the trail into patches of Cool Temperate Rainforest or Cool Temperate Mixed Forest in proximity to the trails. The IAC recommended the addition of a new mitigation measure (BM39B) to be added to the CEMP to manage the risk of Myrtle Wilt spreading from individual trees to nearby stands of the threatened communities. I support the addition of this mitigation measure.

The EES describes proposed methods to minimise the threat posed by Myrtle Wilt. These include hand constructing trails in Cool Temperate Rainforest and Cool Temperate Mixed Forest where Myrtle Beech occur; treating any Myrtle Beech trees wounded during construction with fungicide and monitoring afterwards; and ensuring pruning of tree branches of this species is undertaken with the supervision and/or instruction of an arborist. Additional mitigation measures include avoiding all works within the drip-line of Myrtle Beech trees and where this cannot be avoided, using an engineered solution.

Despite these mitigation measures, the residual risk as presented in the EES remains very high (Technical Report A). Submitters suggested that roots of Myrtle Beeches may extend beyond the drip-line and that the buffer should extend either a few metres beyond the drip line or else physical barriers would be required. The effectiveness and appropriateness of wound treatment with fungicide was also debated during the hearing, including between the proponent's expert and peer reviewer.

Mitigation measures for Phytophthora outlined in the EES (Technical Report A) include the provision of bike washdown stations at trail heads. The Victorian National Parks Association submitted that the effectiveness of this measure was dependent on compliance by trail users and there was a high risk of some trail users not using the bike washes, and it therefore being an unreliable mitigation of this risk. The proponent provided anecdotal evidence from Dorset Council in Tasmania (the proponent for the Blue Derby Trail Network) that no dieback of tree species had been experienced for their trail network. The IAC considered that specific environmental factors in that location may contribute to that site not experiencing pathogen outbreaks and did not place significant weight on that evidence. I agree with the IAC and consider one anecdotal example is not sufficient evidence to discount the pathogen risk for this project.

The IAC concluded that there is potential for significant effects on areas of Cool Temperate Rainforest and Cool Temperate Mixed Forest from the spread of pathogens, particularly Myrtle wilt and Phytophthora, with insufficient certainty that mitigation measures would reduce either the risk or the impacts to acceptable levels. For this reason, the IAC concluded that Trails 1, 45, 46 and 47 pose an unacceptable risk of significant impacts and these trails should be removed from the project. I agree with the IAC's conclusion regarding these impacts and consider that Trails 1, 45, 46 and 47 pose an unacceptably high risk to important areas of Cool Temperate Rainforest and Cool Temperate Mixed Forest. These areas of the threatened communities are of state importance, with some pristine conditions, and therefore the proposed trails should not proceed through these areas.

The IAC considered that if provided mitigation measures, including their additions, were implemented, the remainder of the project would not have a significant impact on Cool Temperate Rainforest or Cool Temperate Mixed Forest. I agree with this assessment and consider that without Trails 1, 45, 46 and 47, the project is not expected to have a significant impact on these ecological communities, provided the mitigation measures and my recommendations are implemented.

However, as identified in the EES, Trail 50 in the state forest intersects a small area of Cool Temperate Mixed Forest community at the headwater of Calder Creek. Despite the absence of evidence or submissions regarding potential impacts on this patch of Cool Temperate Mixed Forest, clearly the introduction of Myrtle Wilt in these areas would impact this stand of this ecologically significant

community. I therefore consider the residual risk of Myrtle Wilt introduction in this area to be sufficient to warrant further mitigation. Elevated structures are proposed in the EES for all waterway crossings, including at the headwater of Calder Creek, so I recommend the elevated trail structure at this location be extended through the area of Cool Temperate Mixed Forest intersected by Trail 50 (i.e. for approximately 40m). This should be constructed in a manner that avoids damage to any Myrtle Beech trees and drip-lines. The risk to this small area of Cool Temperate Mixed Forest can be acceptably managed with the adoption of my recommendations.

Threatened species

Adequacy of surveys, habitat mapping and micro-siting protocols for threatened species

As discussed in further detail in Section 6.8 of my assessment targeted surveys and detailed habitat assessments were undertaken for a few of the threatened species, i.e. those considered likely to occur within the project area. Habitat maps provided in the EES are rather coarse and based largely on DELWP's modelled habitat importance maps.

The IAC considered that the assessment for significant flora and fauna species was adequate for the EES, given the presence of species was assumed for those with habitat potentially present. However, the IAC recommended that seasonally appropriate pre-construction surveys should be undertaken for all the trails to be constructed, which was included in new mitigation measure BM02A. The adequacy of the EES surveys for threatened species was challenged in a submission by Parks Victoria, which stated that detailed surveys had not been undertaken to inform the potential extent of impacts on cryptic threatened plant species, threatened fauna species and their habitats. The peer reviewer informed the IAC that it was important to undertake seasonally appropriate surveys of the entire length of the trail and maintained that these surveys could be undertaken during micro-siting, provided they were seasonally appropriate. The proponent's expert considered that targeted surveys had a high risk of providing false negatives. He argued that survey effort for the EES did not occur where impacts would be minimal or indirect and thus deficiencies could be mitigated through measures such as micro-siting. Without knowledge of where cryptic or seasonally detectable threatened species occur, it will be difficult to avoid them during micro-siting.

I consider targeted surveys for likely threatened species are best practice and required for most projects likely to significantly impact on these values (consistent with state and commonwealth guidelines). There were practical difficulties however of repeatedly accessing the project area for targeted surveys, given the combined length of all trails presented in the EES and the terrain's ruggedness and density of vegetation. Detailed threatened species habitat mapping along the trail network would have informed an improved assessment of impacts for the EES and enabled further avoidance of habitat through trail realignment and micro-siting.

I support the IAC's recommendation that pre-construction surveys, as included in BM02A are the best practice approach, but noting they are unlikely to be required for threatened species where the species or their habitat can be readily identified by a suitably qualified and independent ecologist during micro-siting. I recommend that targeted surveys for the remaining trails be undertaken for those species which have the highest risk of population impacts in the absence of any survey. The approach is to be determined in consultation with and to the satisfaction of DELWP[5], to inform and improve avoidance during micro-siting. These may be undertaken during micro-siting, where seasonally appropriate. I also note that land managers may have additional requirements for the survey of threatened species as conditions of their secondary consents and approvals.

The IAC considered that micro-siting will avoid some but not all significant environmental values and made amendments to BM01 and BM02A to strengthen the micro-siting protocols to improve avoidance measures. This included the requirement that a suitably qualified, independent ecologist is present during all micro-siting in sensitive areas. I recommend BM01 is amended to require that the suitability qualified,

[5] Specifically, the DELWP Region (Regional Director Port Phillip Region (or delegate))

independent ecologist be present during micro-siting along the entire trail network, to help ensure impacts on threatened flora and fauna are further avoided and minimised. The IAC agreed with the peer reviewer that clear guidance, in the form of a pre-determined hierarchy of values, should be developed to assist the decision-makers involved in micro-siting. I agree with these amendments, with the addition that the hierarchy of values is to be developed in consultation with and to the satisfaction of DELWP[6].

Listed threatened flora

The EES identified 45 state and nationally significant flora species listed under the EPBC Act and/or FFG Act as having a medium or greater likelihood of occurrence within the project area. The large number of species reflects the high biodiversity value of habitat within the project area. No targeted surveys were undertaken for any of these species and detailed habitat mapping was not undertaken for most of the species. Impacts on the EPBC Act listed species below (which are also listed under the FFG Act) are discussed in detail in Section 6.8 of my assessment:

- Tall Astelia *Astelia Australiana*; and
- Round-leaf Pomaderris *Pomaderris vacciniifolia*.

The project is not expected to have a significant impact on either of the species listed above.

A further 43 flora species listed under the FFG Act were either recorded or were predicted to have a likelihood of occurrence of medium or higher within the project area (see Table 17 in Technical Report A). Impacts on these species are summarised below. Given the large number of threatened flora species likely to be present my assessment has focussed on those with the greatest risk of high impacts. I note habitat removal impacts to some of these species are likely to be offset through specific habitat units.

Cryptic, small and highly seasonal species

Many flora species including some cryptogram species (mosses, liverworts, fungi and lichens), orchids, herbs and graminoids are extremely difficult to detect for a range of reasons. Some species such as orchids and Fairy Lanterns only have above-ground parts during certain seasons and may not flower every year. Other species may be very small and/or difficult to identify without detailed surveys. Targeted and repeated surveys, at the appropriate time of year, by experienced botanists would be required to determine the locations of these species with confidence.

Micro-siting is proposed as the main mitigation measure to avoid impacts on these species. I consider this measure will reduce risks to these species, provided an independent, qualified ecologist is present during micro-siting as recommended by the IAC. Without targeted surveys for some of these species I consider the project has the potential for large population effects, particularly for species which may occur as dense populations over a relatively small extent (e.g. orchids). My recommendation for targeted surveys to be undertaken for those species that have the highest risk of population impacts without survey will increase the effectiveness of micro-siting to avoid these species. These may be undertaken during micro-siting, where seasonally appropriate.

The EES states that impacts on cryptograms will be minimised by retaining and sensitively relocating the habitat substrate on which they are growing (e.g. rocks and logs), with trail construction crews to be educated by a project ecologist in the relocation of these substrates. Whilst I accept this approach will reduce impacts on these species, I note that it may be difficult to ensure that cryptograms are relocated into suitable microhabitats. I recommend that micro-siting preferentially seek to avoid, rather than relocate these species wherever possible and that the avoidance approach for cryptograms be added to the micro-siting hierarchy, discussed above.

Shrubs, trees and ferns

The EES states that impacts on threatened shrub and fern species which occur at discrete locations will be minimised through inclusion in the trail micro-siting protocol. The EES states many of these are readily

[6] Specifically, the DELWP Region (Regional Director Port Phillip Region (or delegate))

identifiable by a qualified ecologist. Threatened shrubs species which are widespread and dominant in the understory will need to be removed in some areas along the trail alignment. I consider micro-siting will reduce risks to these species to acceptable levels, provided an independent, qualified ecologist is present during micro-siting along the entire network as I have recommended above.

The EES states that residual impacts on threatened trees species are likely to be negligible, as no tree removal is proposed for trail construction and trail construction is unlikely to impact on the health of these trees (Technical Report A). However, following the advice of the peer reviewer, the IAC added a recommended mitigation measure to the EMF (BM63A) to require hand construction of trails the vicinity of Tree Geebung *Persoonia arbore*. I agree with this recommendation and consider with the proposed and amended mitigation the project is unlikely to have significant impacts on threatened tree species.

Listed threatened fauna

The EES identified 27 state and nationally significant fauna species listed under the EPBC Act and/or FFG Act which have been recorded or are considered to have a medium or higher likelihood of occurrence within the project area. The large number of species reflects the high biodiversity value of habitat within the project area. Targeted surveys were not undertaken for most of these species and detailed habitat mapping was not undertaken for many of the species. Impacts on the EPBC Act listed species below (which are also listed under the FFG Act) are discussed in detail in Section 6.8 of my assessment:

- Leadbeater's Possum *Gymnobelideus leadbeateri*;
- Swift Parrot *Lathamus discolor*;
- Spot-tailed Quoll Dasyurus *maculatus maculatus*;
- Smoky Mouse *Pseudomys fumeus*;
- Southern Brown Bandicoot *Isoodon obesulus obesulus*;
- Macquarie Perch *Macquaria australasica*;
- White-throated Needletail *Hirundapus caudacutus*;
- Southern Greater Glider *Petauroides volans*;
- Broad-toothed Rat *Mastacomys fuscus mordicus*;
- Grey-headed Flying-fox *Pteropus poliocephalus*;
- Australian Grayling *Prototroctes maraena*; and
- Murray Cod *Maccullochella peelii*.

The project is not likely to have a significant impact on any of the species listed above. I consider that the removal of Trails 1, 45, 46 and 47 (as proposed in the EES) will further reduce residual impacts on the Leadbeater's Possum by avoiding the areas of highest quality habitat for the species, closer to the summit of Mount Donna Buang. This is a further reason for my conclusions on Trails 1, 45, 46 and 47 set out above and in section 4 of this assessment.

The EES describes other residual impacts from trail operation and maintenance on the Leadbeater's Possum. The IAC considered that strategies to minimise indirect impacts like noise (such as BM73) and other disturbance during construction and operation, should be effective to minimise impacts on Leadbeater's Possum. I note however, that policing of riding in the national park at night would be very difficult to enforce and it is likely that it would still occur to some degree. Removal of Trails 1, 45, 46 and 47 from the project would greatly reduce the potential for night disturbance impacts in the most significant and highest quality Leadbeater's Possum habitat.

Areas of potential impact from night riding also include areas in the state forest where Leadbeater's Possum is known, or likely to occur, such as near Trails 49 and 50. While night riding could be prohibited in these trails within the southern part of the trail network, doing so for only selected trails within the state forest would also be very difficult to police. Permitting night riding in some portions of the trail network is also likely to result in confusion for riders and in turn reduce the effectiveness of mitigation of potential impacts of night riding on the Leadbeater's Possum. Therefore, I recommend a consistent approach be implemented, that prohibits night riding across the project's entire trail network.

A further 15 species listed under the FFG Act were either recorded or predicted to have a likelihood of occurrence of medium or higher within the project area (see Table 24 in Technical Report A). Given the large number of threatened fauna species likely to be present I have focussed on those with the greatest risk of high impacts in my discussion below. I note impacts to habitat for some of these species are likely to be offset through specific habitat units.

Mount Donna Buang Wingless Stonefly *Riekoperla darlingtoni*

The Mount Donna Buang Wingless Stonefly is listed as critically endangered under the FFG Act. The EES Technical Report A describes that the species occurs near the summit of Mount Donna Buang in slow-flowing springs, soaks and trickles. Surveys were undertaken for the project and detected the species in headwater streams between Mount Donna Buang and Mount Victoria (Appendix 10 of Technical Report A). Existing and new records for the species occur in close proximity to the northern half of Trails 1, 45 and 46. Habitat mapping for the species, undertaken and published[7] by the species expert Mr Eddie Tsyrlin, maps potential habitat for the species as also occurring in the vicinity of Trail 47 (Tabled Document 102).

The IAC considered evidence from the Entomological Society of Victoria and Mr Tsyrlin that the Mount Donna Buang Wingless Stonefly is sensitive to minor habitat disturbances. This is due to its extremely limited distribution and specific habitat requirements of seeps and trickles which means the entire known population occurs near Mount Donna Buang in the Yarra Ranges National Park. Mr Tsyrlin provided evidence that population numbers have undergone severe reductions (over 90 percent at known locations) since surveys undertaken in 2005. The species is currently under nomination to be listed as critically endangered under the EPBC Act, based on its recent Victorian assessment under the FFG Act. The IAC accepted that the species is highly sensitive to potential effects and that all populations of the species are important, to the extent that a significant impact on any of the populations could contribute to the risk of extinction for the species. I agree with the IAC's assessment.

The EES (Technical Report A) identifies that whilst Trails 1, 45 and 46 do not cross any well-defined headwater streams, there is a risk that minor hydrological changes and soil disturbance could cause sedimentation of soaks and trickles immediately downstream. The EES notes that Mount Donna Buang Wingless Stonefly is sensitive to soil and hydrological disturbance and that there could be residual impacts from construction and operation on the species. Other risks to the species during operation and maintenance identified in the EES include contamination from chemicals or other pollutants, disturbance of habitat from off trail trampling, and increased sedimentation resulting from increased traffic on the unsealed sections of Donna Buang Road.

The EES proposed methods to minimise impacts on Mount Donna Buang Wingless Stonefly and its habitat. These include micro-siting trails as far away from suitable habitat as possible, sediment control measures, restricting chemical use in known habitat, the construction of elevated structures in headwater habitats, seasonal closure of trails and after extreme rainfall events within Yarra Ranges National Park and support for ongoing monitoring and adaptive management (Technical Report A).

When questioned by the IAC and the proponent team, Mr Tsyrlin was uncertain as to whether mitigation measures (including BM61A and BM56) would be effective in avoiding significant effects as the measures were aimed at minimising, rather than eliminating effects and the thresholds for impacts on Mount Donna Buang Wingless Stonefly are unknown. He was unsure if adaptive management would be effective, given the species' vulnerability to small changes in conditions. The IAC considered that due to the sensitivity of the species and unknown thresholds for impact, there is uncertainty as to whether the proposed mitigation measures will appropriately mitigate significant effects. I agree with this assessment.

The IAC considered that it is unlikely that any trails other than Trails 1, 45 and 46 traverse known or suitable habitat for the Mount Donna Buang Wingless Stonefly. However, I note that the published mapping on which Figure 6 in the IAC report appears to be based, includes potential habitat in the vicinity of trail 47

[7] Tsyrlin, E., Robinson, K., Hoffmann, A. *et al.* 2022. Climate warming threatens critically endangered wingless stonefly *Riekoperla darlingtoni* (Illies, 1968) (Plecoptera: Gripopterygidae). *J Insect Conserv* **26,** 59–68.

(Tabled Document 102). In the published article it is stated that "Due to funding limitations, only the western part of the potential species range has been explored. Suitable habitat is likely to also occur up to 4 km north and south-east of Mount Donna Buang". I therefore consider that habitat for Mount Donna Buang Wingless Stonefly may also occur along Trail 47.

The Victorian National Parks Association submitted that it is considers Trails 5, 6 and 8 to be unacceptable because intersect with Mount Donna Buang Wingless Stonefly habitat. Whilst the IAC stated that it did not receive any evidence from Mr Tsyrlin which confirmed this, it noted that these trails were outside of his scope of evidence. I note that the mapping of suitable habitat (Figure 6 in the IAC report) does include the top sections of these trails close to Donna Buang Road and on this basis consider that these sections of Trails 5, 6 and 8 may also contain suitable habitat for the species. If these trails are to proceed, I recommend that targeted surveys are undertaken for the species in suitable habitat in these locations and any confirmed habitat must be avoided through the implementation of no-go zones (discussed below) and micro-siting.

The IAC considered that the implementation of no-go zones, including known locations of Mount Donna Buang Wingless Stonefly populations and areas of suitable habitat, would be the most appropriate measure to prevent or minimise impacts on the species. The IAC stated that all project activities should be avoided in no-go zones. The IAC considered that these no-go zones would most likely be applicable to Trails 1, 45 and 46 (where the species has been detected) and possibly Trail 47 (where suitable habitat is mapped). On this assumption, the IAC recommended that if their overall recommendation to remove Trails 1, 45, 46 and 47 from the project was not accepted, that mitigation measure SWM07 should be modified to require a suitably qualified independent Mount Donna Buang Wingless Stonefly expert to map no-go zones that include known locations and suitable habitat. The proposed modifications to SWM07 include trails needing to be aligned to avoid the no-go zones and project activities being avoided within these areas. I agree with these recommended changes to SWM07 and consider that this mitigation measure should also apply to the upper sections of Trails 5, 6 and 8.

Overall, the IAC concluded that mitigation measures proposed for the Mount Donna Buang Stonefly may not be sufficient to reduce impacts to acceptable levels. The IAC did not support any project activities, including trails, within or adjacent to known or suitable habitat for the species and recommended that no-go zones be applied to these areas. As noted above, habitat for this species would be avoided with the removal of Trails 1, 45, 46 and 47 from the project, which the IAC also recommended to eliminate risk of significant impacts to Cool Temperate Rainforest and Cool Temperate Mixed Forest. I agree with the IAC that unacceptable risks to the species remain if Trails 1, 45, 46 and 47 are implemented as proposed in the EES.

In the event these trails were not removed from the project, the IAC recommended changes to mitigation measures SWM02, SWM07, SWM07, BM61A, BM61B and a new mitigation measure BM61C. I also consider that the IAC's recommended changes to the mitigation measures should be applied for Trails 5, 6 and 8 in any sections mapped as potential habitat for Mount Donna Buang Stonefly. Provided Trails 1, 45, 46 and 47, as proposed in the EES, are not implemented and the mitigation measures are applied for Trails 5, 6 and 8, I consider impacts to Mount Donna Buang Stonefly are manageable and acceptable.

Hollow-dependent threatened fauna

A number of these species including Barking Owl, Powerful Owl, Masked Owl, Sooty Owl, Brush-tailed Phascogale and Lace Monitor are dependent on large and/or hollow-bearing trees for roosting, nesting and shelter. These species forage within forest and woodland areas. The EES (Technical Report A) states that trees are not proposed to be removed during trail construction and that if trees are identified as being hazardous they will be inspected by an ecologist, land manager and arborist prior to any pruning or removal.

Trees which are identified during pre-construction micro-siting as being potential owl roosting or nesting sites are proposed to be documented and avoided. Mitigation measures which prevent impacts on arboreal

and understory habitats and the impacts of introduced pests on common fauna will ensure that populations of prey for these species are not impacted. I consider that provided these mitigation measures are implemented, the project is unlikely to have a significant impact on these species.

Burrowing Crayfish

Curve-tail Burrowing Crayfish and Tubercle Burrowing Crayfish may occur within damp and occasionally inundated areas within the project area where they form burrows. The burrows of Curve-tail Burrowing Crayfish are always in association with the water table, whilst the burrows of Tubercle Burrowing Crayfish are often independent of the water table. Section 9.7.2 of Technical report A recommended measures to reduce impacts on these species and their habitats. The IAC noted that some of these mitigation measures had not been included in the CEMP. The IAC recommended an amendment to BM37 around the timing of construction at waterways and a new mitigation measure BM39A to ensure that measures to prevent impacts on burrowing crayfish are implemented. The presence of an independent, qualified ecologist during micro-siting will further reduce impacts on these species. Provided these mitigation measures are implemented I consider the project is unlikely to have a significant impact on these species.

Platypus

The EES describes the permanent and semi-permanent waterbodies that are suitable for Platypus, which are proposed to be crossed by trails on the lower slopes of Yarra Ranges National Park (e.g. Frenchmans Creek, Kennedy Creek, McKenzie Creek, Dee River, Walker Creek, Stockdales Creek, Dirty Gully Creek, Ythan Creek and Rocky Creek). It also identified the proposed crossing of the Yarra River (Technical Report A). The EES describes potential impacts to Platypus and habitat values as being avoided, by minimising impacts to stream banks through the installation of bridge crossings and structures. The location of crossings will be micro-sited based on habitat assessments undertaken by a qualified zoologist. Provided that these measures are implemented, together with other mitigation measures to prevent the impacts of sedimentation on waterways, I consider the project will not have a significant impact on Platypus.

Disturbance impacts

The EES identified that potential disturbance impacts for biodiversity associated with the project during construction and operation include sedimentation, habitat fragmentation, disturbance of fauna including from night riding, noise and vibration, introduction of weeds and pathogens, pollution of waterways as a result of litter, leaks or spills and disturbance of fauna associated with increased bicycle and pedestrian traffic. Trail use and maintenance in proximity to waterways could also result in sedimentation or disrupt natural flow paths, with potential impacts on aquatic fauna. The EES stated that the majority of these impacts could be avoided and minimised through mitigation measures. Key relevant mitigation measures include sensitive trail maintenance, hygiene practices including bike and equipment wash downs, monitoring programs, sediment control measures, trail use guidelines and appropriate signage and support of existing pest and weed control programs.

The EES identified that habitat fragmentation has the potential to impact on habitat condition and may impact on species due to barrier effects, genetic isolation and edge effects. The EES assessed that the project would result in localised edge effects but was unlikely to result significant barrier effects or reduced gene flow between populations due to the narrow nature of the construction footprint and trails within a heavily forested landscape. The IAC stated that whilst operation of the project is likely to have indirect effects on habitat, including modelled habitat for over 67 rare or threatened species, the impacts will likely be relatively localised at the trail edge. The IAC further noted that the magnitude of impacts would vary depending on the location of the trail in relation to other disturbances and the sensitivity of specific species.

Night riding would result in disturbance impacts to nocturnal species, particularly those which are shy and known to avoid humans. The main species affected would likely be Leadbeater's Possum, as the species occurs in the area, is known to be shy and demonstrates behavioural avoidance of humans. Greater Glider, also known to occur in the area, may also experience disturbance but is less likely to be impacted as it

freezes, rather than hides, when disturbed and forages much higher in the tree canopy. Ground-dwelling threatened fauna which may be disturbed are assessed by the EES as having a moderate likelihood of occurrence within the project area and are therefore less likely to be disturbed or impacted by night riding than those known to be present. As discussed above, the areas of greatest potential impact from night riding are those where Leadbeater's Possum is known, or likely to, occur. Areas of known occupancy by the species occur within both the national park and the state forest (e.g. near Trails 49 and 50). However, as targeted surveys have not been undertaken for Leadbeater's Possum, the EES appropriately assumed that the species could occur anywhere throughout the trail network.

Mitigation measure BM73 was proposed in the EES, to help ensure there will be no use of trail infrastructure within the Yarra Ranges National Park at night. However, as noted above I recommend that BM73 is amended to require that no night riding in either the national park or state forest. A blanket prohibition of night riding across the entire trail network will help minimise disturbance impacts for all nocturnal species.

The IAC stated that the project disturbance effects of most concern were those related to weeds, pathogens, pests and rubbish. The EES identified three pathogens that occur, or that have the potential to occur or infect sensitive species within the project area; Myrtle Wilt, Phytophthora and Chytrid Fungus. Myrtle Wilt and Phytophthora are discussed in further detail above. The EES assessed that Chytrid Fungus is likely to already occur within the project area, however assessed that no susceptible threatened frog populations occur within the project area.

The IAC considered many submissions that raised concern about the effectiveness of management measures for pathogens, weeds and pests, including the potential risks associated with using control measures such as herbicides in high habitat value areas. Whilst the EES stated that approximately 45% of the proposed trails would occur within 100 metres of an existing road, trail or track, the IAC noted that the project will open some currently undisturbed and indeed pristine areas of habitat to weed, pest and pathogen risks. The IAC concluded that weeds, pest animals and to some extent, pathogens, are existing issues in the project area and that the project will exacerbate some of these issues to some degree. The IAC supported the conclusion of the EES that this was the most notable cumulative effect of the project. I agree with this assessment.

The IAC proposed a minor change to mitigation measure BM27 to specify that user education should also be provided on why washdown facilities are so important and how they must be used. I support this recommendation. The IAC also recommended that the proponent's update to mitigation measure BM67 be removed and that BM67 should be adopted as exhibited. I agree with this recommendation. BM67 aims to minimise removal of native vegetation during construction, however the proponent's proposed amendment to BM67 following exhibition was not consistent with the aim of this measure.

The IAC concluded that the effectiveness of mitigation measures for pathogens, weeds and pests would depend on the sensitivities of environmental values at risk. However, with the exception of residual impacts associated with Myrtle Wilt (as discussed earlier in this section), the IAC had no evidence that impacts associated with other weeds, pests and pathogens wouldn't be acceptably managed by mitigation measures (amended as per the IAC recommendations).

The EES proposes to mitigate impacts of invasive fauna by working with relevant land managers to support existing pest animal programs for the life of the project (mitigation measure BM20). The EES has not provided any details on the level of financial or other support that would be provided by the proponent. I recommend that firm commitments to the types and level of support for pest management programs forms part of the formal agreement with landholders. I consider this mitigation measure to be acceptable to reduce potential impacts from introduced pests on biodiversity values, provided the proponent's commitments are sufficient to satisfy land managers and regulators that introduced pests can be managed to at least current levels.

The IAC questioned the proponent during the hearing about whether consideration had been given to the need for a safety fence at Warburton Golf Course, and the potential effect of a fence on local fauna. Council

responded that if a fence was required, it would be low-level and designed and sited in collaboration with the project ecologist, as well as in consultation with the Golf Course Committee. The IAC noted that if this fence was required it could have impacts on fauna movement or mortality. As the impacts of a golf course fence on fauna have not been assessed in the EES, I agree with the IAC's recommendation for the Minister or delegate to have oversight over approval of the fence, if required, via the Development Plans under Clause 6.1 of the proposed incorporated document.

The IAC concluded that except for Trails 1, 45, 46 and 47 which they recommended for removal, there was no evidence to suggest that the project will have an unacceptable impact on habitats through disturbance effects, following the implementation of proposed mitigation measures including amendments recommended by the IAC. I support this conclusion, with the addition of prohibiting night riding across the entire trail network to minimise risk of potential impacts from night riding on sensitive nocturnal species.

Assessment

Through its development of the project and the EES the proponent has sought to avoid and minimise impacts on biodiversity values both within and outside the Yarra Ranges National Park through conducting technical studies, consultations with relevant stakeholders, and developing numerous mitigation measures to be implemented during both construction and operations. However, the project as proposed in the EES would have resulted in notable impacts and risks for some significant biodiversity and habitat values, including some significant risks to important conservation values in the national park.

I support the view of the IAC that Trails 1, 45, 46 and 47 proposed in the EES, would result in an unacceptable risk of significant impacts on significant stands of Cool Temperate Rainforest and Cool Temperate Mixed Forest, as well as for the Mount Donna Buang Wingless Stonefly, which are of high conservation value to the state. It is therefore my assessment that Trails 1, 45, 46 and 47 not be implemented. This also significantly reduces the project's potential impact on other biodiversity values in the Yarra Ranges National Park, notably reducing potential project impacts on the critically endangered Leadbeater's Possum by avoiding trails near areas of the highest quality habitat for the species.

I support the IAC's proposed amendments to the mitigation measures for biodiversity and habitats in the Final Hearing Version of the EMF, which will inform the final CEMP and OEMP for the project.

My assessment also recommends the following key amendments to IAC's recommendations:

- Amendment to the incorporated document to include a requirement to provide information consistent with the application requirements of the DELWP Guidelines for the Removal, Destruction or Lopping of Native Vegetation.
- While comprehensive pre-construction targeted surveys are not required for all threatened species, I recommend targeted surveys be undertaken for those species which have the highest risk of population impacts without survey occurring – this will inform avoidance during design and micro-siting of trails. These targeted surveys may be undertaken during micro-siting, where seasonally appropriate. The approach to these surveys is to be determined in consultation with and to the satisfaction of DELWP[7].
- The micro-siting approach should be strengthened to require that a qualified, independent ecologist is present during all micro-siting to help ensure impacts on threatened flora and fauna are further avoided and minimised where possible.
- I do not support the IAC's recommendation that the hazardous tree assessment include an assessment of the frequency of tree lopping or removal of trees likely to be required across the operation phase of the project, as this is not practical and not supported by the relevant regulations. However, I recommend hazardous tree assessment reports are prepared for each progressive stage of the project to the satisfaction of the DELWP[8] for trails outside the Yarra Ranges National Park, and to the satisfaction of Parks Victoria for trails within Yarra Ranges National Park.

[8] Specifically, the DELWP Region (Regional Director Port Phillip Region (or delegate))

- The IAC's recommended changes to SWM07 should also apply to the upper sections of Trails 5, 6 and 8, to assist in avoiding and minimising impacts on the Mount Donna Buang Wingless Stonefly.
- In order to avoid the introduction of Myrtle Wilt in the area of Cool Temperate Mixed Forest near Trail 50, the elevated trail structure already planned at Calder Creek needs to be extended through the area of Cool Temperate Mixed Forest intersected by this trail and be completed in a manner that avoids damage to any Myrtle Beech trees and drip-lines.
- To reduce confusion and improve the effectiveness of mitigation of potential impacts of night riding on sensitive nocturnal species, particularly the Leadbeater's Possum, I recommend a consistent approach be implemented that strictly prohibits night riding across the project's entire trail network.

Except for Trails 1, 45, 46 and 47 as highlighted above, my assessment is that the other predicted biodiversity and habitat effects of the project are acceptable if managed appropriately through implementation of the proposed mitigation measures, incorporating amendments proposed by the IAC and modified consistent with this assessment. I acknowledge the importance of the project effectively implementing further opportunities to reduce residual impact for biodiversity values during project design and construction, including through appropriate targeted surveys, mitigation measures and the proposed micro-siting procedure for the final trail alignments.

The final incorporated document submitted for approval will need to take account of this assessment and in doing set in place conditions that help ensure the narrowing of areas where works and impacts on biodiversity values are permitted to occur. It is appropriate that further avoidance and minimisation of impacts be required through the final planning controls put in place for this project. The proposed requirement for an approved CEMP and approved development plans, with detailed trail alignments, is necessary to give effect to the appropriate micro-siting and mitigation of residual impacts.

I acknowledge that recommendations of this assessment regarding Trails 1, 45, 46 and 47 may result in the need for changes to some other parts of the project to adapt to a modified trail network. For example, the proposed trail head at the summit of Mount Donna Buang may no longer be required for the project.

My assessment in relation to MNES is provided in Section 6.8.

6.2 Surface, groundwater and geotechnical hazards

Evaluation objective

Maintain the functions and values of groundwater, surface water and floodplain environments and minimise effects on water quality and beneficial uses.

Assessment context

Surface, groundwater and geotechnical impacts are addressed in Chapter 9 of the EES and Appendix B (the Surface Water, Groundwater and Geotechnical Report prepared by GHD). Chapter 10 of the IAC report discusses the IAC's findings in relation to surface water, groundwater and geotechnical hazards.

A number of potential effects of the project for surface water, groundwater and geotechnical hazards were examined through the EES and IAC process, in particular:

- potential erosion, sedimentation and landform stability effects during construction and operation;
- potential impacts on hydrology of creeks and the Yarra River due to construction activities;
- the potential for adverse impacts on water-related values due to wastewater disposal, spills or other incidents during construction or operation; and
- potential impacts on groundwater and groundwater dependent ecosystems.

The EES proposed 16 mitigation measures to deal with surface water, 4 mitigation measures to deal with groundwater matters and 5 mitigation measures to deal with geotechnical matters. These mitigation

measures relate to both the construction and operation of the project and have been the subject of recommendations by the IAC which are discussed in detail Chapter 10 of the IAC report and include additional measures in response to submissions and discussion at the inquiry hearing.

The project is set in a heavily vegetated mountainous area with numerous waterways that may be impacted as a result of the construction activities with the EES identifying 166 locations where trails would cross waterways. Some of these crossing points do not hold permanent water and are best described as depressions or gullies. Of the 166 points identified, there are 42 points discussed in the EES where the new trail network crosses a defined waterway as set out in the *Water Act 1989*. The project also includes construction of the Yarra River Bridge which will span approximately 121 metres and allow mountain bikers to cross over the Yarra River, Warburton Highway and Dammans Road, connecting the northern and southern trail networks.

In relation to potential surface water impacts it is also notable that the trail heads proposed at Warburton Golf Course, Wesburn Park, Mount Tugwell and Mount Donna Buang include amenities, carparks, a shuttle bus shelter and bike wash facilities to stop the spread of weeds and pathogens. Toilet and bike wash facilities are proposed to be connected to existing reticulated services at Warburton Golf Course and Wesburn Park. Mount Donna Buang and Mount Tugwell would use a tanked septic system. A closed loop system for the collection and storage of waste/sediment associated with the bike wash facilities is proposed at each trail head.

The proximity of the proposed trails to Coranderrk Creek drinking water catchment area was a key issue discussed at the hearing. The IAC requested the preparation of a map showing all elements of the project infrastructure overlaid with natural catchment areas and the Coranderrk Creek designated water supply catchment areas. The key additional risks associated with the trail alignment within a protected drinking water catchment are the pathogen risk to the drinking water supply and increased turbidity of surface water runoff both during construction and operation of the trails.

Discussion

Surface Water

The IAC report summarised the key issues related to surface water as:

- impacts from sediment and measures to reduce the risk of erosion and sedimentation associated with the crossing of waterways;
- wastewater;
- chemicals; and
- the section of Trail 1 in the Coranderrk Creek closed water supply catchment.

Sediment

Potential effects on sediment runoff during construction and operation of the mountain bike trails was a key issue identified in the EES and was also a major focus of submissions on the exhibited documents. The IAC noted several submissions suggested that the trails should be closed during periods of high rainfall. The IAC found that the mitigation measures, including the additional mitigation measures proposed by Mr. Harrow, are appropriate to ensure that residual impacts on surface water values are managed to an acceptable level.

The EES noted there were several ways the project may cause sedimentation:

- the clearing of the construction corridor of vegetation;
- workers and construction machinery accessing the site and associated soil disturbance;
- the excavation of the path and associated soil disturbance;
- removal of rocks and roots from the path decreasing soil stability;
- compaction of the trail increasing runoff and causing erosion; and
- construction of a trail over a defined or undefined watercourse without appropriate erosion controls in place (including construction of additional informal trails).

The EES outlined a number of mitigation measures to reduce the impact of sedimentation on waterways including to undertake micro-siting prior to construction, use of elevated crossing design over waterways, having buffers around waterways, use of tracking machines and ongoing monitoring of water quality to measure the effectiveness of mitigation measures and facilitate adaptive management.

The EES Surface Water, Groundwater and Geotechnical Report identified that the construction of bridges or elevated structures has the potential to impact the hydrological flow regime of some waterways, potentially leading to a build-up of debris and debris flows downslope causing damage to vegetation and the natural landform. The potential for the Yarra River Bridge crossing to impact the hydrological regime of the Yarra River was assessed in detail. The bridge has been designed with no placement of pylons in the Yarra River and would meet Melbourne Water and Building Code of Australia requirements. Sediment controls would also be implemented as outlined in the EMF and reflected in the draft CEMP and OEMP exhibited with the EES. The EES concludes that the existing flow regime of the Yarra River is unlikely to be impacted during bridge construction or operation, with implementation of the proposed design and mitigation measures. I support the conclusion of the EES that impacts on the Yarra River are unlikely, subject to detailed design and implementation of mitigation measures. This will also be subject to obtaining consent for the bridge construction from Melbourne Water as the relevant water authority.

The CEMP and OEMP are important plans to ensure there are no unacceptable impacts to the range of waterways from the construction and operation of the mountain bike trails. The Council, its expert witness and trail design company World Trail asserted that adherence to these plans would protect the waterways in all the areas where trails are proposed. Melbourne Water and Parks Victoria, while not dismissing the CEMP and OEMP as unsuitable, considered that more details were needed to provide greater confidence that the required environmental outcomes will be achieved. I support the IAC's recommendation to formalise ongoing consultation with Melbourne Water on the relevant elements of the CEMP and OEMP to ensure this consultation continues prior to these plans being submitted for approval, by amending the incorporated document as shown in Appendix G of the report to add "and Melbourne Water" to the end of Clauses 7.1 and 7.3. Given the key role of DELWP Port Phillip Region as land managers of the southern section of the proposed trail network outside the Yarra Ranges National Park, I also recommend the need for consultation with DELWP Port Phillip Region regarding the CEMP and OEMP is added to these clauses.

Wastewater and chemicals

The EES Surface Water, Groundwater and Geotechnical Report noted that construction and use of toilets and amenities at trail heads that are not sewered can present a risk to water quality and noted the proximity of facilities at Mount Donna Buang to the Coranderrk Creek catchment area. During operation, septic systems have the potential to result in nutrient loads to surface runoff and receiving waterways. The IAC's requested further information on the potential visitor numbers to Mount Donna Buang and patronage of the toilet facilities. The Council's response stated the existing septic tank that services these facilities has a capacity of 15,000 litres and is a closed vault system with no drainage to the local environment

The IAC report noted detailed designs and construction details for the upgrade and construction of the trail head at Mount Donna Buang and Mount Tugwell were not provided to the IAC. However, the IAC was provided with information on a tanked wastewater system for the toilet facilities and design concept of the closed loop system bike wash stations.

The final hearing versions of the CEMP and OEMP (mitigation measures SWM11, SWM14 &SWM19) were provided to help demonstrate that these proposed closed loop systems would prevent unintended release of chemicals into the sensitive environments within the Project area. The IAC supported these and considered that the proposed trail heads and bike wash stations can be constructed and operated in a manner that can protect the surrounding environment.

At the hearing, in its Part C submission, the Council noted the hygiene station design is constantly evolving and it will look to implement the best practicable solutions available at the time. This may include features

such as hygiene stations that provide appropriate pathogen and weed treatment, followed by a water clean, in order to further mitigate any risk to sensitive receptors within the forested environments (such as the Mount Donna Buang Wingless Stonefly).

I agree with IAC's conclusion that the risks to water quality from wastewater disposal are minimal given the existing toilet facilities on Mount Donna Buang are (and will remain) a closed vault system, and the toilets to be developed at the main trail head at the Warburton golf Course will be connected to sewer. I am comfortable these facilities for wastewater and wash stations can be designed, constructed and operated in a sensitive manner to protect the environment.

Corranderrk Creek closed water supply catchment

The EES proposed a 458 metre section of Trail 1 near the summit of Mount Donna Buang inside the catchment boundary of the Coranderrk Creek, one of Melbourne Water's protected drinking water catchments. Based on the material before it, the IAC concluded the section of Trail 1 proposed in this closed drinking water catchment will not present unacceptable risks to drinking water quality.

However, as outlined in Section 6.1, I have recommended Trail 1, as proposed in the EES, not be implemented, because of its potential for unacceptable impacts on biodiversity and conservation values in the national park. With this recommendation adopted, it would mean the project would no longer intersect the Coranderrk Creek catchment. Regardless approval from Melbourne Water to construct the trail within the closed catchment would be required.

Given Melbourne Water's statutory role of regulation of waterways and catchments throughout the project area I support IAC's recommendation to amend the incorporated document as shown in Appendix G of the report to add "and Melbourne Water" to the end of Clauses 7.1 and 7.3 to help ensure they are appropriately consulted in the development of the CEMP and OEMP moving forward.

Groundwater

In relation to groundwater impacts, the EES Surface Water, Groundwater and Geotechnical Report concluded that no significant impacts on groundwater were expected to occur for the project, following the implementation of the proposed mitigation measures. Groundwater modelling conducted for EES indicated interception of groundwater (including spring activity) was very unlikely. The EES noted shallower spring activity at lower elevations may potentially occur, although it was considered intersection with this was unlikely due to the shallow nature of the excavations required for trail construction.

The IAC concluded that the mitigation measures to protect groundwater values are appropriate, can be implemented, and will assist in ensuring that the residual impacts on groundwater values are managed well within an acceptable level. The report noted four submissions expressed concern regarding the potential for trail construction and associated soil compaction to alter soil hydrology leading to different groundwater and surface water flows. No government agencies including Melbourne Water made any submissions on groundwater matters. I agree with the IAC's conclusion that the mitigation measures to protect groundwater outlined in the EES are appropriate, can be implemented and will assist in ensuring that the residual impacts on groundwater values are managed well within an acceptable level.

Geotechnical hazards

The key issue discussed within the EES and IAC report in relation to geotechnical hazards was potential for landslip from construction and operation of the trail network. The EES noted while no specific soils have been identified as being significantly more prone to erosion, all exposed soils will have the potential to erode, the degree to which is dependent on numerous factors including soil type and chemical makeup, slope, aspect and the extent of removal of vegetation cover. These elements vary across the trail network. To facilitate the construction of the trails, the construction corridor must be cleared of vegetation allowing sufficient passage for the excavator. While it is intended that no large trees would be removed, those that are unsafe and present a hazard either during construction or operation may be removed.

The IAC report noted that several submissions made specific comments on the risk of landslides in the area, particularly after heavy rain. No government agencies made any submissions on geotechnical matters.

I support the IAC's findings that the mitigation controls proposed to manage geotechnical risks are appropriate, can be implemented and will assist in ensuring that the residual geotechnical impacts can be managed to reduce risk and potential impact to an acceptable level.

Assessment

In relation to other surface water impacts, I support the IAC's finding that the EES assessment of surface water impacts in relation to water quality and hydrology was adequate. It is my assessment that construction impacts can be satisfactorily managed through the recommended mitigation measures.

I note that some degree of erosion and sedimentation of downstream areas may occur during the construction phase. However, with diligent implementation of the proposed mitigation measures, the residual surface water impacts are expected to be minor and it is my assessment that these impacts are acceptable. I support the IAC's proposed minor amendments to the incorporated document to require consultation with Melbourne Water on the CEMP and OEMP prior to submission to me (or delegate) for approval. Consultation with DELWP Port Phillip Region is also required on these plans.

I note Melbourne Water's view that trails should not be located within the within the Coranderrk Creek Catchment which is a designated closed water supply catchment. However, I recommend that Trail 1 proposed in the EES not be implemented, as set out with in section 6.1. If Trail 1 was to proceed as proposed in the EES, approval of Melbourne Water would be required for works within the closed catchment area.

In relation to groundwater and geotechnical impacts, it is my assessment that the likely effects are generally low and are acceptable with the implementation of recommended mitigation measures.

6.3 Land use and amenity

Evaluation objective

To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.

Assessment context

Land use and amenity impacts are addressed in the EES in Chapter 11 and Technical Appendix D and appended specialist reports (Landscape and Visual Impact Assessment, Air Quality Technical Report and Notice Technical Report) as well as in section 13 of the IAC report. I am satisfied that the impacts of the project on land use and amenity matters are accurately described in these parts of the EES and mitigation measures provided in the final hearing versions of the CEMP and OEMP (Tabled Documents 158 and 159) deal with land use and amenity matters. Some of these measures have also been the subject of recommendations by the IAC.

The proposed trail alignment and associated infrastructure are mainly located on public land in conservation and forested areas to the north (Yarra Ranges National Park) and to the south (Yarra State Forest) of Warburton and the Yarra River. The project area also includes residential areas, tourist attractions, community infrastructure and recreational facilities, such as the Warburton Golf Course, Wesburn Park, as well as extensive track and trail networks including the Mount Victoria Walking Track and the Warburton Rail Trail. The Warburton Highway transects the project area and provides access to the townships of Warburton, Millgrove and Wesburn.

The trails proposed for the project directly intersect five private properties including the Warburton Golf Course, and a further 29 properties are located within approximately 100 metres of the trail alignments. The main trail head and Visitor's Hub is located on the southern section of the Warburton Golf Course and the other trail heads are proposed to be located on public land at Wesburn Park, Mount Tugwell and

Mount Donna Buang. Two bridges are also proposed on public land to provide connection between the northern and southern trails across Yarra River at the main trail head as well as across Old Warburton Road.

The main land use issues identified by the EES include:

- use of private land by the project;
- location of part of the trails within Yarra Ranges National Park; and
- amenity impacts of trail use as well as at Warburton Golf Course and other trail heads.

Both the EES and the IAC report also identified key amenity impacts associated with the use of land including:

- traffic and carparking impacts;
- amenity impacts associated with increased visitor numbers to Warburton township;
- noise impacts, including the provision of a noise barrier near Martyr Road;
- landscape and visual impacts; and
- air quality impacts.

This section provides my assessment of noise, visual and air quality impacts of the project and also considers the project's consistency with planning policy. Traffic, carparking impacts and amenity impacts on the Warburton township associated with increased traffic are further discussed in Section 6.6 6.6 and impacts associated with increased visitors are further discussed in Section 6.46.4 of this assessment.

Discussion

Strategic support and consistency with planning policy

The project enjoys broad strategic support in state planning policy including *Plan Melbourne 2017-2050* (Plan Melbourne) and the Planning Policy Framework. Outcome 7 of Plan Melbourne is that "Regional Victoria is productive, sustainable and supports jobs and economic growth". The project is intended to contribute to this outcome by attracting investment into the Yarra Ranges region through the creation of recreational infrastructure which will attract domestic and international visitors and support jobs and economic growth.

State planning policies relevant to the project include:

- Clause 11 – Metropolitan Strategy;
- Clause 12 – Environment and landscape values;
- Clause 13 – Environmental Risks and Amenity;
- Clause 13 – Built Environment and Heritage;
- Clause 15 – Heritage;
- Clause 17 – Economic Development; and
- Clause 19 – Infrastructure.

The project also supports the intent of the local planning policy framework of the Yara Ranges Planning Scheme to the extent that the proposed planning approval for the project would establish a framework to manage the environmental, social, and economic effects of the project while at the same time facilitating a project that will deliver tourism benefits.

The project enjoys support from key strategic documents including the *Yarra Strategic Plan 2022-2032* and the *Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan 1996* (Regional Strategy Plan). In the context of the *Yarra Strategic Plan 2022-2032*, some elements (such as the main trail head) are potentially located on or close to Yarra River, however the majority of the proposed trail is not proposed to be located on Yarra River land. I support the IAC's assessment that the trail heads can be constructed and operated in a way that is consistent with the overarching objectives and protection principles of the P&E Act and the Yarra Strategic Plan.

The Regional Strategy Plan (RSP) falls under my responsibility and requires any amendment to the Yarra Ranges Planning Scheme to be consistent with the RSP. I agree with the IAC's assessment that the project enables appropriate consideration of and supports the ongoing implementation of the RSP by promoting tourism and recreation in the Yarra Valley while also fostering positive social and economic outcomes.

I agree with the IAC that, subject to the removal of Trails 1, 45, 46 and 47 as proposed in the EES, the project achieves an appropriate balance of competing policy objectives under the P&E Act and the Yarra Ranges Planning Scheme, including policies that encourage tourism and economic development and policies that seek to protect and preserve the natural environment.

It is my assessment that the project has support in planning policy including the Planning Policy Framework and Plan Melbourne.

Land Use Impacts

Submissions raised concerns about the use of mountain bike trails on land reserved for conservation purposes. The use of mountain bikes on trails is a new land use on within the areas of the Yarra Ranges National Park, which is land primarily used for conservation and minor recreational activities (e.g. walking, seasonal snow play). New uses need to be carefully balanced with the significant environmental values of the land reserved for primarily conservation values.

As outlined in Section 6.1, I support IAC's recommendation to remove Trails 1, 45, 46 and 47 as proposed in the EES, due to potential for these to have unacceptable impacts on biodiversity and conservation values. I agree with IAC's finding that the impacts of the other proposed trails in both the north and south of the study area can be managed to an acceptable level with appropriate mitigation measures, and therefore the use of land for trails within conservation areas, including the Yarra Ranges National Park, can be supported. These issues are further discussed in Section 6.1.

The IAC found that submissions raised no key concerns related to land use and that submissions about land use primarily related to amenity impacts such as noise, landscape and visual, and air quality impacts. These are discussed in further detail below.

I am satisfied with EES's land use planning assessment that concludes that the construction and operational impacts to established land uses are generally minor with the implementation of mitigation measures to be applied through the CEMP, OEMP and communication and engagement plans. This view was also supported by the IAC.

Trails and infrastructure are mainly located on public land mostly at least 100 metres away from residential land uses. Where the project does traverse private land (five properties) the trails and infrastructure are located away from dwellings, on undeveloped land, bushland or open space areas. No compulsory acquisition is proposed, rather, it is proposed that a memorandum of understanding between parties is used to manage the use of the operation on private land.

I am satisfied that other potential land use conflicts between trails users, such as bushwalkers and other users of public land, can be mitigated and managed through the implementation of the CEMP and OEMP. Specifically, mitigation measure SM6 identifies signage, trail riders code of conduct, choke points, trail maps, education campaigns and regular user group updates and increased monitoring of trail bike riding activity to ensure access, safety and enjoyment for other recreational users is maintained.

The use of the Warburton Golf Course land for the development of a Visitor's Hub, trail head and trail alignments are considered suitable use of the land which is consistent with the existing tourist and recreational facilities of the golf course land. The proposed upgrades in the southern section of the golf course include car park extensions, shuttle bus shelters, picnic tables, visitor information and bike wash bays, consistent with the low-key development appropriate at this site. Conflicts between golfers and mountain bike riders will be addressed through the provision of appropriate screening, as required by OEMP mitigation measure SM4 (further discussed below).

I understand that the trail head at Wesburn Park will be integrated with the wider redevelopment of the park as proposed in the Draft Wesburn Park Master Plan and the upgrades will contribute to the overall improvement of the recreational facility. The development and use of a new trail head at Mount Tugwell will not impact on the exiting uses of the state forest. Impacts to timber harvesting within the state forest are expected to be able to be appropriately managed through implementation of the CEMP and OEMP, including notification to trail users on planned forest harvesting activities.

The project's impact on the range of recreational activities currently undertaken on existing vehicle access tracks, walking tracks and mountain bike trails is considered minor and is discussed in further detail in Sections 6.3 and 6.46.4. Bushfire risks for trail users and visitors are also discussed in Section 6.76.7.

Amenity Impacts – Noise

Submissions raised concerns about an increase of noise in bushland, near properties and along the Birrarung (Upper Yarra River) generated by mountain bike users and the noise generated by mountain bike events, as well as noise effect on wildlife and on the amenity of the natural environment that residents value. I support the IAC's findings that the residual impacts on noise from construction and operation of the project are unlikely to be significant and will be able to be acceptably managed via the implementation of the mitigation measures proposed.

I also accept the findings of the EES Noise Technical Report which concluded that noise from trail users is unlikely to be significant. Specifically, the EES concluded that noise near the majority of residences near the trails will be occasionally audible however not intrusive, except for properties on Matryr Road which are approximately 25 metres from the nearest trail. I note the IAC's observations that mountain bikes and cyclist voices passing along the Warburton Rail Trail were less noticeable than passing motor vehicle traffic.

The IAC found that minimising noise is an important input into the final design of the lower parts of the trail network to maintain the amenity of the residential area of Martyr Road. The IAC report and evidence submitted by Ms Peterson note that the addition of noise barrier to the section of trail through the golf course adjacent to the properties on Martyr Road (as proposed by mitigation measure NM05) may have unnecessary visual impacts and suggested that the design and location of the noise barrier be considered after the trail network is built and operational. I support this approach as it would allow a considered response to the final design of the noise wall, if it is required, and will help ensure that the residual impacts of the noise wall would not impact on the open landscape and the views currently enjoyed by properties in Martyr Road. Mitigation measure NMO5 under the final hearing version of the OEMP (Tabled Document 159) allows for this approach to be implemented.

I agree with the conclusions of the EES Noise Technical Report that noise generated from small scale local events would not have a significant noise footprint, while larger events are likely to have additional noise generated from spectators and public address systems at trail heads and the Visitor's Hub. I am satisfied that these impacts can be managed in accordance with Event Management Plans required under condition 16 of the incorporated document, which includes spectator management controls. However, I recommend condition 16 of the incorporated document specify noise mitigation as a matter to be detailed in Event Management Plans to manage noise during large scale events.

Amenity Impacts – Landscape and visual

Landscape and visual impacts are addressed in Chapter 11 and Attachment VII of the EES and in Chapter 13.4 of the IAC's report. I am satisfied that the impacts of the project on landscape and visual elements are appropriately assessed in the EES. I am also comfortable that environmental management plans and development plans required under the incorporated document, will appropriately cover the need to address landscape and visual amenity issues.

The proposed mountain bike trails and associated visitor's hub, trail heads, and bridges will make permanent changes to the landscape character and visual amenity due to being new structural elements. I support the IAC's assessment that the visual impact of the trails and infrastructure items will be minimal

(provided they are properly constructed and maintained in accordance with the mitigation measures). The detailed design, which incorporates planting and site orientation, can provide design outcomes that are considerate of the landscape and retain visual amenity values as far as practicable. I am satisfied with the CEMP and OEMP being the primary mechanism for managing these visual impacts (which include the need for consideration of design and construction techniques and consultation with affected stakeholders), and that implementation of these plans will enable visual impacts to be appropriately avoided and minimised.

The EES characterises and assesses the potential impacts for six landscape character types. Of these, four key views were identified within the project area:

- north-south views across the valley between ridgelines;
- vistas through settlement areas within Warburton township to hills and surrounding landscape;
- distant ridgeline views from cleared or elevated recreation or community gathering areas; and
- panoramic views of surrounds from Mount Donna Buang summit observation tower).

I agree with the conclusions of the IAC's report which notes that the proposed trail network will have negligible visual impacts, due to the avoidance of tree removal where possible. I note that the trails are primarily located out of view in the Yarra Ranges National Park and Yarra State Forest in and around Warburton. This view was also supported by the IAC's observation that existing mountain bike trails near Old Warburton Road are visually unobtrusive with minimal visual impact.

I understand the more discernible visual impacts associated with the proposed trails are associated with the trail heads (notably the Golf Course and Wesburn Park) which generally have expansive areas allocated to carparking and facilities. The IAC report indicates that in recent years, public land managers have found methods to ensure infrastructure is more in keeping with the landscape and is not visually obstructive and I am generally confident that this can be applied in this project. The IAC report also notes that the Visitor's Hub and the proposed bridges have the greatest potential for visual impacts, however concluded that bridges are a well-accepted element in the rural landscape and the Old Warburton Bridge will only be visible for relatively short distances on either side due to the winding nature of the road. It is also noted that tree planting will allow bridge structures to nestle into the environmental surrounds and minimise any visual impacts.

I note the draft concept bridge sketches provided in Technical Appendix D of the EES (Landscape and Visual Impact Assessment appendix) and I am satisfied with the mitigation and contingency measures outlined in the EES for the design stage to ensure bridges respond sensitively to their environmental setting. I agree with the IAC that the development plans required under the incorporated document should demonstrate the visual impact of the proposed bridges, and that community consultation is advisable prior to finalisation of bridge designs. This will help ensure that visual impacts from more obvious built form will be appropriately managed.

I understand that the proposed acoustic wall (if needed) which seeks to mitigate noise related amenity impacts may present a visual impact. Although the IAC expressed no view on the final design of the acoustic wall, I agree with the IAC that the visual integration into the landscape would be an important part of the detailed design, and earth bunding or moving the track further into the golf course as recommended by Ms Peterson could be potential options for visually integrating the wall into the landscape.

A potential fence for the golf course is also identified to protect riders on trails running through the golf course. I support the IAC's recommended condition 6.1 (j) in the incorporated document that requires details of potential visual amenity impacts to be provided.

In relation to the Yarra River, there is strong legislative and policy framework under the Planning Scheme and the *Yarra River Protection (Wilip-gin Birrarung murron) Act 2017* that seek to protect the amenity, including the visual amenity, of the Yarra River. I agree with the IAC report that appropriate design and siting can provide consideration of the Yarra River Walk as a sensitive receptor and minimise visual disturbance.

Amenity Impacts – Air Quality

Submissions raised concerns around amenity impacts to air quality, with one submitter noting the increased traffic on dirt roads can cause dust impacts, while another was concerned about increased motor vehicle emissions. I note that the discussion of air quality impacts in the EES Air Quality Technical Report and the IAC's report address two primary potential impact pathways:

- dust generated during construction, with associated activities such as site clearing, vehicle movements, erosion of soil stockpiles and freshly exposed areas, notably at the main trail heads, Visitor's Hub, and the two proposed bridges, and
- post-construction impacts associated from increased visitation and use of dirt roads by visitors.

I am satisfied with the findings of the Air Quality Technical Report which conclude that unmitigated air emissions from construction of the Visitor's Hub and carparking 'pose a negligible to low impact for dust soiling and a low impact for human health' and that operational dust impacts would have negligible impacts to air quality at sensitive receptors. I understand that during operation, air emissions from increased traffic would be highly localised and short in duration, and I agree with the EES findings that wheel-generated dust from mountain bikes using the trails is not expected to cause dust emissions discernible at sensitive receptors.

I support the IAC's position that dust and air quality issues during the construction phase can be suitably managed through the CEMP and OEMP.

It is my assessment that the proposed mitigation measures for air quality are appropriate and implementable, and that any impacts on air quality will be minor and can be appropriately managed through the recommended mitigation measures.

Assessment

I support the recommendations of the IAC in relation to mitigation measures for amenity impacts. I also recommend the addition of noise as a matter of consideration for event management plans under condition 16 of the incorporated document.

It is my assessment that land use and amenity impact from the project should be minor and can be acceptably managed through the implementation of mitigation measures applied in the CEMP and OEMP including changes recommended by the IAC and this assessment.

I also consider that:

- the project has broad strategic support in state and local planning policy and with the Regional Strategy Plan; and
- the project can be implemented consistent with planning policy, subject to the removal of Trails 1, 45, 46 and 47.

Traffic, carparking impacts and amenity impacts on Warburton township associated with increased traffic are further discussed in Section 6.66.6 of this assessment and impacts associated with increased visitors are further discussed in Section 6.46.4.

6.4 Socioeconomic

Evaluation objective

Minimise potential adverse social, economic, amenity and land use effects at local and regional scales.

Assessment context

Socioeconomic impacts are addressed in the EES within Chapter 12, Appendix E (the socioeconomic technical report prepared by RM Consulting Group), and within Attachment II (Alternatives assessment

report) and Attachment III (Stakeholder consultation report). Chapter 15 of the IAC report discusses the IAC's findings and recommendations in relation to socioeconomic aspects.

The EES proposed 11 mitigation measures to deal with socioeconomic matters, alongside further monitoring, stakeholder engagement and reporting commitments. These mitigation measures relate to both the construction and operation of the project and have been the subject of recommendations by the IAC including additional measures in response to submissions and discussion at the inquiry hearing.

Based on the EES, key potential socioeconomic benefits which may be experienced as a result of the project include:

- an increase in local visitation and resulting increase in regional spending and income;
- increased employment opportunities, particularly for young people and less skilled workers;
- enhanced community access to infrastructure that encourages increased levels of physical activity, as well as health and wellbeing outcomes; and
- supporting a transition from the timber industry to a nature-based tourism industry.

Key potential negative impacts assessed in the EES include:

- impacts on the availability of affordable long-term rental stock;
- impacts on bushwalkers, hunters and other recreational users of the project area;
- impacts on the character of the area and on social cohesion;
- potential higher traffic volumes and other amenity impacts; and
- uncertainty of economic benefits and return-on-investment for businesses.

The Economic Feasibility Study conducted as part of the EES estimated the economic benefits of having trails within the national park (with or without Trail 1) and concluded that case 1 (i.e. trail network including Trail 1) would generate substantially greater economic benefits than either case 2 (no trails in the national park) or case 3 (removal of Trail 1).

This section focusses on the broad socioeconomic aspects of the project, however further detail is provided on land use and amenity impacts in Section 6.3 and traffic and transport issues in Section 6.6.

Discussion

Economic benefits

The EES found that the project is expected to provide some local and regional economic benefits, through additional indirect and direct spending, as well as additional job opportunities associated with the project. Chapter 2 of the EES states that Warburton and the Upper Yarra Valley are experiencing significant economic hardship associated with the decline of mining and forestry, which has been further impacted by the COVID-19 pandemic. Yarra Ranges Tourism conducted research which identified a likely 35 per cent reduction in spending in the region during the 2020-21 financial year, resulting in a potential loss of up to 3,360 jobs across the region.

The IAC acknowledged that the current state of the local economy is somewhat depressed, and that the anticipated closure of the timber industry will present further challenges. While the project will not solve all those challenges, I agree with the IAC that it can contribute a boost to the local economy, and the transition away from traditional employment sources that are declining. I agree with the IAC that the project will likely generate opportunities for new businesses to emerge and existing businesses to grow. In turn, these businesses, in addition to construction, will provide new job opportunities during project operations, hence building wealth and supporting the local community.

The modelling included in the Economic Feasibility Study within the EES' Alternatives assessment, indicated that the preferred trail network (including Trail 1), would provide the greater economic benefits, both short and long term, compared to the alternatives (Trails 45, 46 and 47) considered. I note the IAC agreed with this finding. However, as discussed earlier in this assessment, I support the IAC's view that Trails 1, 45, 46 and 47 as proposed in the EES, should not form part of the project due to the unacceptable environmental

risks for biodiversity and habitats values of state significance. I note that the EES Economic Feasibility Study indicates that, even with no national park trails, the project would still provide a modelled increase in local spending of $19.1 million in year 1, up to $28.4 million in year 10. I support the IAC's view that that the project will contribute positively to the economic wellbeing of the local area and region, even without the 'flagship' trails identified in the EES.

Social Aspects

Affordable Housing

The EES identifies the predicted increase in overnight visitation to the Warburton area as a factor that may lead to increased rental pricing and a reduction in long-term rental availability. Yarra Ranges Council stated they plan to mitigate these impacts by investigating an increase in social housing and encouraging developments for visitor accommodation. Nonetheless, several submissions raised affordable housing as a significant concern at the IAC hearing.

I concur with the IAC that this is the greatest social impact and concern for the project, as access to secure, affordable housing is important for enhancing equality and social inclusion within a region. Furthermore, I acknowledge that it is the more vulnerable members of the community that are at highest risk from such impacts on affordable housing. It is likely that the project will increase the attraction of the area, which is likely to put additional pressure on the local housing market. Additionally, as experienced in other towns in Victoria, there may be a decrease in long-term rentals if some are converted to short-term stay accommodation for visitors. With housing prices already rising within the Yarra Valley region, I acknowledge that, without intervention, this may lead to additional financial pressures for existing residents in the area.

I acknowledge that opportunities have been identified by the Yarra Ranges Council to meet the additional overnight accommodation requirements generated by the project. However, the viability and certainty of these projects are yet to be determined. The Warburton Advancement League have proposed to deliver 14 affordable housing dwellings, however this development alone will not effectively mitigate the issue. I agree with the IAC that the proponent should continue to encourage social and affordable housing contributions in order to meet the needs of the region. That said, I also support the IAC's finding that while the project should be expected to mitigate these impacts from the project, there is a limit to the extent to which they can counter them, and they should not be responsible for addressing the broader issues related to affordable housing. I support the IAC's conclusion that the final hearing version of the mitigation measures proposed for this issue by the proponent, are appropriate for the project.

Impacts on other recreational uses

The EES acknowledges that the proposed trails intersect with a range of existing recreational uses including bushwalking, hunting, horse riding, motorcycling and four-wheel driving. The IAC received several submissions which expressed concern about the potential conflict between cyclists and other recreational users of the national park and state forests.

The IAC found that collisions or conflicts with existing recreational uses were most likely for shared trails, whereas the majority of trails proposed for the project will not be shared. I support the view of the IAC that trails can be appropriately signed to accommodate and mitigate risks for cyclists and pedestrians on shared paths. I consider that the requirements, as outlined in mitigation measure SM6 of the EES, for the Council to monitor rider behaviour and proactively respond to complaints will help manage these impacts and support the conclusion of the EES that residual impacts associated with shared use of trails are expected to be minor.

I acknowledge concerns raised in submissions regarding impacts on hunting, yet I concur with the IAC that residual impacts on hunting within the state forest are likely to be very minor. As was noted in the EES, game is unlikely to occur in areas of mountain biking activity and mitigation measures, including increased signage and education campaign, are proposed to assist in managing any land use conflicts with hunting.

I recognise concern for the loss of the portion of the Wesburn Park off-leash dog walking area, however I agree with the IAC that that this alteration to the off-leash area does not warrant modification to the project as there is still sufficient area available for off-leash dog walking. Provision for the Council to provide an alternative off-leash location as part of their master planning process could further reduce residual impacts.

I believe that the relevant mitigation measures outlined in the final hearing versions of the CEMP and OEMP will effectively manage these impacts, reducing residual impacts to an acceptable level. However, I do support the intent of the IAC's recommended amendments to Clauses 7.2(c) and 7.4(b) of the Incorporated Document to ensure stakeholder consultation is optimised. This will be vital in preparing and supporting the community during construction and operation of the project. The phrasing of these clauses will be subject to refinement during decision-makers consideration of this assessment.

Social cohesion

It is expected that the project will attract a higher number of visitors than the township of Warburton currently experiences. The IAC found some submitters were concerned that this would change the town's character and erode the social cohesion that some in the community currently feel, while others in the local community welcomed the opportunities that increased visitation and activity levels would create. I acknowledge these views, and while I understand that the likely increase in visitation will not be viewed favourably by all residents, I consider these impacts acceptable. I anticipate the community as a whole will be adaptive and resilient and indeed grow in response to the changes and opportunities brought about by the project.

The IAC found some submitters experienced fears of antisocial behaviour from trail users. However, I concur with the IAC that these concerns may be inflated, as the project is deigned to be inclusive and the mountain biking community is considered to be generally respectful and supportive of locals. Along with the IAC, I consider that the proposed stakeholder engagement plans and mitigation measures outlined in the final hearing versions of the OEMP and CEMP will enable the community to be well-informed of the project and allow the proponent to respond to concerns where they arise.

Other socioeconomic impacts

Further potential socioeconomic impacts which were discussed in the EES included impacts on businesses, loss of privacy for adjacent residences, as well as impacts to the Warburton Golf Club, traffic and community infrastructure. It was outlined in the EES that there would likely be negative impacts for only a small number of businesses that are not able to adapt to the changing markets and costs, similarly there are only five private residences which may have their privacy and amenity impacted to some extent. With implementation of the proposed mitigation measures as outlined in the final hearing versions of the CEMP and OEMP, I agree with the IAC that residual impacts on these aspects will be acceptable.

The Warburton Golf Club will be impacted by the project as a trail head is proposed to be established at the Golf Club. The EES states that impacts to the club will be relatively minor as the proposed route will mean riders will only come within 10m of one hole and may potentially require the realignment of another. The Golf Club will likely benefit from the project due to increased parking capacity, exposure to potential new members, and potentially financial stability from a leasing agreement for the project. Therefore, I consider residual adverse impacts are likely to be minor in that content, and acceptable with implementation of the proposed final hearing version of mitigation measures.

Additionally, traffic, parking and congestion are raised within the EES as a potential impact on residents' perception of the liveability of Warburton. These impacts are assessed in detail within Section 6.66.6 of my assessment.

Assessment

It is my assessment that with the implementation of mitigation measures the residual socioeconomic impacts associated with the project can be managed to acceptable levels. I agree with the IAC's conclusion

that the project will provide socioeconomic benefits for the local area and greater Yarra Valley region (even without Trails 1, 45, 46 and 47 as proposed in the EES). Through the visitor economy, the project will result in increased spending and job opportunities.

I acknowledge there will be some residual adverse effects, particularly in relation to housing affordability, however the Yarra Ranges Council has identified opportunities to alleviate some stress on the affordable housing and rental markets. There are opportunities to minimise impacts from this project, although the broader issue of housing affordability and rental costs exists already in this region and can't be resolved by the project.

Stakeholder engagement will be a key element in the monitoring and ongoing management of socioeconomic impacts for the project. Therefore, I support the recommendations of the IAC to further embed stakeholder engagement commitments into the delivery of the project, including the conditions of the proposed incorporated document, to help ensure they are implemented appropriately.

Further detail is provided on land use and amenity impacts in Section 6.36.3 and traffic and transport issues in Section 6.66.6.

6.5 Heritage

Evaluation objective

To avoid, or minimise where avoidance is not possible, adverse effects on Aboriginal and historic cultural heritage.

Assessment context

Aboriginal and historic cultural heritage impacts are addressed in Chapter 10 and Technical Report C of the EES and in Section 11 of the IAC's report.

A number of potential effects of the project for Aboriginal and historic cultural heritage values were examined through the EES and inquiry process, in particular:

- potential for destruction or disturbance of sites or places of Aboriginal or historical cultural heritage significance;
- potential for indirect impacts on sites or places of Aboriginal or historical cultural heritage; and
- potential impacts on intangible Aboriginal cultural heritage values associated with the project area and surrounds.

The EES proposed six mitigation measures (HM01 to HM06) to manage impacts to Aboriginal and historic cultural heritage during construction and operation of the project. The IAC did not recommend changes to any of the proposed mitigation measures in the IAC report.

Several submissions raised concerns about the adequacy of assessment and mitigation of potential impacts to Aboriginal cultural heritage. The IAC also considered a few submissions that raised concerns about the potential damage to listed heritage sites.

Aboriginal cultural heritage and historic heritage are regulated and protected under the *Aboriginal Heritage Act 2006* and the *Heritage Act 2017* respectively (see Section 3). A heritage place is also protected under the *Planning and Environment Act 1987* when listed under a schedule to the Heritage Overlay in a planning scheme. A Cultural Heritage Management Plan (CHMP) is the principal mechanism for managing effects on Aboriginal cultural heritage and ensuring compliance with the Aboriginal Heritage Act. The development of CHMP 15276 for the project is ongoing and will require the approval by the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC) prior to the project proceeding.

Discussion

Aboriginal cultural heritage

The EES assessed that overall, residual impacts to Aboriginal cultural heritage following implementation of mitigation measures was low. As outlined in the EES, the project will not directly intersect any known Aboriginal cultural heritage places, however there are five Aboriginal places recorded within one kilometre of the proposed trails. The EES acknowledged that in addition to these sites, utilisation of the abundant natural resources, significant vantage points and the historical narrative of the region have intrinsic intangible values to the Wurunjeri Woi Wurrung people. The EES Technical Report C found no specific intangible Aboriginal cultural heritage stories or oral traditions for the Warburton area that would be impacted by project.

The EES acknowledges that there remains the potential for unrecorded places of significance to be encountered within the project area, particularly during construction. The assessment indicated that the project is unlikely to encounter significant unrecorded deposits of archaeological material, due to the steep terrain of the project area and seasonal downpours which lead to poor Aboriginal place preservation. Technical Report C further stated that the high elevations of the project area, and associated extreme temperatures mean that much of the project area would not have been suitable to be inhabited by Aboriginal people year-round.

The project is expected to encourage more visitation to the area and within the vicinity of known and unidentified Aboriginal cultural heritage places. Potential impacts could include formation of unauthorised trails to Aboriginal cultural heritage places, vandalism or accidental harm to sites or removal of archaeological material. EES Technical Report C compared potential impacts to Aboriginal and historic cultural heritage between the preferred Trail 1 option and the alternate trail alignments, Trails 45, 46 and 47, and assessed no discernible difference in impacts to Aboriginal cultural heritage between them.

A number of submissions raised concerns about the assessment of tangible and intangible Aboriginal cultural heritage, including the methodology, the adequacy of proposed mitigation measures and that the protocols and contingencies drafted for the CHMP were not included within the EES. Notably the potential for the project area to hold intangible heritage values were highlighted in a submission by Ms Piper, a Wurundjeri, Dja Wurrung, Ngurai-Illam Wurrung woman. She highlighted her deep ancestral and cultural connection to the sacred Country on Mount Donna Buang and emphasised the importance of the area as a culture-keeping place.

The IAC acknowledged that compared to the project area, the field work completed to inform the EES was limited in extent. In light of this, the IAC sought further information from Yarra Ranges Council during the inquiry process regarding the extent and nature of field work, the status of the CHMP and the views of the WWWCHAC on the proposed mitigation measures, including contingency plans for unexpected finds and salvage and storage measures. Yarra Ranges Council's response can be reviewed in technical note 4 to the IAC report.

The IAC concluded that the methodology of the survey work conducted to inform the EES was sound and appropriate for the extent of the area, the nature of proposed works including the limited width and depth of construction works. The mitigation measures proposed and the preparation and approval of a CHMP were consider appropriate for a project of this nature. I support this finding. The IAC found that based on the information available to them, impacts to known sites of Aboriginal cultural heritage significance will be avoided although there remains the potential for unexpected finds.

The IAC did not recommend any changes to the project or mitigation measures in relation to Aboriginal cultural heritage. I agree with the IAC that the proposed mitigation measures are broadly appropriate. I note that the CHMP process is ongoing and CHMP 15276 has not yet been reviewed by the WWWCHAC. I am satisfied that CHMP 15276 will be subject to the requirements and approval of the WWWCHAC, before the project can proceed. I agree with the IAC's conclusion that the CHMP process is the appropriate

mechanism to ensure appropriate protocols and residual issues associated with the protection of Aboriginal cultural heritage are addressed.

Historic heritage

The EES stated that residual impacts to historic heritage following implementation of mitigation measures was low. The project footprint will intersect three historical archaeological sites listed on the Victorian Heritage Inventory (VHI) and two places listed in the Heritage Overlay (HO) under the Yarra Ranges planning scheme. The project will intersect a further 12 unlisted historic places of archaeological potential, which may contain artefacts or features of historic heritage value. Construction of project trails is expected to remove soils, and therefore potentially expose subsurface archaeological features associated with the three VHI sites; O'Shannassy Aqueduct Sawmill Site (H8022-0111), Lady Hopetoun Mine (H8022-0138) and Anderson's Mill (H8022-0135). The project may also affect the fabric of the impacted HO places; however, project construction is not anticipated to impact archaeological features, deposits or landforms associated with these places as the trails are proposed to join with existing tracks at these sites.

EES Technical Report C further stated that the project will intersect with the extent of archaeological potential for a further 12 unlisted heritage sites. Project construction has the potential to expose subsurface archaeological features such as foundations of structures, disturb archaeological deposits such as rubbish dumps, or damage/remove archeologically sensitive landforms such as benching for structure or tramways. Excavation causing erosion and gullying towards water races and tramways may also impact areas of archaeological potential.

The project is expected to encourage more visitation to the area and therefore within the vicinity of known and unidentified historic cultural heritage places. Potential impacts could include formation of unauthorised trails, vandalism, accidental harm or removal of archaeological material.

The IAC acknowledged the limited extent of field survey in relation to the project area, however, the IAC was ultimately satisfied with the assessment, noting that assessment conducted to inform the EES identified all historic heritage sites within the existing HO, as well as those that are listed, or have been nominated for listing, on the VHI. I support the view of the IAC that the methodology used for the historic heritage study was appropriate for the project.

The IAC considered submissions that proposed that no project trail should intersect with a listed heritage site, however acknowledged that the legislative framework under the Heritage Act provides for works to be carried out within the extent of listed sites if it is done in a way that preserves the heritage values of the site. The IAC also referred to the Yarra Ranges National Park Management Plan which includes the aim to provide access to, and interpretation of, heritage places within the national park, provided appropriate protections are in place. I agree with the IAC's assessment that the project's 20 metre assessment corridor will provide the opportunity for Yarra Ranges Council to further avoid and minimise impacts to historic heritage during detailed design.

The IAC did not recommend any changes to the project in relation to historic heritage and concluded that the proposed avoidance and mitigation measures were comprehensive, robust and sufficient to ensure that known heritage values and unexpected finds will be appropriately managed. I support the IAC's view that the proposed mitigation measures are appropriate and complete avoidance of known historic heritage sites is not justified or required to achieve acceptable outcomes that are consistent with the legislative framework.

Yarra Ranges Council will need to obtain consents from Heritage Victoria under the Heritage Act for any disturbance of VHI registered sites, prior to commencement of project works. This would include any heritage controls required for the site. The project may also encounter unlisted historic heritage artefacts or sites during construction. Mitigation measure HH05 provides protection protocols and contingency measures to protect unknown heritage values, including reporting unexpected finds to Heritage Victoria, which may result in further nominations or listings.

The project intersects with two HO places, which triggers the need for approval under the Planning and Environment Act via a planning permit. The proposed planning scheme amendment C198yran provides for the application of the SCO and introduction of an incorporated document. Application of the SCO over land protected by a HO, if approved, will remove the need for a planning permit. The SCO is discussed further in Section 6.3.

I am satisfied that with implementation of proposed mitigation measures, alongside fulfillment of statutory requirements under the Heritage Act and Planning and Environment Act, unavoidable impacts to historic heritage will be appropriately managed to achieve acceptable outcomes.

Assessment

I consider that the methodology adopted for the EES was appropriate to assess the Aboriginal and historic heritage values of the project. It is my assessment that with the implementation of proposed mitigation measures and fulfillment of requirements under statutory processes, including implementation of an approved CHMP and any permits/consents required under the Heritage Act, the residual impacts on Aboriginal and historic cultural heritage associated with the project can be minor and be managed appropriately.

If Trails 1, 45, 46 and 47 (as proposed in the EES) are not implemented, as recommended in Section 6.1, this is expected to avoid direct impacts to one VHI site, one HO site and numerous areas of archaeological potential, further reducing the overall impact of the project on historic heritage values.

6.6 Traffic and transport

Evaluation objective

Minimise potential adverse social, economic, amenity and land use effects at local and regional scales.

Assessment context

Traffic and transport impacts are addressed in Chapter 13 of the EES and Appendix F (the Traffic and Transport Impact Assessment prepared by AECOM), Attachment III (the Consultation Report prepared by Council) and Warburton Mountain Bike Destination Project Traffic Impact Assessment, SALT, 2019. Chapter 12 of the IAC report dated 20 June 2022 discusses the IAC's findings in relation to traffic and transport.

The study area includes three declared arterial roads under the operation and management of VicRoads. All other roads are either managed by Council or DELWP.

The EES scoping requirements required the consideration of traffic and transport impacts associated with the construction and operation of the project at a local and regional scale. Understanding how the project would impact the transport network is important to the development of effective mitigation measures to maintain the functionality, operation and safety of the transport network.

Potential effects related to traffic and transport impacts were examined through the EES and inquiry process which were outlined in the scoping requirements and include:

- understand the positive and adverse socio-economic effects, at local and regional scales, potentially generated by the project, including potential for increased employment, traffic, tourism and visitation as well as pressures on existing housing and community infrastructure (including health services); and
- potential for impacts on reasonably foreseeable upgrades to public infrastructure.

The Transport Technical Report assessed the potential traffic and transport impacts associated with the project. The report found that there were traffic and transport impacts during construction and operation of the project. The key construction transport issues that were identified in the EES included:

- public road network and intersection accessibility for heavy vehicles;
- traffic impacts during road/lane closure for bridge construction; and

- road surface/pavement deterioration resulting from heavy vehicles, machinery and equipment movements on local roads.

The key operations transport issues identified in the EES included:

- cyclist interactions with vehicles at trail crossing points, intersections, on-road usage, trail head layout and shuttle drop off points;
- risk of crashes between cyclists and pedestrians due to increased interactions on paths and bridges;
- emergency vehicles access and evacuation during project operations;
- adequacy of road network infrastructure to accommodate operations traffic in the local road network; and
- parking congestion at trail heads and in the Warburton town centre due to the increase in vehicles as a result of the project.

The EES proposed seven environmental management and contingency measures to deal with traffic and transport matters. These mitigation measures relate to both the construction and operation of the project and have been the subject of recommendations by the IAC including additional mitigation measures in response to submissions which raised concerns around the volume of traffic on Warburton Highway and increasing traffic on local roads, creating congestion and making property access difficult. The IAC focused particularly on the operational management of traffic associated with the project which was considered to lack detail within the EES.

Construction

The main potential impact during project construction was identified to be lane and road closures during construction of the Yarra River Bridge and Old Warburton Bridge. These works could result in increased network congestion and could disrupt residential, business and emergency vehicle access as well as public bus operations. Impacts are proposed to be minimised through the implementation of a Traffic Management Plan and a Stakeholder Communication Plan. The EES Air Quality Technical Report and IAC's report referred to the potential impact of dust generated during construction including light and heavy vehicle movements along dirt roads.

While the project may result in other impacts including delays due to lane closures, some minor increase in crash risk or reduced pedestrian and cyclist safety, the EES concluded that the modest scale of construction activities means that any impacts or risks to the transport network associated with these aspects would be minimal and temporary.

Operation

The EES identified that the project operation may increase the potential for crashes due to increased interaction between cyclists and vehicles on the road network at the main trail head at the Warburton Golf Course, shuttle bus drop-off points and intersections. Interactions between vehicles and cyclists are proposed to be minimised through road safety audits and associated implementation of safer treatments.

During operation of the project, parking availability may be impacted at trail heads and in the Warburton town centre, which could affect the ability of local residents and businesses to find parking. The carparking survey within the Transport Technical Report identified the current total capacity of surveyed parking districts is 416.

Operation of the project would increase vehicle and cycle traffic around Warburton due to the predicted number of visitors. A Traffic Impact Assessment was conducted to assess the potential future peak demand on the transport network as a result of the project in order to determine whether these increases would result in an unacceptable impact such as congestion.

Discussion

The IAC report identified the key issues related to traffic and transport impacts are traffic congestion and the need for road upgrades, including roads used by shuttle buses. Parking, event management and emergency access were also key issues considered.

Congestion

The IAC noted most submissions on traffic related to existing conditions and not just the traffic impacts of the Project. The IAC noted residents' descriptions of existing traffic conditions and referred to the conditions shown in the video presented by Warburton Environment Inc which was at odds with the existing traffic volume data presented in the EES. This cast some doubt on the reliability of the conclusions drawn in the EES Transport Technical Report. Consistent with the IAC, I consider that whilst it is not the responsibility of the project to address existing traffic and parking issues within Warburton, it is important to ensure that the project does not make the existing conditions worse without mitigating them.

The EES Transport Technical Report described traffic generation during both the construction and operation phase of the project. Traffic generation for the construction phase of the project would be made up of the construction workforce which was anticipated to generate light vehicle movements and the movement of plant and equipment would generate heavy vehicle movements. The total daily traffic generation during construction was anticipated to be 166 movements made up of light and heavy vehicle movements across various construction areas forming part of the project including trail heads, trail construction and bridge construction.

I support the IAC's finding that following implementation of mitigation measures in the CEMP, residual impacts on traffic and transport from construction of the project would be insignificant, primarily due to the required Traffic Management Plan to address traffic impacts during the construction phase. I also support the proposed development of a stakeholder communication plan including measures to ensure residents and businesses are informed of upcoming works and road closures

The Transport Technical Report found traffic generation by mode during project operation modelled a total daily trip generation of 610 car movements, 160 shuttle bus movements and 1327 cyclist movements.

The presentations at the hearing cast doubt on the reliability of the conclusions that there is sufficient capacity within the existing road network to cater for additional traffic likely to be generated by the operation of the project. The IAC noted current traffic count data presented in the EES is significantly at odds with the experiences described by local residents and the IAC was not satisfied that the cumulative impact of the project combined with other visitation to Warburton has been fully considered. Further to this, the IAC noted more contemporary, fine-grained and comprehensive data on existing conditions is required than the SCATS data relied upon by expert witness Mr Young, to enable a better understanding of the community experience, as well as to ensure that mitigation measures will be effective in minimising the impact of the project.

I agree with the IAC's findings that further investigation of existing traffic conditions is required to better understand current traffic conditions and that this should be undertaken to inform the preparation of the Traffic Management Plan for the OEMP. I also support IAC's recommendation to undertake broader consultation in preparing this Traffic Management Plan, to better understand the community experience and to ensure mitigation measures will be well informed and effective at minimising impacts. I support the IAC's proposed amendments to the EMF to insert new mitigation measures TP1 and TP2 to cover these recommendations.

In line with the conclusions of the EES Air Quality Technical Report, I consider construction and operational dust impacts from traffic and transport associated with the project would have negligible impacts to air quality at sensitive receptors with the implementation of mitigation measures proposed in the EMF. Air quality emissions from the project are further considered in Section 6.4 of this assessment.

Parking

The IAC report identified key issues related to parking associated with the project are vehicle parking at trail heads, potential for overflow informal/illegal parking and impact on parking in the Warburton township.

The IAC was satisfied on the basis of the EES and Mr Young's evidence that the carparks to be provided at the trail heads will provide sufficient capacity to accommodate the demand generated by trail users driving to the trail heads. However, I have noted the IAC's concerns that parking capacity at the trail heads may be exceeded if the main carpark is not constructed, or if the shuttle bus service is not attractive to trail users.

Many submissions spoke to significant existing parking problems in Warburton demonstrating that parking problems can be localised or felt across the town more broadly. The IAC found that an integrated transport solution is needed for the project that addresses the relationship between project generated traffic, existing traffic and road infrastructure, parking provision and wayfinding. The EES presented only a basic level of information which, in the IAC's view, has not adequately assessed the cumulative traffic consequences of the operation of the project in combination with existing conditions, including more recent developments in Warburton.

The IAC also found there are existing parking pressures in Warburton and surrounds. It encouraged Council to apply its learnings from the traffic and parking challenges experienced from recent developments and other attractions such as Warburton Water World and the Redwood Forest to better minimise the parking impacts of this project and reduce cumulative parking impacts on the township.

I support the IAC's recommendations to amend the EMF and incorporated document to further address concerns of parking capacity at the trail heads by providing a shuttle bus service from day 1 of operations. A well-utilised shuttle service will decrease the number of cars travelling which will in turn reduce the local traffic impacts of the project during operations. I also agree with the IAC that the OEMP needs to include a Traffic Management Plan to manage the traffic impacts of the day-to-day operations of the project.

While mitigation measure TP6 in the EMF included establishment of a parking management plan for the operation of the project, the IAC recommended this plan should include a requirement to proactively monitor parking demand at the Wesburn Park trail head until the Golf Course trail head carpark is completed. The measure also states that if parking demand in Wesburn Park is approaching capacity, additional parking must be provided on an interim basis until such time as the Golf Course carpark is completed. I support this recommendation to help ensure adequate parking capacity at Wesburn Park is provided to support the needs of the project.

Event Management

The IAC report identified key issues related to events associated with the project are the potential for increased traffic congestion and parking impacts, as well as consideration of the number of participants that should trigger the need for event management plans.

The EES report stated the project is expected to host events at various times through the year. These events would range from local events to national events. The traffic assessment anticipated that participants and spectators would predominantly drive to the trail heads. The main trail heads anticipated to be used for events are the Warburton Golf Course trail and Wesburn Park. The EES estimated that during operations there would be 30 local events per year, 10 regional events per year, a state event every two years and a National event every 4 years.

The IAC found that event specific plans are the appropriate tool to consider and manage the traffic impacts of larger events, as provided for in Clause 13.1 of the Incorporated Document. The IAC recommended that a traffic management plan for smaller events utilising general mitigation strategies to reflect the lower number of participants should be added to Clause 13 of the incorporated document. The IAC also recommended deletion of mitigation measure AM07 as this the preparation of event management plans

will be provided for in Clause 13 of the Incorporated document. I support the IAC recommendations which will help to address issues related to carparking demand and traffic congestion.

Road Safety

The IAC report identified key issues related to road safety include pedestrian and cyclist safety as well as access to Wesburn Park.

I agree with the IAC that the Traffic Management Plan required under the draft CEMP (mitigation measure TP1) is sufficiently comprehensive and includes several requirements to address road safety issues through the construction phase. The CEMP also includes mitigation measure TP4 which requires the assessment and reinstatement or improvement of assets to the pre-construction condition or better where required. A Road Safety Audit is also required to verify that traffic risks can be managed during operations.

The lack of existing footpaths for pedestrians in Warburton was noted by the IAC during site inspection. This is acknowledged as an existing issue and not one generated by the project.

The IAC identified road safety concerns are related primarily to the interaction of traffic, pedestrians and cyclists during construction of the main infrastructure items, and during operation at points where the trails intersect with other transport modes. I support the view of the IAC that road safety issues associated with the construction of the project can be appropriately managed under the Traffic Management Plan required under the CEMP.

Where walking trails, mountain bike trails and roads intersect, the proponent proposed in the CEMP that calming measures and sight lines would be used to slow mountain bikers. The IAC noted these locations are also proposed to be included in the Road Safety Audit required under mitigation measure TP3 in the OEMP. Access to and from the trail heads will be primarily via the two new bridges proposed as part of the Project, as well as relying on existing cycle or shared paths including the Rail Trail and the O'Shannassy Aqueduct Trail. I support IAC's finding that road safety impacts can be successfully managed acceptably with the implementation of the mitigation measures as outlined in the EMF.

Emergency Access

The EES Traffic and Transport Impact Assessment confirms all trail heads are accessible via existing public roads which would also be used by emergency services. It is to be noted that the mountain trails would not be operating during snow season or when there is fire risk within the area (high/severe to catastrophic fire risk level). If required, a helicopter could land at Wesburn Park in response to an emergency in relation to a cyclist accident. Some roads, including Edwardstown Road and Cemetery Track have been identified as having narrow cross-sectional width with no shoulders. A road width equal or greater than four metres still allows bidirectional vehicular passage provided vehicles slow down to allow opposing vehicles to pass.

Proposed mitigation measures for emergency access in the EES include a Road Safety Audit (mitigation measure TP3) to be conducted along the length and intersections of Edwardstown Road and Cemetery Track to confirm adequate emergency access and identify any sight and surface issues. Mitigation measure TP4 also proposes to improve improvement works which would include potential road surface upgrades subject to results of the proposed road safety audit and emergency vehicle access.

The IAC report noted a significant number of submissions expressed concern with the ability to get people out of Warburton in an emergency. Submitters from the local community were also not confident that an Emergency Access Plan or Emergency Management Plan could overcome the existing issues or manage the addition of extra traffic and visitors.

To support further assessment and planning for access/egress in emergency situations, I agree with the recommendation of IAC to strengthen mitigation measure TP7 to make preparation of an Emergency Access Plan mandatory prior to construction commencing with a review also required prior to operations. With implementation of the proposed mitigation measures, including the additions proposed by the IAC, I consider emergency access will be able to be acceptably managed for the project.

Assessment

I support the recommendations of the IAC to strengthen the mitigation measures for traffic and transport management, as well as for emergency access. It is my assessment that, with the implementation of mitigation measures including the IAC's proposed changes and the further refinements set out in this assessment, the residual impacts on traffic and transport (including for emergency access) associated with the project can be managed to acceptable levels.

I acknowledge the project may reconsider its approach to the Mount Donna Buang trailhead and associated shuttle buses and drop off points in the context of my recommendation to not implement Trails 1, 45, 46 and 47 as proposed in the EES. Any such changes would need to meet assessment and approval requirements in line with relevant legislation. I recommended that consultations with relevant Government and community stakeholders regarding any changes to project elements are conducted to help ensure project design and mitigation measures are adapted appropriately.

I have also addressed amenity impacts associated with traffic and transport in Section 6.4 of this assessment and emergency management issues are further discussed in Section 6.7.

6.7 Bushfire and emergency management

Evaluation objective

Minimise potential adverse social, economic, amenity and land use effects at local and regional scales.

Assessment context

Bushfire and emergency management risks and issues are addressed in Chapters 11 and 12 of the EES and Technical Appendix D (the Land Use and Planning Impact Assessment Report prepared by AECOM). The EES also included a Bushfire Assessment prepared by Biosis (Appendix G to the Land Use and Planning Impact Assessment). Chapter 14 of the IAC's report discusses the IAC's findings in relation to bushfire and emergency management. Chapter 12 of the IAC's report discusses emergency access and my assessment of this is provided in Section 6.6.

The EMF proposed 4 key mitigation measures to manage bushfire risk and emergencies. These have been the subject of recommendations by the IAC.

The EES Bushfire Assessment characterised Warburton and surrounds as a "relatively high" bushfire risk location particularly due to the dense forested vegetation and steep slopes close to the township. The Bushfire Assessment report also notes that the highest risk elements of the project are the trail heads located at Mount Tugwell and Mount Donna Buang, given the single road access into those locations. The Bushfire Assessment concluded that visitors using the lower parts of the network, closer to Warburton and Wesburn townships would be at a lower risk as these visitors would have easier options for egress in the event of a fire and slightly easier access to neighbourhood safer places in Warburton, Millgrove and Yarra Junction. Key issues and potential effects investigated in the EES included:

- potential for the project to increase bushfire risk due to construction activities (e.g. hot works and fuel usage);
- potential for the project to increase bushfire risk due to increased visitation (particularly from having more people in the area); and
- increased demand on emergency services.

As outlined by the IAC, the proponent proposed a number of mitigation measures for bushfire risk and emergencies in the EES including:

- BM08 – a Bushfire and Emergency Management Plan for both the construction and operations phases (substantial additions were made to BM08 in the Final Hearing Versions of the CEMP [Tabled Document 158] and OEMP [Tabled Document 159]);
- TP7 – an Emergency Access Plan for the operations phase;

- SM9 – maintain Warburton residents' access to appropriate community infrastructure including emergency management and emergency services;
- TP1 – consideration of emergency situations in the Traffic Management Plan for the construction phase; and
- specific monitoring and reporting requirements for bushfire were provided in the EMF.

Discussion

Bushfire risk

The EES Bushfire Assessment concluded that the increased risk of ignition from construction activities (such as from hot works) is able to be managed effectively via the measures proposed in the CEMP. The IAC was generally supportive of the mitigation measures proposed in the CEMP to manage bushfire risk during construction. Additionally, the IAC supported the view of the CFA that any landscaping or revegetation planting along Martyr Road (to screen any noise barriers or fencing) for the project needs to be undertaken in a manner that does not increase the bushfire risk to residents. I support this finding and the recommended updates to mitigation measure NM05 to account for this, to help ensure bushfire risk for local residences is minimised.

The IAC considered the issue of which radiant heat exposure rating should be used for trail heads with consideration of the submission by the CFA. Site-based exposure is a measure of radiant heat exposure that is used as a measure of life safety for the declaration of Neighbourhood Safer places, locating development, and defining building design. The IAC did not recommend a specific site-based exposure rating for most of the trail heads, mainly as they considered that DELWP and/or Parks Victoria are best placed to design, assess and approve trail heads across their land tenures. The exception to this is the Warburton Golf Course trail head, which is located on private land. To appropriately minimise fire risk for any landscaping and construction works in the immediate vicinity of the existing buildings at the Golf Course trail head, the IAC has recommended the trail head should have a site-based maximum radiant heat exposure rating of 12.5 kilowatts per square metre. I support this recommendation and agree that DELWP and/or Parks Victoria are best placed to identify appropriate maximum radiant heat exposure ratings for the other trail heads given they are the land managers of those areas.

For the operations, the EES Bushfire Assessment concludes that by attracting additional visitors to the project area, bushfire risk would be expected to increase. This is because, in the event of a bushfire additional people would be in the area due to the project, which would increase demand on the transport network (for both the community and emergency services). A key issue explored by the IAC for the operations is the proposed triggers for closure of the project due to fire danger. It was noted by the IAC that there is currently a difference between the proposed fire danger ratings that would trigger closure of the project within the Yarra Ranges National Park, compared to areas outside the park. While Mr Potter (an expert witness for the proponent) and Yarra Ranges Council supported closure of the trails at a Fire Danger Rating of Severe or above Parks Victoria indicated that the national park remains open on Severe fire danger rating days (it is only closed on extreme fire danger rating days). The IAC noted that a new fire danger rating system is being introduced for Australia that will replace the current model and that this is an opportunity to align the closure of the Yarra Ranges National Park and the trails to the same fire danger rating. The IAC therefore recommended that Yarra Ranges Council seek agreement with Parks Victoria to align the closure of the national park with the closure of the trails, on 'High' fire danger days (as described in the Australian Fire Danger Rating System). I support these findings and recommendations and I also recommend that the CFA is included in these discussions to help ensure a consistent approach.

The IAC agreed with the CFA's submission that trail use and visitation to the Project area should be actively discouraged on days of elevated fire danger. The measures proposed to be implemented to make riders aware of trail closures on high fire risk days were considered by the IAC. The IAC recommended that closures should be enforced not only by stopping of the shuttle bus service, but also by placing barriers across the trails so that riders do not enter trails when the fire danger rating triggers closure of the national

park and the trails. This measure was included in a new mitigation measure proposed by the IAC in Appendix F of the IAC report- BEM01 (Bushfire Management Strategy & Emergency Management Plan). While I support the intention of this, it is my recommendation that barriers should only be placed across trails if and when these do not present a safety risk to riders. In locations where physical barriers are not appropriate, signage can be used to alert riders to trail closures. As indicated in the IAC's recommended EMF (IAC report Appendix F), the trail closures should also be communicated via messaging boards, social media accounts and direct engagement with the community.

Related to this, the IAC also recommended that accurate trail conditions, including the fire risk and weather conditions, should be displayed at the trail heads, similar to the display of conditions at beaches and on ski trails. This was recommended by the IAC particularly as alerts (e.g. via email or social media) may not be received by trail users while using the trails. I agree with this recommendation to help ensure that fire danger ratings are clearly communicated to riders actively using the trails.

The IAC considered the issue of mobile phone coverage and access to alerts in relation to managing bushfire risk. The IAC accepted the submissions from many local residents that mobile phone coverage in the project area is patchy and unreliable, and noted that this may affect rider's ability to receive emergency alerts and make phone calls in emergency situations. To assist in addressing these issues, the IAC recommended changes to mitigation measure BM08[9] including the need for use of emergency markers and the display of trail conditions including the fire risk and weather conditions at the trailheads.

Emergency markers are currently used by the CFA to help identify locations where assistance is required in an emergency situation. The IAC recommended that the existing CFA emergency marker system should be expanded to include the project's trail network and trail heads, and appropriately integrated into Victoria's emergency call-taking and response system. I support these recommendations to assist in ensuring a rapid response to emergency situations.

Emergency response

The main emergency response mitigation measure outlined in the EES was for an Emergency Management Plan to be developed with consideration of the existing Yarra Ranges Council Municipal Emergency Management Plan and Parks Victoria Yarra Ranges National Park Emergency Management Plan. Yarra Ranges Council tabled a draft of the Emergency Management Plan during the Hearing (Tabled Document 58), but this was not exhibited with the EES and draft PSA. In the IAC report there is a focus on issues related to the content and timing of the Emergency Management Plan as well as impacts on the emergency response services resulting from the project. I also note a number of changes were made to BM08 in the final hearing versions of the CEMP and OEMP (Tabled Documents 158 and 159), to address concerns raised in submissions regarding emergency management.

The IAC recommended that the Emergency Management Plan be prepared and approved prior to construction of the Project and be tested for implementation prior to commencement of operations. I support the early preparation of the Emergency Management Plan to help ensure robust emergency response measures are in place at the commencement of construction. In line with the IAC's recommendation, I also support the view that the Emergency Management Plan should be periodically reviewed and updated throughout the life of the Project to ensure its currency.

Consultation with relevant stakeholders will be important to ensure the Emergency Management Plan provides a coordinated approach to responding to emergency situations and is consistent with plans/procedures of other relevant services in the area. I therefore support the recommendation of the IAC that the Emergency Management Plan must be developed in consultation with emergency and medical services at the municipal and local level, and local volunteer organisations including the Warburton Emergency Planning Group.

[9] I note BM08 was changed to BEM01 in the IAC's recommended version of the EMF (Appendix F of IAC report)

The CFA and many local submitters considered that the Emergency Management Plan should not rely on the existing bushfire safety infrastructure in the Warburton area to provide shelter for trail users, and that shelter may need to be sought external to Warburton. I support the view of the IAC in response to these submissions that the Emergency Management Plan should consider the need for trail users to be evacuated from the area in certain situations. Further consultation with the CFA and other relevant stakeholders will be required to refine the optimal responses to various emergency scenarios.

Submitters raised concerns that medical needs of emergency situations may not be able to be met with existing medical services available in Warburton. The IAC acknowledged that the project has the potential to increase strain on existing medical services with a likely increase in accidents requiring medical intervention. To help address this, I support the IAC's view that the Emergency Management Plan needs to detail how trail users will receive medical care, and how this will be communicated to trail users and to the broader community. I also support the IAC's recommendation that the Emergency Management Plan must be developed in consultation with emergency and medical services at the municipal and local level, as well as local volunteer organisations including the Warburton Emergency Planning Group.

The Warburton Emergency Planning Group submitted that it opposed the project due to the impact on emergency response from bushfire risk, traffic congestion and housing availability for its pool of volunteers. The IAC acknowledged the key role that volunteers can play in providing assistance in emergency situations. I support the recommendation of the IAC that any anticipated shortfall in volunteer capacity needs to be considered and planned for in the Emergency Management Plan, to help ensure sufficient local volunteer capacity is available to help support emergency services to respond to incidents.

Assessment

It is my assessment that, with the implementation of mitigation measures including the IAC's proposed changes and the further refinements set out in this assessment, the residual impacts on bushfire and emergency management associated with the project can be acceptably managed.

Closure of all project trails on high fire risk days will be a key measure to reduce bushfire risk during operations. As recommended by the IAC, seeking agreement between Yarra Ranges Council and Parks Victoria to align the closure of the national park with the closure of the trails on 'High' fire danger days will assist in ensuring a coordinated response. While I support the IAC's proposed amendments to the mitigation measures for trail closures, I recommend that barriers should only be placed across trails to alert riders of trail closures if these do not present a safety risk to riders.

In relation to emergency response, I agree with the IAC that the Emergency Management Plan will play a key role in mitigating bushfire risk and will help facilitate a rapid response to emergency situations. I support the IAC's recommendations for strengthening this plan, particularly through broader consultation with a range of stakeholders in the region.

My assessment regarding emergency access is provided in Section 6.6 of this report.

6.8 Matters of national environmental significance

Evaluation objective

Avoid and where avoidance is not possible, minimise potential adverse effects on native vegetation and animals (particularly listed threatened species and their habitat and listed ecological communities), as well as address offset requirements consistent with state and Commonwealth policies.

Assessment context

Under the EPBC Act bilateral agreement between the Australian and Victorian governments, the Warburton Mountain Bike Destination project EES and this assessment need to examine the likely impacts on matters of national environmental significance (MNES), relevant to the controlling provisions identified in the

Commonwealth EPBC Act controlled action decision, i.e. listed threatened species and communities (sections 18 and 18A).

This section consolidates information on the likely effects of the proposal on MNES protected under the EPBC Act, drawing upon the assessment of specific matters discussed in other sections of my assessment. This includes assessment findings on biodiversity and habitats (Section 6.1) and surface and groundwater (Section 6.2).

Potential impacts on MNES are assessed in Technical Report A and summarised in Chapter 14 of the EES. More detailed information about potential impacts that relate to my assessment of impacts on MNES can be found in Chapter 8 of the EES. The key finding of the EES was that there are unlikely to be significant impacts on MNES, namely nationally significant flora or fauna species or ecological communities.

Chapter 16 of the IAC report summarised the likely impacts on MNES, with detailed discussion of evidence and submissions related to MNES provided in Chapter 5, 6, 7 and 9. The overall finding of the IAC was that residual impacts on MNES will be sufficiently avoided or minimised through implementation of mitigation measures.

Discussion

The IAC noted that whilst Mount Donna Buang Wingless Stonefly is not currently listed as a MNES, a nomination for the listing of the species under the EPBC Act is pending. The IAC concluded that modifications to the project are required to manage the impacts of the species to acceptable levels. As the species did not have listing status under the EPBC Act at the time a referral decision was made (under section 75 of EPBC Act), impacts to the species do not need to be considered in the context of the relevant controlling provisions by the Commonwealth when determining whether or not to approve this controlled action. I have not included a discussion of impacts on the species in this appendix. This species is discussed in detail in Chapter 8 of the IAC report and Section 6.1 of my assessment in the context of its state listing under the FFG Act.

EPBC Act listed threatened species and communities

EPBC Act-listed threatened species identified as having a medium or higher likelihood of occurrence in the project areas were assessed in the EES (Table A2.2 of Appendix 2 and Table A3.2 of Appendix 3 of Technical Report A), including:

- Round-leaf Pomaderris *Pomaderris vacciniifolia*;
- Tall Astelia *Astelia australiana*;
- Leadbeater's Possum *Gymnobelideus leadbeateri*;
- Swift Parrot *Lathamus discolor*;
- Spot-tailed Quoll *Dasyurus maculatus maculatus;*
- Smoky Mouse *Pseudomys fumeus*;
- Southern Brown Bandicoot *Isoodon obesulus obesulus*;
- Macquarie Perch *Macquaria australasica;*
- White-throated Needletail *Hirundapus caudacutus*;
- Southern Greater Glider *Petauroides volans*;
- Broad-toothed Rat *Mastacomys fuscus mordicus*;
- Grey-headed Flying-fox *Pteropus poliocephalus*;
- Australian Grayling *Prototroctes maraena*; and
- Murray Cod *Maccullochella peelii*.

One EPBC Act-listed ecological community which was identified as having potential to occur within the project area was assessed in the EES was the Alpine *Sphagnum* Bogs and Associated Fens.

EES approach to targeted surveys and habitat assessments for threatened species

Targeted surveys were not undertaken for any EPBC Act-listed threatened flora and fauna species within the project area. Technical Report A describes that the ecology assessments adopted the approach of assuming presence of threatened species with a medium or higher likelihood of occurrence within the project area, within areas of suitable habitat. The EES has adopted the approach to avoid and mitigate impacts in areas of habitat where species are assumed to be present.

For most threatened species, detailed habitat assessments and mapping of suitable habitat was not undertaken. The identification of suitable habitat for threatened species was predominantly based on vegetation mapping undertaken for the general ecological surveys. Descriptions of habitat for these species are qualitative, rather than quantitative. For most threatened species the habitat maps provided are based on DELWP's Habitat Importance Maps.

The detailed rationale for survey and assessment effort for threatened species is contained within Table 2 of Technical Report A. It is stated in section 2.2.1 of this report that:

"Survey and assessment effort was not expended where:

- Impacts are likely to be minimal or indirect in nature on a particular value(s) (e.g. hollow-bearing trees to be avoided and forest canopies will remain intact).
- There is a reasonable body of knowledge for a particular species' habitat preferences and this information can be used to characterise existing conditions and conduct an appropriate level of impact assessment.
- Where proposed mitigation actions (such as pre-construction micro-siting) can be demonstrated to be effective measures for avoiding and minimising impacts on particular values.
- For highly cryptic species where survey effort is considered highly intensive and impractical, and where mitigation measures can be applied to minimise habitat impacts for these cryptic species."

I acknowledge both the practical difficulties of undertaking targeted surveys for a large number of threatened species along such a long and narrow alignment through steep terrain and dense vegetation and the likelihood that some species, even if they were not detected, would still need to be assumed present due to the high risk of false negatives. However, I consider that detailed habitat mapping, undertaken by qualified botanists and zoologists along the whole alignment would have informed an improved assessment of impacts and enabled further avoidance of this habitat through trail realignment and micro-siting. Without this demonstration of habitat avoidance, the project has a high reliance on multiple detailed mitigation measures to reduce residual impacts to threatened species. As discussed in Section 6.1 of my assessment, comprehensive pre-construction targeted surveys may not be required for all threatened species, but I recommend targeted surveys be undertaken for those species which have the highest risk of population impacts without survey. This is important in order to inform avoidance during design and micro-siting of the trails. These may be undertaken during micro-siting, where seasonally appropriate. The approach to these surveys is to be determined in consultation with and to the satisfaction of DELWP[10]. This may include some EPBC Act listed species if appropriate.

I note that in the absence of detailed habitat mapping for many threatened species, assuming the presence of species by broad vegetation type is likely to over rather than under-estimate the amount of habitat to be impacted. Consequently, the mitigation measures proposed to reduce impacts on threatened species will need to be applied to all areas of assumed habitat.

EES approach to mitigation measures

The EES included 78 mitigation measures to manage and reduce impacts on biodiversity values and a large number of these will either directly or indirectly reduce residual impacts on threatened species listed under the EPBC Act. There are two versions of many mitigation measures, one for construction to be included in the Construction Environmental Management Plan and one for operation, to be included in the Operations

[10] Specifically, the DELWP Regional Director Port Phillip Region (or delegate)

Environmental Management Plan. The IAC recommended additions and/or amendments to a number of these measures, most of which I have supported, which will further reduce impacts on threatened species. Additionally, I have recommended that an independent qualified ecologist be present during micro-siting along the entire alignment, which will enable further avoidance and minimisation of impacts on threatened species.

General mitigation measures which are relevant to many of the EPBC Act listed species relevant to the project are summarised below:

- BM03 - Follow procedures for flagging of the final trail alignment and demarcating environmental values to be avoided e.g., 'no-go zones' during works.
- BM04 - The CEMP sets out the requirements and processes for the project with regards to the management of potential impacts to biodiversity values. Follow the CEMP monitoring, reporting, auditing, and complaint management processes.
- BM07 - Compulsory in-person environmental induction and assessment for construction/operations phase workers. Induction to cover all biodiversity values present in the project area.
- BM16 - Observations of the above would be entered into the GIS platform and records of significant flora, significant fauna and threatened ecological communities would be periodically uploaded to the VBA. Where there is potential for harm of threatened species, works would be stopped until the risk of harm has been removed.
- BM17 - Allow and assist native vegetation to regenerate within construction footprint to a 30 to 60 centimetre wide tread width.
- BM19 - Removal of vegetation would be to the minimum extent required, according to variable trail construction footprint which is a function of slope class.
- BM20 - The project would support existing pest animal programs conducted by working with public land managers. Support would be implemented for the entire life of the project i.e. as long as the trails remain in use.
- BM22 - A comprehensive weed management program would be implemented along and in the immediate vicinity of trails. The program would be developed in consultation with land managers and would continue for as long as the trails remain in use.
- BM25 - Implement appropriate hygiene procedures for weeds / pathogens throughout the trail alignment.
- BM26 – Construction/operations staff trained as part of site induction to identify signs of plan pathogens e.g. Myrtle Wilt and to implement procedures to minimise risk of spread.
- BM27- Implement commissioning & maintenance schedule and procedures for bike washing facilities as per SWM14. These facilities would be maintained for the entire life of the project i.e. as long as the trails remain in use. The washdown facility should be regularly restocked with the required fungicide. Provide adequate communication and education to washdown facility trail users.
- BM31 - All waterway crossings are to be elevated by installing small bridges on raised pedestals either side of the waterway. All other waterway crossings would involve bridges or boardwalks where deemed appropriate.
- BM32 - Trail micro-siting to identify narrowest practicable crossing location where waterway crossing required as per SWM01.
- BM33 - Construction of all waterway crossings, whether permanent waterways or intermittent, must follow Melbourne Water requirements for works on waterways & crossings and is to be supervised and certified by a suitably qualified person.
- BM34- All waterway crossings must be inspected and maintained by a suitably qualified person as per GTM05.

- BM35 - All waterways are designated no-go zones during construction and operations unless works are required directly in / adjacent to waterway.
- BM36 - No instream works within Yarra River to minimise disturbance and alterations to existing conditions.
- BM40-BM48 – Detailed mitigation measures to prevent impacts to Cool Temperate Rainforest, Cool Temperate Mixed Forest and Myrtle Beech trees during construction and operations.
- BM62 – Measures to minimise impacts to habitat trees, including trees deemed hazardous.
- BM66 - Micro-siting of the final trail alignment in high risk areas to avoid significant flora in consultation with a suitably qualified independent ecologist on-site during a seasonally appropriate period for the target species.
- BM67 - Native vegetation (trees including mid-storey species) removal is subject to the following constraints:
    1. No trees (including mid-storey trees) with DBH > 10 centimetres are to be removed in the Yarra Ranges National Park (unless condition 3) applies).
    2. Within the state forest trees < 20 centimetres DBH in single age stands of Eucalyptus spp. and mid-storey (i.e. regrowth following bushfire) may be removed.
    3. Excluding areas of suitable habitat for Leadbeater's Possum, any small dead trees (< 20 centimetres DBH) within 2 metres of the trail may require removal if significant defects are identified. Such trees would be felled and kept nearby as habitat logs (coarse woody debris).
- BM69 - Minimise impacts to trees through micro-siting and adequate implementation of sympathetic mitigation measures.
- BM71 - Trail micro-siting to avoid existing stands of dense vegetation, particularly midstorey vegetation between 1 to 5 metres in height, wherever possible.
- BM72 - All large hollow-bearing canopy trees (dead and alive) are to be retained with no substantial works encroachment that would compromise the health and viability of such trees.
- BM73 - No construction activities at night. No use of trail infrastructure in the Yarra Ranges National Park at night. Night riding allowed for selected trails within State Park.
- BM74 - Microsite final trail alignment to avoid, minimise and appropriately buffer any burrows / nests / roosting sites for native fauna identified during construction activities.
- BM77 - Management of potential impacts from noise, vibrations and air quality as outlined in NM01 to NM06 and AM01 to AM07.

Round-leaf Pomaderris

Round-leaf Pomaderris is listed as Critically Endangered under the EPBC Act. The EES identified that the species has a high likelihood of occurrence within the project area (Table A2.2., Appendix 2 of Technical Report A). The project area contains suitable habitat for the species in forest on the lower slopes, in proximity to major drainage lines including the Yarra River, Dee River, and the lower reaches of Scotchmans Creek, Backstairs Creek, Four Mile Creek, Cemetery Creek and Yankee Jims Creek (Technical Report A). The area of suitable habitat for the species within the project area was not quantified during the EES. A small population of the species occurs at East Warburton, 2.5 kilometres east of Trail 8. The locations of this population and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.65 of Technical Report A.

Targeted surveys and detailed habitat mapping were not undertaken for Round-leaf Pomaderris; however, areas of suitable habitat were inspected during general ecological field surveys (between 2019 and 2021) and the species was not observed (EES Chapter 14). Technical Report A states that the entire trail alignment was walked by qualified ecologists during the general ecological assessments and that these surveys are considered adequate to assess potential impacts on the species. It is stated that the species is highly

distinctive and can be detected year-round, making it likely that if any individuals of the species were present within the project area they would have been identified (Technical report A).

An assessment of the impacts of the project on Round-leaf Pomaderris under the Significant Impact Guidelines 1.1[11] for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). On the basis that the species has not been detected in the project area and the nearest population will not be impacted by the project, I agree that there are unlikely to be significant impacts on this species.

Tall Astelia

Tall Astelia is listed as Vulnerable under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A2.2, Appendix 2 of Technical Report A). The project area contains suitable wet forest and rainforest habitat for the species, particularly around the heads of gullies and along stream margins in areas identified as the Cool Temperate Rainforest and Cool Temperate Mixed Forest FFG Act listed communities (Technical Report A). The area of suitable habitat for the species within the project area was not quantified during the EES. There are seven records of the species within 10 kilometres of the project area, associated with Powelltown-Beenak populations. The closest record is 7.5 kilometres to the south of the project area. The locations of these records and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.34 of Technical Report A.

Targeted surveys and detailed habitat mapping were not undertaken for Tall Astelia; however, areas of suitable habitat were inspected during general ecological field surveys (between 2019 and 2021) and the species was not observed (EES Chapter 14). Technical Report A states that the entire trail alignment network was walked by qualified ecologists during the general ecological assessments and that these surveys are considered adequate to assess potential impacts on the species. It is stated that the species is highly distinctive and can be detected year-round, making it likely that if any individuals of the species were present within the project area they would have been identified (Technical report A).

An assessment of the impacts of the project on Tall Astelia under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). On the basis that the species has not been detected in the project area and the nearest populations will not be impacted by the project, I agree that there are unlikely to be significant impacts on this species.

Leadbeater's Possum

Leadbeater's Possum is listed as Critically Endangered under the EPBC Act. The EES identified that the species has a high likelihood of occurrence within the project area (Table A3.2., Appendix 3 of Technical Report A). Habitat and records of the species occur throughout the project area, in both Yarra Ranges National Park and Yarra State Forest. Technical Report A states that there are 303 VBA records for the species within the project search area and Zoos Victoria provided details of an additional seven unpublished records of the species in new locations at Mount Donna Buang and Ben Cairn. The locations of these records and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.8 of Technical Report A. More detailed maps showing VBA and Parks Victoria records, nestbox locations and DELWP records with buffers are show in figures 10.1 and 10.2 of the Technical Report A. The EES identified that the project area supports known colonies of the species. Habitat for the species within the project area is comprised of areas of damp and wet forest with hollow-bearing trees and a well-connected sub-canopy.

Targeted surveys were not undertaken for the species. The project ecological consultant attended an on-site meeting, including a habitat assessment for Leadbeater's Possum, with representatives from Zoos Victoria. This resulted in the realignment of Trail 1 between Mount Donna Buang and Ben Cairn where the

11. Department of Environment (2013) Matters of National Environmental Significance: Significant impact guidelines 1.1., Environment Protection and Biodiversity Conservation Act 1999. Department of Environment, Australian Government.

trail had potential to directly impact dense montane thicket habitat for the species and translocation recipient sites. The mapping of this habitat is shown in Figure 10.3 of Technical Report A. This detailed habitat assessment focussed on the upper sections Trail 1 but detailed habitat assessments were not undertaken for the lower sections of Trail 1 or for the other trail alignments. Technical Report A describes how Trails 45 and 46 were aligned to avoid small open thickets which are potential habitat for the species (shown in Figure 10.5), however there does not appear to have been a systematic habitat assessment undertaken for these trails.

It would have been preferable for targeted surveys to have been undertaken in areas of suitable habitat where the species has not been recorded, although I do note the difficulties in accessing this steep and dense terrain over such a long network, particularly for night-time surveys. Furthermore, the species is highly cryptic and even if it were not detected, it may have been necessary to assume presence regardless.

Detailed habitat mapping, undertaken by a qualified zoologist along the whole alignment would have informed an improved assessment of impacts and in doing so enabled further avoidance of this habitat for Leadbeater's Possum ahead of trail realignment and micro-siting. However, I note that vegetation of a height greater than 2.5 metres is not proposed to be removed by the project and information provided to the IAC by the Friends of Leadbeater's Possum states that the species prefers vegetation 5 to 10 metres in height for their movements. I support the findings of the EES that the project is unlikely to significantly impact movement of the species in the tree canopy as vegetation at this height will not be removed. However, I have recommended that an independent qualified ecologist be present during micro-siting along the entire alignment, which will enable further avoidance and minimisation of impacts on high quality habitat for Leadbeater's Possum through micro-siting.

The southern part of Yarra Ranges National Park is recognised as a stronghold for Leadbeater's Possum in both the draft National Recovery Plan[12] and FFG Act Action Statement[13] for the species. Translocation recipient sites and research sites for the species occur in habitat around Mount Donna Buang and Ben Cairn, which are close to Trail 1. These areas contain nest-boxes installed for the species as well as natural habitat features including hollow-bearing trees and areas with high stem densities or mid-storey species (montane thicket vegetation) which are favoured by the species. Areas of montane thicket vegetation within the project area are considered to be groundwater dependent ecosystems (GDEs, Technical Report A).

Habitat for Leadbeater's Possum in the Yarra State Forest is taller and more open than that in the national park, with a sub-canopy dominated by Silver Wattles. These areas were logged between the 1970s and late 1980s. The species has been recorded from locations around Mount Bride and the southern-most proposed trails in Yarra State Forest as recently as 2016 (Technical Report A). Trails in the southeast of the state forest are relatively close to confirmed records of Leadbeater's Possum (including sections of Trails 38, 49, 50 and 51).

Key mitigation measures proposed for Leadbeater's Possum outlined in the EMF include:

- BM51- Environmental induction for construction workers identifying high quality habitat indicators;
- BM52- Leadbeater's Possum habitat management - minimising removal of suitable habitat by constraining the removal of mid-storey trees (greater than 10 cm DBH in the national park and greater than 20 cm in the state forest) and preventing removal of dense stands of montane thickets anywhere in the Project area;
- BM53 - Micro-siting within Leadbeater's Possum habitat to be guided by an ecologist; and
- BM73 - No night riding in the national park. To be allowed for selected trails within State Park.

12. Commonwealth of Australia 2016, National Recovery Plan for Leadbeater's possum (*Gymnobelideus leadbeateri*).

13. Department of Environment and Primary Industries 2014, Action Statement No. 62 Leadbeater's Possum *Gymnobelideus leadbeateri* Flora and Fauna Guarantee Act 1988

Records of Leadbeater's Possum which have been confirmed by DELWP have management buffers around the sites (shown in Figure 10 of Technical Report A). The IAC acknowledged concerns from Parks Victoria that Trail 1 did not avoid the DELWP buffers but accepted the proponent team's response that the purpose of these buffers is predominantly to exclude timber harvesting and fire management activities. The IAC noted that new roads are also excluded from the buffer zones but did not consider that mountain bike trails were comparable to impacts from a road, given vegetation clearance would be limited to a height of 2.5 metres.

The EES states that the proposed alignments were chosen to avoid and minimise impacts on habitat for Leadbeater's Possum. Trail 1 was realigned during the EES process to avoid montane thicket habitat (Technical Report A). The IAC noted that despite this realignment Trail 1 is in very close proximity ("within metres") of mapped dense montane thicket habitat and that this would increase the potential for indirect effects such as weeds, introduced pests, pathogens and groundwater impacts to impact these areas.

The EES states that the alignment of Trails 45 and 46 were designed and micro-sited to avoid impacts on scattered small patches of open montane thicket vegetation between Mount Donna Buang and Mount Victoria. The IAC noted Parks Victoria's concern that habitat assessments for Leadbeater's Possum had not been undertaken to the same standard for Trails 45, 46 and 47, as for Trail 1, despite occurring in comparable habitat. Mapping of habitat was not presented in the EES for the alternative alignments. The IAC accepted evidence that direct impact to the species from the removal of critical habitat elements will be avoided and minimised as much as possible, through the implementation of mitigation measures (BM52 and BM53).

Mitigation measure BM52 constrains the removal of mid-storey trees (greater than 10cm DBH in the national park and greater than 20cm in the state forest). However, noting that within the state forest mid-story trees include Silver Wattle and other Acacia species, which are habitat favoured by the species and can grow very tall with a small DBH, I recommend that this mitigation measure be strengthened to constrain the removal of mid-storey trees greater than 10cm DBH within the state forest along trails which are in the vicinity of known records of Leadbeater's Possum.

While these measures are likely to minimise impacts on Leadbeater's Possum habitat, I am concerned that without detailed habitat mapping for the alternate alignment (Trails 45, 46 and 47) there remains uncertainty about impacts on the species from this alignment, particularly in the absence of targeted surveys. I consider that the removal of these trails from the project would greatly reduce the project's potential impacts on the species, as known important colonies of the species within Yarra Ranges National Park will be avoided and it will greatly reduce the length of trails likely to pass through habitat for the species.

The EES describes residual impacts from trail operation on the Leadbeater's Possum including disturbances to animals, disruption to research and translocation programs, increased predation, habitat modification from weeds and pathogens and habitat damage during trail maintenance. Potential impacts on montane thicket vegetation from changes to groundwater are discussed in Sections 5.1 and 5.2 of my report. The IAC considered that strategies to minimise noise (such as BM73) and other disturbance during construction and operation should be effective to minimise impacts on Leadbeater's Possum. I note however, that policing of night riding in the national park would be very difficult to enforce and it is likely that it would still occur to some degree.

Removal of Trails 1, 45, 46 and 47 from the project would greatly reduce the potential for night disturbance impacts in the most significant Leadbeater's Possum colonies and the areas of highest quality habitat for the species. However, areas of potential impact from night riding also include the state forest where Leadbeater's Possum is known, or likely to occur (e.g. near Trails 38, 49, 50 and 51). I consider night riding could have an unacceptable disturbance impact on Leadbeater's Possum in both the national park and state forest. While night riding could be prohibited in these trails within the southern part of the trail network, doing so for only selected trails within the state forest would also be very difficult to police and could still occur. Permitting night riding in some portions of the trail network is likely to make it more

difficult for both land-managers to police and enforce. It may also result in confusion and in turn reduce the effectiveness of mitigation of potential impacts of night riding on sensitive species, in particular the Leadbeater's Possum. Therefore, I recommend BM73 is amended to adopt a consistent approach across the project, that prohibits night riding on all trails within the network.

The IAC considered that the removal of any hollow-bearing trees in Leadbeater's Possum habitat for the purpose of hazard reduction would be an unacceptable impact. They considered that in these situations the trail should be closed until the hazard had naturally abated. I support that trail closure should be an option, but I also recommend that minor trail realignment is considered in these situations. If the trees do require removal a land manager, ecologist and arboriculture specialist are to be consulted during the removal or pruning of these trees. I consider that the impacts can be appropriately managed and are acceptable. An assessment of the impacts of the project on Leadbeater's Possum under the Significant Impact Guidelines 1.1 for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that, with the implementation of all mitigation measures, the project is unlikely to trigger a significant impact under these criteria. In particular, micro-siting and measures to avoid habitat trees, mid-storey vegetation within the national park and areas with dense stems will assist to avoid impacts on habitat for the species. Removal of Trails 1, 45, 46 and 47 from the project would greatly reduce the residual impacts on this species.

Swift Parrot

Swift Parrot is listed as Critically Endangered under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The locations of previous records for the species are shown in Figure 14.11 of Technical Report A. The EES states that the project area does not contain the preferred winter foraging tree species for Swift Parrot but that planted specimens of these trees are likely to be present nearby in and around the township of Warburton (Chapter 14). It is stated that the species may occasionally utilise these planted trees and fly over sections of the study area. I note that this habitat description fails the mention the importance of lerp as a food source to the species and I consider the species may also forage for lerp within the study area, rather than just flying over it. Targeted surveys were not undertaken for the species.

The IAC noted that a golf course fence may be required as part of the project. This was not assessed during the EES. The IAC asked the proponent if there had been any consideration of a fence at the Warburton Golf Course and if so, what the potential effects would be on fauna. The proponent responded (Tabled Document 140) that the fence would be likely to be a low-level fence set behind a row of trees. Photo examples of possible fence designs were provided in the tabled document.

The IAC noted that if this was required it could have impacts on fauna movement or mortality, with particularly mention of Swift Parrot and Grey-headed Flying-fox. As the impacts of a golf course fence on Swift Parrot have not been assessed, I agree with the IAC's recommendation for the Minister for Planning to have oversight over the fence if required, through a requirement of the Development Plans under Clause 6.1 of the Incorporated Document. The Department of Climate Change, Energy, the Environment and Water may seek further information about the golf course fence and may consider adding conditions about the fence to the approval.

An assessment of the impacts of the project on Swift Parrot under the Significant Impact Guidelines 1.1 for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that with the mitigation measures proposed including additional recommendations of the IAC the project is unlikely to have a significant impact on the species, on the basis that canopy trees are not proposed to be removed and retained trees are to be protected through a range of mitigation measures. Measures to minimise impacts on habitat trees such as BM62, BM67, BM69 and BM72 will also minimise impacts on potential foraging habitat for the species.

Spot-tailed Quoll

Spot-tailed Quoll is listed as Endangered under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that the species is known to occur within high rainfall forest habitat, such as that present throughout the project area (Technical Report A). Two records were found within the project search area; one dated 2006 to the east of Powelltown, around 10 kilometres south of the project area and the other dated 1994 from Badger Creek, around 8 kilometres north-west of the project area. The locations of these records and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.3 of Technical Report A. Targeted surveys and detailed habitat assessments were not undertaken for the species. The species is assumed to be present to inform avoidance and mitigation measures.

Several submitters raised concerns regarding the potential for impacts on biodiversity from human disturbance and fragmentation, including through increased traffic and human presence. Technical Report A acknowledges that wildlife disturbance is a residual risk of the project. Strategies to minimise noise (such as BM73) and other disturbance during construction and operation at night will reduce some of these impacts, though as I have noted above it will be difficult to enforce the limits on night-riding. I note that for a species as cryptic and elusive as Spot-tailed Quoll the impacts of human disturbance may be much greater than for those more tolerant of human presence. Whilst I am concerned about these potential impacts I consider that, following implementation of the proposed mitigation measures, including prohibiting night riding across the project's entire trail network, the residual risk is unlikely to trigger a significant impact under Significant Impact Guidelines 1.1.

The EES identifies that, whilst invasive fauna species (including cats, foxes and deer) are already present within the project area, the project would increase opportunities for the movement and dispersal and of introduced fauna. The conservation advice for Spot-tailed Quoll[14] lists predation by feral cats and European Red Fox as known and suspected threats to the species. The EES proposes to mitigate impacts of invasive fauna by working with relevant land managers to support existing pest animal programs, for the life of the project (BM20). The EES has not provided any details on the level of financial or other support that would be provided by the proponent. I note that given the proposed length of the extra trails within the national park and state forest, the amount of additional pest animal management required to reduce the impacts of these species may be considerable. I recommend that firm commitments to the types and level of support for pest management programs forms part of the formal agreement with landholders. I note that the Department of Climate Change, Energy, the Environment and Water may seek further information about commitments to pest management as part of the approval process and may consider adding conditions about pest management. Provided the proponent's commitments are sufficient to satisfy land managers and regulators that introduced pests can be managed to current levels, I consider this mitigation measure to be acceptable to reduce potential impacts from introduced pests on Spot-tailed Quoll. An assessment of the impacts of the project on Spot-tailed Quoll under the Significant Impact Guidelines 1.1 for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that pest animals and their potential impacts on this species are managed to existing levels.

Smoky Mouse

Smoky Mouse is listed as Endangered under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that Shrubby Foothill Forest dominated by heath and bush pea species provides suitable habitat for the species within the project area (Technical Report A). Around 12 hectares of understory habitat in this forest types is proposed for removal but not all of this is dominated by heath and bush pea species. The amount of habitat which supports heath and bush pea species was not assessed during the EES. Two

14. Threatened Species Scientific Committee 2020. Conservation Advice Dasyurus maculatus maculatus (southeastern mainland population), Spotted-tailed Quoll, south eastern mainland.

previous records of the species occur within the project search area. These were both dated 2019, recorded in State forest near East Warburton, approximately 10 kilometres east of Mount Bride. Modelled habitat for the species, based on DELWP's Habitat Importance Maps is shown in Figure 14.22 of Technical Report A. Targeted surveys and detailed habitat assessments were not undertaken for the species. The species was assumed to be present within suitable habitat to inform the development of avoidance and mitigation measures.

The EES states that the construction of minor trails are unlikely to fragment habitat for the species, as it has been demonstrated to cross large fire breaks in similar habitat elsewhere in Victoria (Chapter 14). The construction of trails may facilitate movement through the landscape by pest species which could lead to increased predation and habitat impacts for Smoky Mouse. It is stated in the EES that the project would support existing pest animal programs by land managers which target foxes, cats and deer, to assist in addressing potential impacts of these pest species (Chapter 14). I have discussed this in detail for Spot-tailed Quoll above and my findings are the same for Smoky Mouse. Provided the proponent's commitments are sufficient to satisfy land managers and regulators that introduced pests can be managed to at least current levels, I consider this mitigation measure to be acceptable to reduce potential impacts from introduced pests on Smoky Mouse.

An assessment of the impacts of the project on Smoky Mouse under the Significant Impact Guidelines 1.1 for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that mitigation measures which effectively reduce the impact of pest animals and their potential impacts on this species to at least existing levels are implemented.

Southern Brown Bandicoot

Southern Brown Bandicoot is listed as Endangered under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that potential habitat for the species occurs in the southern sections of the project area, in drier forest types including Lowland Forest and Valley Heathy Forest. Around 0.8 hectares of understory habitat in these forest types is proposed for removal. The species does not typically occur in the types of closed wet forest present throughout the majority of the project area (Chapter 14). Eighteen previous records occur within the project search area, with the most recent dated 1999 from Millgrove (Technical Report A). The locations of these records are shown in Figure 14.10 of Technical Report A. Targeted surveys and detailed habitat assessments were not undertaken for the species.

The EES states that the construction of minor trails are unlikely to fragment habitat for the species, of affect physical or functional connectivity between populations (Chapter 14). The construction of trails may facilitate movement through the landscape by pest species which could lead to increased predation and habitat impacts for Southern Brown Bandicoot. It is stated in the EES that the project would support existing pest animal programs by land managers which target foxes, cats and deer, to assist in addressing potential impacts of these pest species (Chapter 14). I have discussed this in detail for Spot-tailed Quoll above and my findings are the same for Southern Brown Bandicoot. Provided the proponent's commitments are sufficient to satisfy land managers and regulators that introduced pests can be managed to at least current levels, I consider this mitigation measure to be acceptable to reduce potential impacts from introduced pests on Southern Brown Bandicoot. The species was assumed to be present to inform the development of avoidance and mitigation measures.

An assessment of the impacts of the project on Southern Brown Bandicoot under the Significant Impact Guidelines 1.1 for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that mitigation measures which effectively reduce the impact of pest animals and their potential impacts on this species to at least existing levels are implemented.

Macquarie Perch

Macquarie Perch is listed as Endangered under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that the species naturally resides in the upper reaches of forested catchments with intact riparian vegetation. Habitat for the species includes cool, rocky and slow flowing rivers with deep sections (Technical Report A). The species has been recorded within the Yarra River basin, including during surveys for the Native Fish Report Programs between 2017 and 2019. One record of the species occurs within the project area, from Cement Creek, which is a tributary of the Yarra River. The locations of previous records of the species within the VBA search buffer are shown in Figure 14.13 of Technical Report A. Targeted surveys and detailed habitat assessments were not undertaken for the species. The species was assumed to be present to inform the development of avoidance and mitigation measures.

The EES states that aquatic habitats for the species would not be significantly altered by the project, no barriers to fish movement would be introduced and that sources of indirect impacts to waterways (such as sedimentation) would be managed through effective sediment and erosion control measures for the mountain bike trail construction and operation. I have discussed the potential for surface water impacts and the proposed mitigation measures in Section 6.2 of my assessment. Measures to minimise impacts on waterways such as BM31-36 will reduce impacts on waterways which provide potential habitat for the species.

An assessment of the impacts of the project on Macquarie Perch under the Significant Impact Guidelines 1.1 for Endangered and Critically Endangered species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that mitigation measures which reduce the impact of sedimentation on the Yarra River and its tributaries are effectively implemented.

White-throated Needletail

White-throated Needletail is listed as Vulnerable and migratory under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that the species is present within Australia during the non-breeding period of the year between October and March (Technical Report A). During this time the species is almost exclusively aerial, foraging over a wide range of habitat types and occasionally roosting in tall trees. The EES states that the species may forage over all of the project area on occasion, sometimes and in large numbers, and may roost in the canopy foliage and hollows of tall trees (Technical Report A). 63 previous records of the species occur within the project search area, with the most recent dated 2019. The locations of these records and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.9 of Technical Report A.

An assessment of the impacts of the project on White-throated Needletail under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, on the basis that the species is predominantly aerial in Australia and canopy trees which could be used for roosting are not proposed to be removed.

Southern Greater Glider

At the time the EPBC referral decision was made, the Southern Greater Glider was listed as a Vulnerable species under the EPBC Act. The Federal Minister for the Environment recently decided to upgrade the conservation status of the species from Vulnerable to Endangered, which took effect on 5 July 2022. The EES assessed impacts on the species using the previous conservation status in line with the Department of Climate Change, Energy, Environment and Waters *Listing Events under the EPBC Act* policy statement[15]. In

15. https://www.dcceew.gov.au/sites/default/files/documents/epbc-act-policy-listing-events.pdf

making a decision under the EPBC Act the Federal Minister for the Environment will be required to have regards to the Conservation Advice for the species.

The EES identified that the species has a high likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES describes that habitat for the species particularly includes tall, moist montane forest with hollow-bearing trees. The species is known to occur throughout forest habitat in the local area. 376 records for the species occur within the project search area, with the most recent dated 2020 (Technical Report A). The locations of these records and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.19 of Technical Report A. Targeted surveys and detailed habitat assessments were not undertaken for the species. The species was assumed to be present to inform the development of avoidance and mitigation measures.

The EES states that no large or hollow-bearing trees are proposed to be removed for the construction of the project. The EES states that if hazardous trees require removal or excessive pruning this will be undertaken in consultation with the land manager, ecologist and arboriculture specialist. As discussed in detail in Section 6.1 of my assessment above, the IAC had concerns that micro-siting would not be able to avoid all hazardous trees and that during the lifetime of the project, removal of hazardous trees may be required to ensure public safety. I agree with the IAC's concerns and consider that throughout the life of the project it is probable that some hollow-bearing habitat trees for Southern Greater Glider will require removal. However, I consider that the proposed specialist consultation prior to the removal or pruning of hazardous trees means this is unlikely to have a significant impact on the species. Measures to minimise impacts on habitat trees such as BM62, BM67, BM69 and BM72 will minimise impacts on potential foraging habitat and hollows for the species.

The EES notes that there is limited information on the sensitivity of Southern Greater Glider to noise and construction impacts. It is stated that construction during daylight hours may disturb nesting adults but that the impacts from this noise will be relatively short-term and localised, with 100-200 metres of trail proposed to be built per day (Technical Report A). The EES states that operation of the trails within Yarra Ranges National Park and high quality forest near Mount Bride in Yarra State Forest will be restricted to daylight hours and therefore avoid disturbance to the species when it is active at night. Whilst I generally agree with this, I note that policing of no night riding in the national park or at Mount Bride at night would be very difficult to enforce and it is likely that it would still occur to some extent, particularly if allowed for other trails. Prohibiting night riding in both the national park and state forest by amending BM73 will reduce the likelihood of night time disturbance on the species. Removal of Trails 1, 45, 46 and 47 from the project, which the IAC and I have recommended to minimise impacts on Cool Temperate Rainforest and Cool Temperate Mixed Forest and habitat for Mount Donna Buang Wingless Stonefly, will also reduce the potential for night disturbance impacts to Southern Greater Glider in the highest quality forested habitat.

An assessment of the impacts of the project on Southern Greater Glider under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that the removal of hazardous trees which are hollow-bearing is minimised to the greatest extent practicable and conducted in consultation with fauna specialists.

Broad-toothed Rat

Broad-toothed Rat is listed as Vulnerable under the EPBC Act. The EES identified that the species has a low likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A), based on habitat surveys undertaken. The EES describes that habitat for the species comprises closed vegetation communities such as heathland, grassland and sedgeland and that the species is a specialist feeder on the stems of plants from the Poaceae and Cyperacea families. Ten records for the species occur within the project search area, with the most recent dated 1991. Only one of these records occurs within five kilometres of project area, which is a 1977 record from near Mount Bride, within 150 metres of the project area. The locations of these records and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.9 of Technical Report A.

A habitat assessment for the species was undertaken in areas identified as being potentially suitable during the vegetation assessments. This assessment comprised active searching for the characteristic scats and runways of Broad-toothed Rat in habitat near the 1977 Mount Bride record and in areas identified during the vegetation assessments as supporting a high cover or grasses and/or sedges. A nearby reference site with lowland habitat was visited to confirm the suitability of the assessment method. Figure 6 of Technical Report A shows location where habitat assessments were undertaken (along Trails 45, 46, 48, 49, 56, 57 and 58). No runways or scats of the species were identified during the habitat assessments and no suitable drainage line habitat dominated by sedges and grasses was identified. As a result, it was considered that Broad-toothed Rat has a low likelihood of occurrence in the assessment corridor (Technical report A).

Technical Report A states that Broad-toothed Rat is known to be particularly prone to selective predation by foxes and their habitat is particularly sensitive to damage by deer. It is stated in the EES that the project would support existing pest animal programs by land managers which target foxes, cats and deer, to assist in addressing potential impacts of these pest species (Chapter 14). I have discussed this in detail for Spot-tailed Quoll above and my findings are the same for Broad-toothed Rat. Provided the proponent's commitments are sufficient to satisfy land managers and regulators that introduced pests can be managed to at least current levels, I consider this mitigation measure to be acceptable to reduce potential impacts from introduced pests on Broad-toothed Rat.

An assessment of the impacts of the project on Broad-toothed Rat under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, on the basis that the species is considered to have a low likelihood of occurrence within the project area and provided that mitigation measures which effectively reduce the impact of pest animals and their potential impacts on this species to at least existing levels are implemented.

Grey-headed Flying-fox

Grey-headed Flying-fox is listed as Vulnerable under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES describes that the species is wide-ranging and travels up to 50 kilometres from their roost to forage. The species feeds on the nectar and pollen of plants from the Myrtaceae and Proteaceae families as well as the fruit of both native and introduced trees. Foraging habitat for the species occurs throughout the project area and the species is likely to use food resources throughout the project area on occasion (Technical report A). Four records of the species occur within the project search area, with the most recent dated 2015 from Warburton. The locations of this record and modelled habitat for the species, based on DELWP's Habitat Importance Maps are shown in Figure 14.23 of Technical Report A.

An assessment of the impacts of the project on Grey-headed Flying-fox under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, on the basis that canopy trees which would provide occasional foraging resources for the species are not proposed to be removed. Measures to minimise impacts on habitat trees such as BM62, BM67, BM69 and BM72 will also minimise impacts on potential foraging habitat for the species.

Australian Grayling

Australian Grayling is listed as Vulnerable under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that that this diadromous species spends the majority of its life in freshwater. Whilst the species has a habitat preference for streams with moderate flow, gravel substrates and alternating pool and riffle zones it is also known to occur in turbid water (Technical Report A). A large number of observations have been recorded within the Yarra River basin, including during surveys for the Native Fish Report Programs in 2018 and 2019. The species has been recorded from Wesburn, around 400 metres downstream of the project area. The location of previous records and modelled habitat for the species,

based on DELWP's Habitat Importance Maps, are shown in Figure 14.21 of Technical Report A. Australian Grayling is considered likely to occasionally occur in clear water pools and rapids within the project area (Technical Report A). Targeted surveys and detailed habitat assessments were not undertaken for the species. The species was assumed to be present to inform development of avoidance and mitigation measures.

The EES states that aquatic habitats for the species would not be significantly altered by the project as no barriers to fish movement would be introduced and that indirect impacts to waterways (such as sedimentation) would be managed through effective sediment and erosion control measures for the mountain bike trail construction and operation (Technical Report A). Measures to minimise impacts on waterways such as BM31-36 will reduce impacts on waterways which provide potential habitat for the species.

An assessment of the impacts of the project on Australian Grayling under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that mitigation measures to reduce the impact of sedimentation on the Yarra River and its tributaries are effectively implemented.

Murray Cod

Murray Cod is listed as Vulnerable under the EPBC Act. The EES identified that the species has a medium likelihood of occurrence within the project area (Table A3.2, Appendix 3 of Technical Report A). The EES states that that this species is found in a range of flowing and standing waters but most commonly occurs in sluggish, turbid waters with undercut banks and a high amount of in-stream structure such as large rocks and instream woody habitat (Technical Report A). The species has been introduced to the Yarra River Basin. A large number of observations have been recorded within the Yarra River basin, including during surveys for the Native Fish Report Programs between 2017 and 2019. The majority of the Yarra River population occurs between Warrandyte and Lower Plenty, with lower numbers upstream of Warrandyte. The EES states that due to these lower numbers in this section of the Yarra River and the limited distribution of deep pools, undercut banks and instream woody habitat significant numbers of the species are unlikely to be present within the project area (Technical Report A). The locations of previous records of the species within the VBA search buffer are shown in Figure 14.12 of Technical Report A. Targeted surveys were not undertaken for the species. The species was assumed to be present to inform the development of avoidance and mitigation measures. Measures to minimise impacts on waterways such as BM31-36 will reduce impacts on waterways which provide potential habitat for the species.

An assessment of the impacts of the project on Murray Cod under the Significant Impact Guidelines 1.1 for Vulnerable species was undertaken and it was determined that the species is unlikely to be significantly impacted (EES Chapter 14). I agree that the project is unlikely to have a significant impact on the species, provided that mitigation measures which reduce the impact of sedimentation on the Yarra River and its tributaries are effectively implemented.

Gang-gang Cockatoo

The former Federal Minister for the Environment recently decided to list Gang-gang Cockatoo *Callocephalon fimbriatum* as Endangered under the EPBC Act, which took effect on 2 March 2022. The referral decision (EPBC 2019/8605) pre-dated the new listing of the Gang-gang Cockatoo and therefore the species will not be a relevant consideration for the Australian Government Minister in making an approval decision under the EPBC Act.

Alpine *Sphagnum* Bogs and Associated Fens

Alpine *Sphagnum* Bogs and Associated Fens is a threatened ecological community which is listed as Critically Endangered under the EPBC Act. No ecological vegetation classes associated with this community were mapped during the field surveys for the project. Consequently, the EES concludes that the community

would not be significantly impacted by the project (Chapter 14). I agree that there are unlikely to be significant impacts on the Alpine *Sphagnum* Bog and Associated Fens community

Assessment

It is my assessment that, taking account of the recommendations detailed within this report, the project is unlikely to have significant impacts on EPBC listed MNES:

- The project is unlikely to have significant impacts on Leadbeater's Possum - I consider that the removal of Trails 1, 45, 46 and 47 from the project would further reduce residual impacts on the species by avoiding the areas of highest quality habitat for the species. This is in addition to my recommendation to prohibit night riding across the entire trail network, to minimise risk of potential impacts from night riding on this and other nocturnal species.
- The project is unlikely to have significant impacts on Swift Parrot - I agree with the IAC's recommendation for the Minister for Planning to have oversight over a golf course fence if required, through a requirement of the development plans under Clause 6.1 of the Incorporated Document.
- The project is unlikely to have significant impacts on any of the other EPBC Act-listed threatened species assessed through the EES - I consider that residual impacts on these species will be acceptably avoided or minimised through the effective implementation of the proposed mitigation measures, with my amendments.
- The project is unlikely to have significant impacts on the EPBC Act-listed ecological community Alpine *Sphagnum* Bogs and Associated Fens.
- The Commonwealth may consider adding conditions about a golf course fence, if required, to the approval to ensure the fence does not have a significant impact on EPBC Act-listed threatened species.
- The Commonwealth may also consider adding conditions about pest management to the approval to ensure suitable commitments are made by the proponent to prevent introduced pests having a significant impact on EPBC Act-listed threatened species.

7. Conclusion

The project is expected to give rise to residual impacts particularly to biodiversity values, land use and amenity, surface water, traffic, historic heritage as well as bushfire risk. The project is also expected to result in socioeconomic benefits, particularly through increasing spending within the region, providing job opportunities and diversification of the local economy. Through consideration of project alternatives and the iterative development of mitigation measures, the proponent has sought to avoid and minimise many of the potential impacts as part of the EES process. Importantly, there will also be some further opportunities for reducing residual impacts during approvals, design and delivery of the project, particularly for biodiversity values, such as through implementation of the proposed micro-siting procedure for the final trail alignments.

It is my assessment that the large majority of the trails and other works proposed for project can proceed with acceptable environmental effects, subject to project modifications and an environmental management regime, consistent with the findings and recommendations of this assessment. However, my assessment supports the conclusion of the IAC that Trails 1, 45, 46 and 47 present unacceptable risks of significant effects, particularly on significant stands of Cool Temperate Rainforest and Cool Temperate Mixed Forest, as well as for the Mount Donna Buang Wingless Stonefly, which are of high conservation value to the State. I have therefore concluded that these trails proposed in the EES should not be implemented as part of the project.

Any further consideration of trails proposed within the national park needs to ensure impacts on significant stands of Cool Temperate Rainforest and Cool Temperate Mixed Forest, as well as the Mount Donna Buang Wingless Stonefly and Leadbeater's Possum, is avoided – this needs to be demonstrated to the satisfaction of relevant decision-makers, in particular under the National Parks Act.

The Victorian EES process served as the accredited assessment process for the purposes of examining the significant impacts of this 'controlled action' on MNES under the EPBC Act. My assessment is issued to the Australian Government Minister for Environment and Water to inform the decision about whether and under what conditions to approve the project under the EPBC Act.

It is my assessment that residual impacts on EPBC Act listed species and communities are unlikely to be significant. Residual impacts on these species and communities can be acceptably managed through implementation of mitigation measures and as part of required environmental management and approvals. I support amendments to mitigation measures as recommended by the IAC and further strengthened by my assessment to assist in avoiding and minimising impacts on MNES as detailed in Section 6.8 of my assessment.

My assessment includes specific recommendations to inform the proponent and statutory decision-makers responsible for approval decisions under Victorian and Commonwealth law (as set out within Sections 6 and 7.1). Decision-makers need to consider this assessment before deciding whether and how the project should proceed. As a matter of good practice, I also expect decision-makers to write to me to advise how my assessment was considered and applied.

This assessment includes recommendations on key measures to be included in final environmental management plans developed for the project. These will also need to be reflected appropriately in the final trail designs and development plans to be submitted for approval under the PSA, should the project be approved.

7.1 Summary of response to IAC's recommendations

Tables 4 and 5 summarise my responses to the IAC's recommendations.

Table 4: Response to IAC's primary recommendations

Number	IAC primary recommendation	Summary of Minister's response
1	Modify the Project as follows: Remove Trails 1, 45, 46 and 47 from the Project, as they pose an unacceptable residual risk of significant impact to Cool Temperate Rainforest and Cool Temperate Mixed Forest stands located in the Yarra Ranges National Park.	Supported, as set out within the findings of this assessment.
2	Amend the Environmental Management Framework as shown in Appendix F. Ensure that the various plans to be approved under the Incorporated Document are consistent with the revised Environmental Management Framework, including the IAC's recommended changes to the mitigation measures.	Supported, subject to the inclusion of the additional amendments I have recommended in Table 3.
3	Amend draft Yarra Ranges Planning Scheme Amendment C198yran as follows: • Amend the text of the Incorporated Document as shown in Appendix G. • Amend the exhibited Special Controls Overlap mapping to: • remove Trails 1, 45, 46 and 47 • include the whole of the Warburton Golf Course site at 17 Dammans Road, Warburton • include the land required for the trail heads at Wesburn Park and Mount Tugwell and the two bridges proposed to be constructed as part of the Project.	Generally supported, subject to the inclusion of the additional amendments I have recommended in Table 3. For recommendation 3b I do not support extending the SCO to include the whole of the Warburton Golf Course. The SCO should only be applied to the section of land on the golf course that is to be constructed and used for the project.
4	Seek agreement with Parks Victoria to align the closure of the National Park with the closure of the trails, on 'High' fire danger days (as described in the Australian Fire Danger Rating System).	Supported

Table 5: Response to IAC's other recommendations

Number	IAC recommendation	Summary of Minister's response
1	Amend the Incorporated Document as shown in Appendix G: a) remove Clause 9.3.	Supported. I also recommend adding to the Native Vegetation section of the incorporated document the following requirement: "Before the removal of native vegetation, details of the proposed removal of native vegetation necessary for the construction of the Project must be prepared in accordance with the application requirements in the Guidelines to the satisfaction of the Secretary."
2	Amend the Environmental Management Framework as shown in Appendix F: • in Section 16.3.3 (Construction): a) insert a new mitigation measure BM19A (Calculating native vegetation offsets) b) amend mitigation measure BM70 (Recording of tree impacts).	Supported
3	Amend the Environmental Management Framework as shown in Appendix F: in Section 16.3.3 (Construction):	Supported. Minor realignment of the trails should also be considered in such cases.

Number	IAC recommendation	Summary of Minister's response
	amend mitigation measure BM62 (Habitat trees) in Section 16.3.4 (Operations): amend mitigation measure BM62 (Habitat trees) amend mitigation measure BM10 (Trail maintenance).	
4	Amend the Incorporated Document as shown in Appendix G: a) insert a new Clause 11 to require a Hazardous Tree Assessment	The IAC's recommendation that the hazardous tree assessment include an assessment of the frequency of tree lopping or removal of trees likely to be required during operations is not supported. However, hazardous tree assessment reports should be prepared for each progressive stage of the project to the satisfaction of the DELWP[16] for trails outside the Yarra Ranges National Park, and to the satisfaction of Parks Victoria for trails within Yarra Ranges National Park.
5	Modify the Project as follows: Remove Trails 1, and 45 to 47 from the Project, as they pose an unacceptable residual risk of significant impact to Cool Temperate Rainforest and Cool Temperate Mixed Forest stands located in the Yarra Ranges National Park.	Supported, as set out within the findings of this assessment.
6	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.3 (Construction): • insert a new mitigation measure BM39B (CTR/CTMF and Myrtle Beech buffers) • amend mitigation measure BM43 (Pruning of Myrtle Beech) b) in Section 16.3.4 (Operations): • amend mitigation measure BM43 (Pruning of Myrtle Beech)	Supported. In order to avoid the introduction of Myrtle Wilt in the area of Cool Temperate Mixed Forest near Trail 50, the elevated trail structure already planned at Calder Creek also needs to be extended through the area of Cool Temperate Mixed Forest intersected by this trail and be completed in a manner that avoids damage to any Myrtle Beech trees and drip-lines.
7	If Recommendation 5 is not accepted, amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.3 (Construction): • amend mitigation measure SWM02 (Erosion and sediment controls) • amend mitigation measure SWM07 (Adhere to Stonefly no-go zones) b) in Section 16.3.4 (Operations): • amend mitigation measure SWM02 (Erosion and sediment controls) • amend mitigation measure SWM07 (Adhere to Stonefly no-go zones) • amend mitigation measure BM61A (MDBWS) • amend mitigation measure BM61B (MDBWS monitoring) • insert a new mitigation measure BM61C (MDBWS proactive measures)	Supported. The IAC's recommended changes to SWM07 should also apply to the upper sections of Trails 5, 6 and 8, to assist in avoiding and minimising impacts on the Mount Donna Buang Wingless Stonefly.
8	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • amend mitigation measure BM67 (Native vegetation removal)	Supported. To increase the effectiveness of mitigation of potential impacts of night riding on sensitive nocturnal species, particularly the Leadbeater's Possum, I also recommend BM73

[16] Specifically, the DELWP Regional Director Port Phillip Region (or delegate)

Number	IAC recommendation	Summary of Minister's response
		is amended to strictly prohibit night riding across the project's entire trail network.
9	Amend the Incorporated Document as shown in Appendix G: a) insert a new sub-Clause 6.1(j).	Supported.
10	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • amend mitigation measure BM27 (Maintenance schedule for bike washing facilities)	Supported
11	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.3 (Construction): • amend mitigation measure BM37 (Timing of construction – waterways) • insert a new mitigation measure BM39A (Burrowing crayfish species) b) in Section 16.3.4 (Operations): • insert a new mitigation measure BM39A (Burrowing crayfish species)	Supported
12	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.3 (Construction): • insert a new mitigation measure BM02A (Pre-construction surveys) • insert a new mitigation measure BM63A (Tree Geebung) • insert a new mitigation measure BM63B (Tree ferns)	Supported. While comprehensive seasonally appropriate pre-construction surveys for all threatened flora and fauna are not required, targeted surveys must be undertaken for those species which have the highest risk of impacts without survey, with the approach to be determined in consultation with and to the satisfaction of DELWP. These may be undertaken during micro-siting, where seasonally appropriate. A suitably qualified, independent ecologist is to be present during all micro-siting to help ensure impacts on threatened flora and fauna are avoided and minimised where possible. I recommend that the hierarchy of values is to be developed in consultation with and to the satisfaction of DELWP Port Phillip Region.
13	Amend the Incorporated Document as shown in Appendix G: a) add "and Melbourne Water" to the end of Clauses 7.1 and 7.3.	Supported. Clauses 7.1 and 7.3 should also refer to consultation with DELWP Port Phillip Region.
14	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • insert a new mitigation measure TP1 (Operations Traffic Management Plan) • amend mitigation measure TP2 (Stakeholder communication plan).	Supported
15	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • amend mitigation measure TP6 (Operational Parking Management Plan).	Supported
16	Amend the Incorporated Document as shown in Appendix G: a) amend Clause 6.1(i) b) insert a new Clause 8 (Parking and shuttle bus service).	Supported

Number	IAC recommendation	Summary of Minister's response
17	Amend the Environmental management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • delete mitigation measure AM07 (Events Traffic Management Plan)	Supported
18	Amend the Incorporated Document as shown in Appendix G: a) replace Clause 13 (Event management).	Supported. In addition, noise mitigation should be included as a matter to be considered for Event Management Plans in Clause 16.1 of the Incorporated Document.
19	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • amend mitigation measure TP7 (Emergency access plan).	Supported
20	Seek agreement with Parks Victoria to align the closure of the National Park with the closure of the trails, on 'High' fire danger days (as described in the Australian Fire Danger Rating System).	Supported
21	Amend the Environmental Management Framework as shown in Appendix F: a) in Section 16.3.4 (Operations): • amend mitigation measure NM05 (Operational noise – Noise barrier to Martyr Road).	Supported.
22	Amend the Incorporated Document as shown in Appendix G: a) insert a new sub-Clause 6.1(k).	Supported
23	Amend the Environmental Management Framework as shown in Appendix F: a) in Sections 16.3.3 (Construction) and 16.3.4 (Operations); • delete BM08 (Bushfire Management Strategy & Emergency Management Plan) b) insert a new Table 16-7A (Bushfire and emergency management mitigation and contingency measures), with a new mitigation measure BEM01 (Bushfire Management Strategy & Emergency Management Plan)	Supported. In relation to the measures for trail closures, barriers should only be placed across trails if and when these do not present a safety risk to riders.
24	Amend the Incorporated Document as shown in Appendix G: a) amend Clause 9 (Emergency management).	Supported
25	Amend the Incorporated Document as shown in Appendix G: a) amend Clauses 7.2(c) and 7.4(b).	Supported
26	Amend draft Yarra Ranges Planning Scheme Amendment C198yran as follows: a) Amend the exhibited Special Controls Overlap mapping to: • remove Trails 1, and 45 to 47 • include the whole of the Warburton Golf Course site at 17 Dammans Road, Warburton • include the land required for the trail heads at Wesburn Park and Mount Tugwell and the two bridges proposed to be constructed as part of the Project. b) Amend the Incorporated Document to replace references to the Road Zone Category 1 with references to the Transport Zone.	Supported, however I do not support extending the SCO to include the whole of the Warburton Golf Course.

Number	IAC recommendation	Summary of Minister's response
27	Amend the Environmental Management Framework as shown in Appendix F: a) amend Section 16.2 (Roles and responsibilities) to describe the requirements for the Project ecologist b) amend all references to an ecologist to refer to 'suitably qualified independent ecologist'.	Supported

HON. LIZZIE BLANDTHORN MP

Minister for Planning

28 / 10 / 22