

Executive Summary

Introduction

This Environment Effects Statement (EES) relates to Section 2 of the Western Highway Project, which involves the duplication of the Western Highway over approximately 38 kilometres (km) between Beaufort and Ararat, Victoria.

The purpose of the EES is to provide stakeholders and decision makers with a clear description of the proposed Project, relevant alternative and assessment of the potential environmental, social and economic effects.

The EES process informs the various statutory approvals required for the Project and invites comment on outcomes of the assessments undertaken. Relevant decision-makers need to have regard to the Minister for Planning's Assessment of the Project and its effects, which will be provided at the conclusion of the EES process.

The EES and Draft Planning Scheme Amendments (PSAs) are being exhibited for public review and submissions between 14 September and 25 October 2012. This Executive Summary provides an overview of the Project, the assessment and approvals framework, predicted environmental effects and management measures that are recommended. Details on where to view the EES, how to obtain copies and make a submission are also provided in the last two pages of this Executive Summary.

The Western Highway (A8) in Victoria is the principal road link between Melbourne and Adelaide. The highway serves interstate trade between Victoria and South Australia, and is the key transport corridor through Victoria's west. It also supports the farming industry, grain production, regional tourism, and a range of manufacturing and service activities in Victoria's west. Currently, more than 5500 vehicles travel the highway west of Ballarat each day, including 1500 trucks. In terms of freight movements, the Western Highway is one of the busiest rural highways in the country with the traffic expected to significantly increase by 2040.

VicRoads is proposing to duplicate the Western Highway between Beaufort and Ararat (the Project), as part of the larger Western Highway Project which involves duplication of the highway between Ballarat and Stawell, not including bypasses of Beaufort and Ararat.

The existing highway between Beaufort and Ararat is undivided with a single lane in each direction and overtaking lanes at various locations. Initially, the existing highway would be upgraded to a divided highway standard with two lanes in each direction separated by a central median, associated intersection upgrades and a bypass of the township of Buangor.

At some time in the future, when traffic volumes warrant and funding is available, the divided highway would be upgraded to a freeway standard.

Proponent

The Roads Corporation (VicRoads) is one of several State Government agencies that assist the Government to achieve its integrated transport policy objectives. VicRoads also administers a number of Acts and Regulations including the *Road Management Act 2004* and the *Road Safety Act 1986*. As the statutory authority for arterial roads (including highways and freeways), VicRoads is responsible for the Western Highway and is the proponent for this Project.

Project Funding and Staging

The Western Highway is part of the National Land Transport Network, which is the national network of strategically important land transport linkages. As part of the Nation Building Program, which assists national and regional economic and social development by the provision of funding aimed at improving the performance of land transport infrastructure, VicRoads was allocated funding from both the Commonwealth and State Governments to progressively upgrade the Western Highway into a four-lane divided highway. This larger project, known as the Western Highway Project, extends for approximately 100km, commencing at the western edge of Ballarat and finishing at the south-eastern edge of Stawell. This does not include bypasses of Beaufort or Ararat.

The Western Highway Project has been split into a series of sections for planning and delivery purposes:

- Ballarat to Beaufort (Section 1)
- Beaufort to Ararat (Section 2)
- Ararat to Stawell (Section 3).

Section 1, which did not require an EES, is currently being constructed and expected to be completed in 2014. Section 2 is the subject of this EES and is programmed for construction between 2013 and 2016. Section 3 is the subject of a separate EES which is currently being developed and is programmed for construction between 2014 and 2016. Completion of Sections 2 and 3 is subject to future funding, with the current funding allocation allowing for all planning to be completed, and construction as far west as Buangor. The sections of the Western Highway Project are shown in Figure 1.



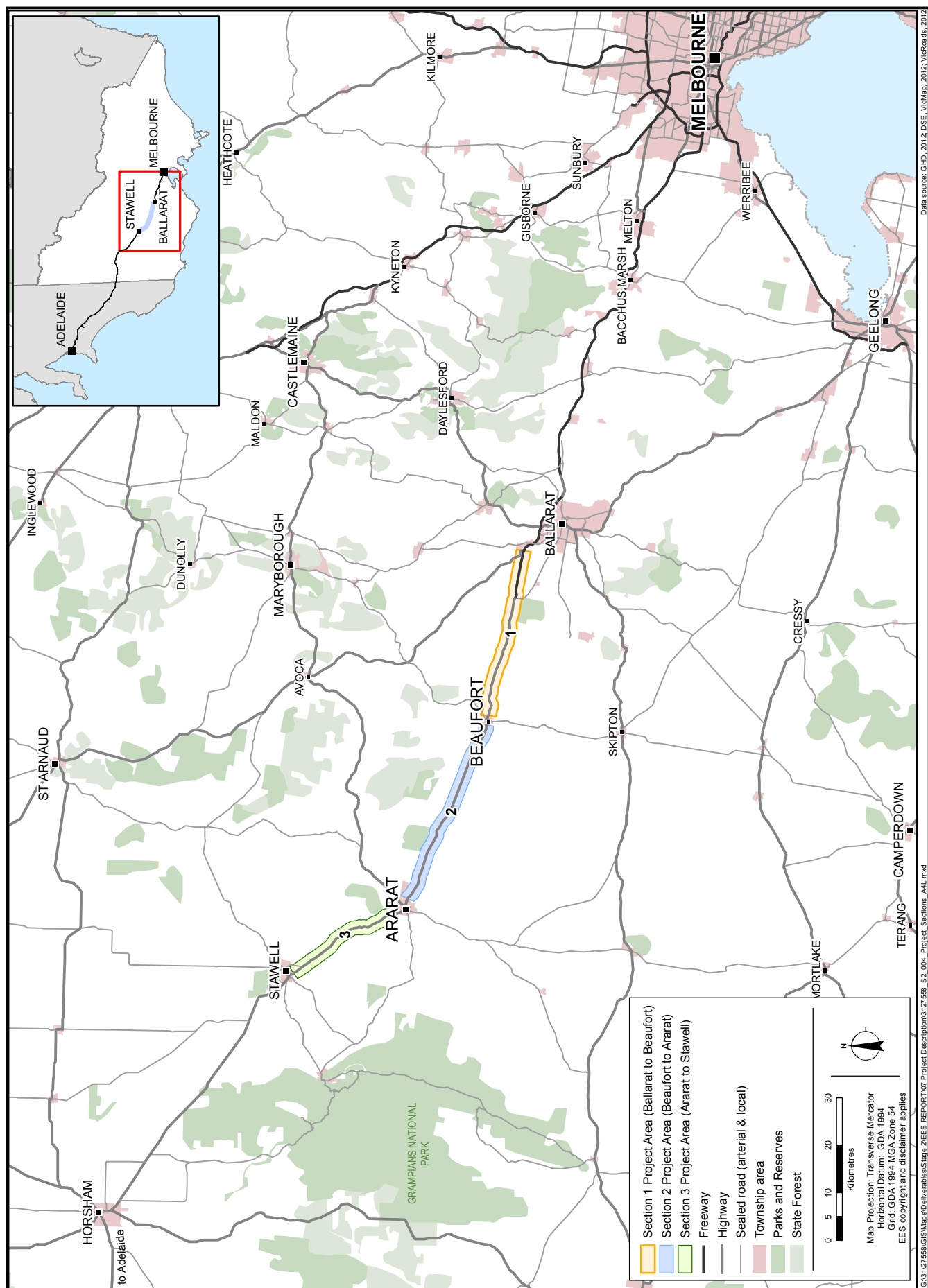


Figure 1 Western Highway Project Sections

Project Rationale

The key drivers for the Western Highway Project are road safety and transport efficiency. These drivers are key elements of Victorian Government transport policies, as well as the VicRoads operating charter as set out in the *Transport Integration Act 2010*. Specifically, the Project would assist in meeting the objectives of the following policies/strategies:

- National Transport Links – Growing Victoria's Economy strategy
- Nation Building Program – Roads to Recovery
- Melbourne-Adelaide Corridor Strategy
- Western Highway M8/A8 Corridor Strategy
- Arrive Alive (Victoria's Road Safety Strategy).

Project Area and Study Area

The project area was defined for the purposes of characterising the existing conditions for the Project, and to consider alignment alternatives. The project area encompasses a corridor extending up to 1500 metres (m) either side (north and south) of the edge of the existing highway (encompassing the extent of new alignment possibilities).

A study area was also defined for each specialist assessment. Some of the assessments undertaken to inform this EES have adopted larger study areas than the project area for the purposes of characterising relevant effects. Therefore, when discussing specialist studies, the area is referred to as the study area.

Road Safety

The existing highway between Ballarat and Stawell has remained largely unchanged for almost a century in some locations. However, the total traffic volumes and proportion of heavy vehicles have significantly increased, especially in recent times, which are contributing to a relatively high crash rate.

Between Beaufort and Ararat, the existing highway has a crash history of 5.5 crashes per 100 million vehicle km travelled. Within the five year period between 1 January 2007 and 31 December 2011, there have been 20 casualty crashes at 20 different locations. Of these, two resulted in a fatality, 11 resulted in serious injury and run off the road type crashes were common (VicRoads CrashStats, 2012).

There are several aspects of the current highway configuration which are contributing to its worsening safety record which would be addressed through development of the Project:

- Few overtaking opportunities
- Property access safety
- Poor road geometry
- Lack of rest break areas.

Transport Efficiency

The Western Highway is currently supporting a large variety of vehicle types, ranging from tourist traffic and commuter traffic to large B-double trucks, and farm machinery. Over the past 20 years, the total traffic volumes along the Western Highway between Ballarat and Stawell have increased by approximately 47%. The proportion of heavy vehicles has increased by 12% over the same period.

The combination of the rise in overall traffic, the increase in proportion of heavy vehicles and the reduction of speed limits in various locations (as a measure to improve road safety) means that the time it takes to travel between Ballarat and Stawell has also increased by approximately seven minutes over the past ten years. This extended travel time is impacting on the operating cost and travel time reliability for the freight industry and other users of the highway.

Project Objectives

With regard to the key drivers for this Project, VicRoads has defined the following Project objectives:

- To provide safer conditions for all road users by:
 - Reducing the incidence of head-on and run-off road crashes;
 - Improving safety at intersections; and
 - Improving safety of access to adjoining properties.
- To improve the efficiency of freight by designing for High Productivity Freight Vehicles.
- To provide adequate and improved rest areas.
- To locate the alignment to allow for possible future bypasses of Beaufort and Ararat.

Completing the duplication of the highway between Ballarat and Stawell (including Section 2 between Beaufort and Ararat) would improve road safety and freight efficiency delivering benefits to communities and industries that depend upon the highway for access to services, facilities, resources, domestic and export markets.



EES and Approvals

On 27 October 2010, the then Victorian Minister for Planning determined that an EES was required under the *Environment Effects Act 1978* to document the likely environmental, social and economic effects of the Project. The reasons for the Minister's decision included;

- the potential for the Project to have significant effects on biodiversity, cultural heritage, land uses, infrastructure and communities;
- the need for investigation of opportunities to avoid and minimise these impacts; and
- the need for an integrated assessment of alternatives to inform decision making based on the Minister for Planning's Assessment under the *Environment Effects Act 1978* and not a separate assessment process.

Commonwealth Approval Requirements

On 17 December 2010, the delegate for the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities determined the Project to be a controlled action that requires assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The relevant controlling provisions for the Project under the EPBC Act are; threatened species and ecological

communities (Sections 18 and 18A). The EES process is to be applied as an accredited process under the EPBC Act in accordance with the bilateral agreement between the Commonwealth and Victorian governments. This means that the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities will make a decision whether to approve the Project under the EPBC Act, based on the EES and not a separate assessment process.

EES Scoping Requirements and Evaluation Objectives

The EES Scoping Requirements issued by the Victorian Minister for Planning sets out the range of environmental, social and economic matters to be investigated and documented in the EES including Commonwealth requirements under the EPBC Act.

The draft EES Scoping Requirements for the Project were placed on public exhibition in May 2011 and then issued by the Minister for Planning in their final form in September 2011.

The evaluation objectives, documented in the EES Scoping Requirements, reflect the key issues as identified by the Minister for Planning. The evaluation objectives for the Project are outlined in Table 1 and are addressed in the relevant chapters of the EES with a summary provided in the conclusion.

Table 1 Evaluation Objectives

EES Evaluation Objective	Relevant EES Chapter
To provide for the duplication of the Western Highway between Beaufort and Ararat to address safety, efficiency and capacity issues.	<ul style="list-style-type: none"> ■ Chapter 9 ■ Chapter 19
To avoid or minimise effects flora and fauna species and ecological communities listed under the <i>Flora and Fauna Guarantee Act 1988</i> or the <i>Environment Protection and Biodiversity Conservation Act 1999</i> , as well as to comply with requirements under Victoria's Native Vegetation Management – A Framework for Action, 2002.	<ul style="list-style-type: none"> ■ Chapter 13 ■ Chapter 20
To protect catchment values, surface water and groundwater quality, stream flows and floodway capacity, as well as to avoid impacts on protected beneficial uses.	<ul style="list-style-type: none"> ■ Chapter 10 ■ Chapter 11 ■ Chapter 12
To avoid or minimise disruption and other adverse effects on infrastructure, land use (including agriculture) and households, as well as road users resulting from the construction and operation of the highway duplication.	<ul style="list-style-type: none"> ■ Chapter 8 ■ Chapter 9 ■ Chapter 18 ■ Chapter 19
To minimise air emissions, noise, visual, landscape and other adverse amenity effects, during the construction and operation of the proposed duplicated highway to the extent practicable.	<ul style="list-style-type: none"> ■ Chapter 15 ■ Chapter 16 ■ Chapter 17 ■ Chapter 18
To protect residents' well-being and minimise any dislocation of residents or severance of communities, to the extent practicable.	<ul style="list-style-type: none"> ■ Chapter 7 ■ Chapter 18
To protect Aboriginal and non-Aboriginal cultural heritage.	<ul style="list-style-type: none"> ■ Chapter 14
To provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with the project in order to achieve acceptable environmental outcomes.	<ul style="list-style-type: none"> ■ Chapter 21 ■ Chapter 4
Overall, to identify an alignment and conceptual design for the Western Highway Duplication from Beaufort to Ararat that would achieve a balance of economic, environmental and social outcomes.	<ul style="list-style-type: none"> ■ Chapter 5

Technical Reference Group

Prior to the commencement of the EES process, a Technical Reference Group (TRG) for the Project was established and chaired by the Department of Planning and Community Development (DPCD). As set out in the Terms of Reference, the role of the TRG was to provide advice to the proponent (VicRoads) and DPCD as appropriate and to enable relevant government departments and local councils to provide input and guidance to the EES process in relation to the adequacy of investigations being undertaken and the Project's compliance with statutory requirements.

The TRG was made up of representatives from the following government departments, local councils and other organisations:

- Department of Planning and Community Development (DPCD)
- Department of Sustainability and Environment (DSE)
- Aboriginal Affairs Victoria (AAV)
- Victorian Environment Protection Authority (EPA)
- Glenelg Hopkins Catchment Management Authority (CMA)
- Heritage Victoria
- Pyrenees Shire Council

- Rural City of Ararat
- Parks Victoria
- VicRoads Western Region.

The first TRG meeting was held on 12 May 2011. In total, nine TRG meetings were held throughout the development of the EES. Additional meetings were also held with particular TRG agencies in order to discuss key issues in more detail where this was required. TRG agencies were briefed at meetings and provided with draft reports to review. Comments received from TRG members were taken into consideration in the preparation of the EES.

Community Consultation

Consultation with the community is an integral part of the EES process. As per the EES Scoping Requirements, VicRoads has undertaken a formal process of communication and consultation with relevant stakeholders including potentially affected parties, the community and interested organisations and individuals throughout the development of the EES in order to identify and respond to their concerns.

The main issues identified throughout the consultation process, and the responses to these issues are summarised in Table 2.

Table 2 Summary of Consultation Key Issues and Responses

Issue	Response
Land Acquisition	
Most participants did not support options that involved land acquisition on their properties. Some participants said that their businesses (mostly farms) could be rendered less viable if their land or parts thereof was acquired for the Project. Landowners were concerned that some options would result in acquisition of their prime farming land.	<p>Agricultural assessments were undertaken for properties where landowners raised concerns that the Project would affect viability. The outcomes of this assessment were used to draw conclusions regarding land use impacts in the Planning and Land Use Assessment.</p> <p>VicRoads has provided landowners with information on the land acquisition process, where requested. In selecting the preferred alignment, consideration was given to minimising land acquisition. The current design was refined through the EES process to avoid and minimise land acquisition, land severance and acquisition of dwellings, where practicable.</p>
Severance of agricultural properties	
This included concerns about the loss of agricultural land affecting the viability of farms, as well as access to other agricultural properties in the same ownership located on the other side of the proposed highway. Some participants stated that if they were no longer able to drive farm machinery on the duplicated highway to access their other properties this would be a major issue.	The preferred option has been selected to avoid and minimise severance of private land. Agricultural assessments were undertaken for properties where landowners raised concerns that the Project would affect viability. The locations of some median breaks and intersections were selected to assist known movement of farm machinery. VicRoads has advised landowners that the highway, initially under AMP3 conditions would have the same status once duplicated in that it would allow continued use by registered/permitted items of plant. VicRoads has also advised that at some future time restriction to highway access will be introduced and it will be consistent with the AMP1 plans in this proposal.
Severance of communities and townships	
Severance of communities was an issue raised in Buangor township. Participants were concerned that the alignment following the existing highway through town, and the deviation south of the township, would act to physically divide their town by cutting their places of residence from sections of the community, as well as creating a mentality of having 'two towns'. Some participants felt that these	The alignment options that went through Buangor and to the south of Buangor were eliminated as part of the options assessment process, which addressed concerns that community members had regarding their town being divided by the Project. Options 1 and 2, both bypassing north of Buangor township, minimise severance impacts to the community. VicRoads received positive feedback from community members regarding this decision.

Issue	Response
alignments would act to worsen existing amenity issues, given that community facilities (eg. School, Coach House, Sports Oval) are located north of the existing highway, with dwellings predominantly located south of the existing highway.	
Amenity, including noise, air quality and visual impacts	
A range of concerns were raised with regards to amenity impacts, these included noise levels increasing at private residences and community facilities from both an increase in traffic volume and closer proximity of the alignment options to sensitive receptors. Some participants were concerned about the visual impact of the road encroaching on their properties, particularly in the vicinity of Buangor township. Some landowners and residents sought clarification as to how noise would affect adjoining residents and whether the VicRoads Noise Policy applied.	<p>A number of photomontages from residential viewpoints have been developed which show what the ultimate upgrade (AMP1 freeway standard) would look like. Landscaping would be used to mitigate adverse effects at key locations.</p> <p>Noise mitigation measures (such as road surfacing and removal of tactile features) would be considered during detailed design at key locations such as intersections and in the vicinity of Buangor township. Air quality impacts have been investigated and would have minimal impact.</p>
Safety	
The issue of safety was raised by many participants, with respect to a number of existing highway sections and intersections, including Box's Cutting, Eurambeen-Streatham/Raglan Roads, Buangor township and Hillside Road. Some stated that they didn't feel safe using some of the current access points and intersections on the existing highway. Others were concerned about increasing volumes of traffic, altered access to properties and proximity of the alignment options to residences and community facilities associated with the options presented. Safety was a concern along the entire alignment; however, the issue was more pronounced around the Buangor township, with participants concerned that an increase in traffic volume could hinder the community's ability to walk and ride bikes along some roads and also cause safety issues for children accessing community facilities and the school.	<p>Traffic volumes, including truck volumes, within the project area are predicted to grow, which is one of the key drivers for the Project. Road safety is a key priority in this Project. Intersections and the highway alignment would be designed in accordance with relevant safety standards. VicRoads has noted that road safety audits would be undertaken throughout the Project to ensure that safety standards are met.</p> <p>A key reason for the selection of the preferred and alternate options was to ensure that the community was not separated from the facilities in Buangor township.</p>
Access	
Some participants identified that adequate access to their properties and their community was a major issue for them. Participants did not want the Project to sever access to their community and services, nor did they wish to travel further (e.g. be required to turn left and perform a U-turn, when they can currently turn right onto the existing highway) to access their communities or properties. Some agricultural landowners that reside between Beaufort and Ararat raised the issue of requiring regular access to their properties by B-Double trucks and/or farm machinery.	<p>The location of intersections has been considered to best meet traffic and road safety requirements.</p> <p>Community consultation sessions held have shown the location of these median breaks and feedback received has been incorporated into the preferred and alternate alignments where possible. Assessments were undertaken of the types of vehicles turning at different locations along the highway and how far they had to travel in order to make the turns. The results of these assessments were considered in the design of the alignments options.</p>
Environmental	
Some landowners expressed concern at native vegetation impacts and severance of wildlife corridors, particularly in the vicinity of Langi Ghiran State Park.	<p>During consultation, the significance of the vegetation, the legislative requirements and where the alignment options have avoided or minimised impacts on native vegetation was explained. For example, a minimum construction footprint has been proposed in the vicinity of Langi Ghiran State Park to protect native roadside vegetation and minimise impact on wildlife corridors.</p> <p>During detailed design, the adopted alignment would be further refined to minimise native vegetation removal within the preferred alignment corridor, with mitigation measures adopted (eg. wildlife crossings) as appropriate to minimise impacts to wildlife corridors for significant native fauna.</p>

EES Approvals Process

Following public exhibition of the EES, the Minister for Planning will appoint an Inquiry Panel for the Project to review the EES, any submissions and conduct public hearings. Following receipt of a report from the Inquiry, the Minister will then prepare an Assessment under the *Environment Effects Act 1978*.

Once the Minister's Assessment has been released, statutory approvals will be sought and relevant decision-makers need to have regard to the Minister's Assessment. The Project requires:

- Approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
- Amendments to relevant Planning Schemes (for the Pyrenees and Ararat Planning Schemes) under the *Planning and Environment Act 1987*
- An approved Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006*.

The relationship of these approvals to the EES is shown in Figure 2.

A number of approvals under other legislation for components of the project are also required. These additional approvals are outlined in Section 4 in each of the Chapters 8 to 20.

The draft Planning Scheme Amendments (PSAs) are included in the EES so that they may be exhibited concurrently and comments will be sought on the PSA as well as the EES during the exhibition period. The PSAs would include application of a Public Acquisition Overlay to the private land to be compulsorily acquired for the Project. It is proposed that the PSAs for the Project would be processed pursuant to Section 20(4) of the *Planning and Environment Act 1987* (the Minister for Planning being the Planning Authority), following completion of the EES process.

A CHMP is being developed for each Registered Aboriginal Party (RAP) area within the Project, and will be submitted to the RAPs for evaluation and approval following the EES process.

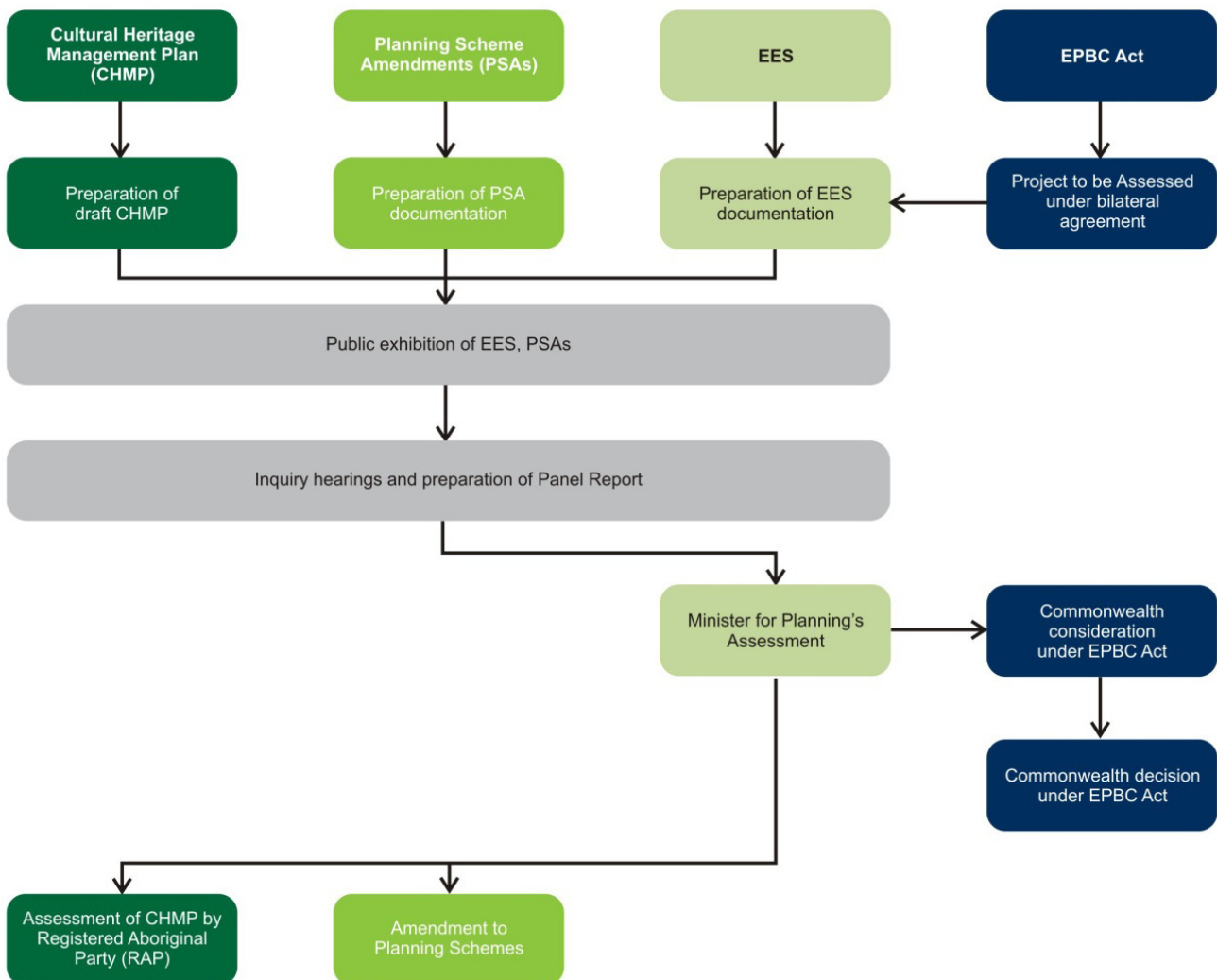


Figure 2 Approvals Process

Alignment Options

In order to achieve the Project objectives, VicRoads is proposing to duplicate the Western Highway from just east of Martins Lane, west of the Beaufort township to Warrayatkin Road, Ararat. The following describes the alignment options assessed for the EES to meet the Project objectives.

The 'No Project' Scenario

Consideration of the 'no project' scenario is important in order to evaluate the implications of not undertaking the Project. Assessment of the 'no project' scenario is inherent in the assessments undertaken for the EES as described below. The rationale for the Project is outlined above and further detail is provided in Chapter 2 (Project Rationale) of the EES.

The impact assessments undertaken for the EES describe the existing conditions within the project area in order to establish the baseline for impact assessments. In relation to project objectives, relevant assessments also consider future changes that would occur if the Project was not developed, for example road safety would be likely to deteriorate further.

The evaluation framework utilised to assess alignment options has considered the potential benefits and adverse impacts of each option relative to the 'no project' scenario. Neither the benefits nor the adverse impacts attributable to the proposed Project, as documented in the EES, would be realised for the 'no project' scenario.

Options Assessment and Selection Process

A number of different alignment options for the Project were developed, assessed and selected through a three phase process.

The project area was defined for the purpose of existing condition and options assessments. The project area is a corridor which extends 1.5km either side of the existing highway and excludes some areas of environmental and social sensitivities, being Langi Ghiran State Park and Green Hill Lake. The options assessment process for the Project involved specialists in the relevant fields considering alternate options and assessing the impacts of each. Feedback was sought from the local community via community meetings held in July 2011 and November 2011 and from the TRG via meetings, which was considered through the process.

In the first phase, a 'long list' of alignment options was developed through a workshop, drawing upon previous work undertaken by VicRoads and introducing some new concepts. A number of factors influenced the development of the 'long-list' including; the need for an appropriate connection with the existing highway, allowing for future bypasses of Beaufort and Ararat (for which alignments are not yet determined), ensuring design and safety standards were achieved while optimising

use of the existing highway. All options sought to meet the project objectives and avoid significant known constraints.

Through a 'rapid assessment' workshop the long list of alignment options was assessed against a set of objectives and evaluation criteria covering the key issues and constraints as relevant to the Project. As a result of this workshop, some options were eliminated to create a 'short list' of options for more detailed consideration in the second phase.

In the second phase, the 'short listed' options were assessed against a more detailed set of evaluation criteria. The project team gathered to workshop the outcomes of their assessments. Preferred options were identified (Options 1, 2 and 3) from Beaufort to Ararat.

In the third phase of the process, these three alignment options were subject to detailed risk and impact assessments as documented in the technical appendices to this EES. The assessments found that overall, Options 1 and 2 were preferable over Option 3. Option 3 was in fact very similar to Option 1 but did not offer greater benefit or less risk than Option 1. Therefore, Option 3 was not taken forward into the EES.

Description of Preferred and Alternate Alignments

Following selection of the preferred and alternate options, the alignments have been refined through the EES assessment process. The preferred and alternative alignments are both approximately 38km in length. The alignment options commence just east of Martins Lane, Beaufort. Both options follow the same alignment until Andersons Road at Buangor.

Both of the proposed options bypass Buangor to the north and cross Peacocks Road at about the same location. The proposed alignment options then differ from Peacocks Road to Langi Ghiran Picnic Ground Road. The options then follow the same alignment for the remaining length to Ararat.

From Peacocks Road Option 1 travels south to re-join the existing highway alignment at Buangor-Ben Nevis Road. After a short section following the existing highway, Option 1 travels southwest, crossing the railway in the vicinity of Hillside Road. Option 1 then travels west for approximately 650m to the south of the existing highway and re-joins the existing highway again just before Langi Ghiran Picnic Ground Road.

From Peacocks Road Option 2 travels west to cross Buangor-Ben Nevis Road approximately 600m north of the existing highway. After crossing Buangor-Ben Nevis Road, Option 2 travels south-west, crossing the existing highway and then the railway line. Option 2 then curves to the north and follows the railway line, crosses Hillside Road and joins with the existing highway alignment just west of Hillside Road Extension.

Preferred and Alternate Alignments

As a result of the three phase assessment process and taking into consideration feedback received at community information sessions, VicRoads presents Option 1 and Option 2 for consideration as part of the EES.

Both Options 1 and 2 would meet project objectives and deliver the desired benefits of improved road safety and transport efficiency.

Option 2 has less land severance and therefore less impact on farming productivity within the Project Area. From an environmental perspective, Option 2 also has slightly less impact golden sun moth habitat and would result in the removal of less Grassy Eucalypt Woodland of the Victorian Volcanic Plains.

Option 1 has a reduced risk of encountering unstable geological units given its alignment along the existing highway corridor at Langi Ghiran State Park compared to Option 2. Option 1 would also result in the removal of 21ha fewer EVC's compared to Option 2 and would result in one less dwelling being directly impacted by the alignment.

Based on an analysis of potential impacts of each option, VicRoads prefers Option 2, but acknowledges that Option 1 would also satisfy the overall project objectives.

VicRoads understands that as a result of the EES process, either Option 1 or Option 2 could be recommended for approval and therefore, submissions will need to be sought for both options.

Both Options 1 and 2 have a range of benefits and impacts (refer the Chapter 5 (Project Alternatives). Having regard to feedback from the specialists on potential impacts and overall benefits, Option 2 has been identified as the VicRoads preferred option. Option 1 remains under consideration as an alternate alignment option through the EES process.

The proposed alignments for Option 1 and Option 2 are shown in Figure 3 and are included in the mapbooks contained in Technical Appendix A to the EES.



Western Highway looking west through Box's Cutting towards Mount Langi Ghiran

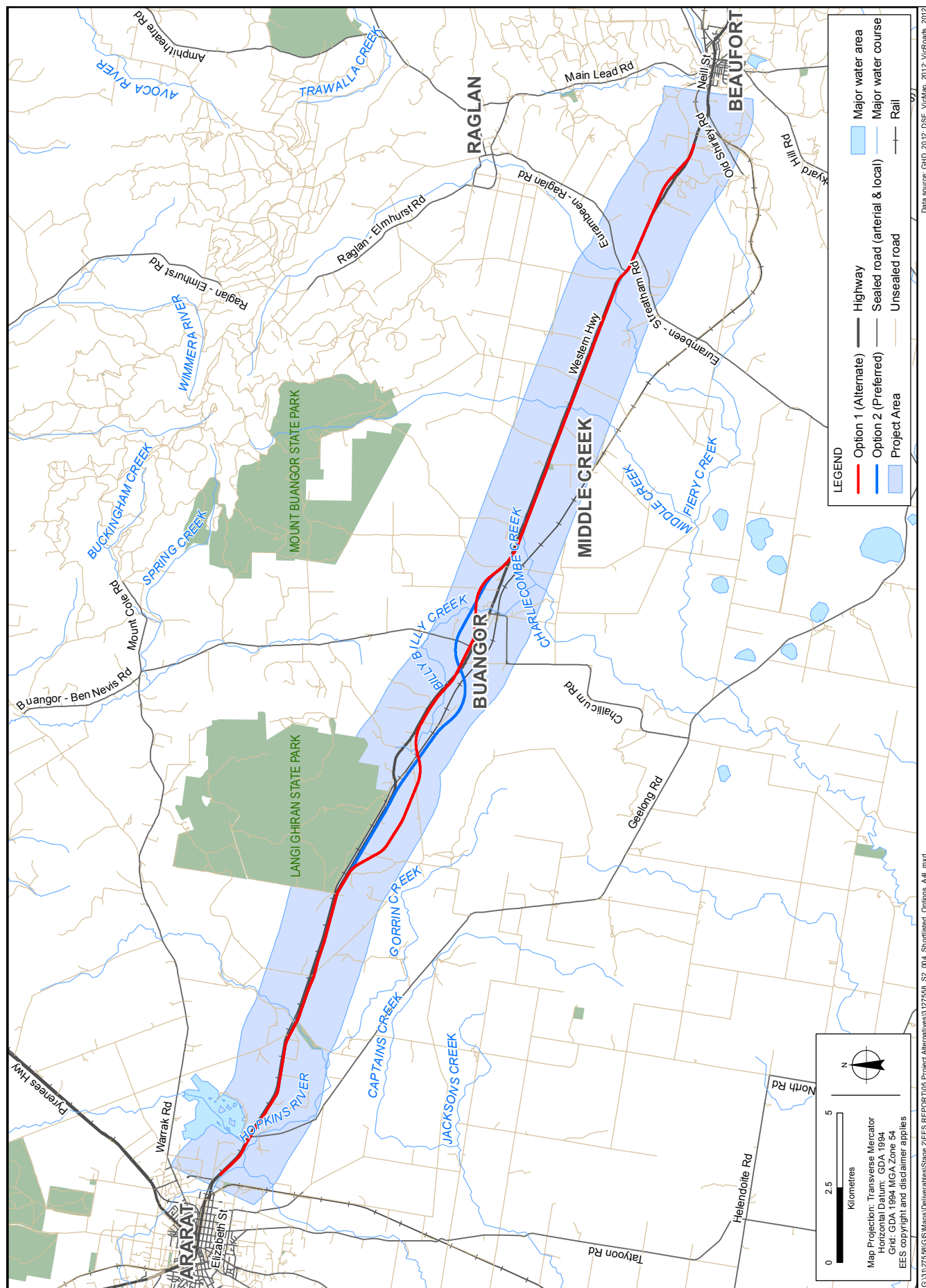


Figure 3 Preferred (Option 2) and Alternate (Option 1) Alignments

Project Description

The project description summarised here outlines the physical footprint of the Project, the relevant design elements and an indicative construction methodology. The project description, together with VicRoads' standard environment protection measures for construction has formed the basis for the risk and impact assessments included as technical appendices to the EES.

The project description considers two potential alignments: Option 1 (alternative) and Option 2 (preferred). The project description also considers the two overall project phases, referred to as the interim and the ultimate upgrade. The interim upgrade to the existing highway is consistent with VicRoads Access Management Policy road category 3 ('AMP3'), a divided rural highway standard. When traffic volumes or other conditions warrant, further government funding would be sought for the ultimate upgrade from the 'AMP3' highway to 'AMP1', which is the freeway standard. The Planning Scheme Amendments (for the Pryenees and Ararat Planning Schemes) allow for acquisition of land required for the AMP1 (freeway) standard road.

The EES has assessed the greatest potential impact resulting from the Project, therefore all assessments have considered the ultimate upgrade to an AMP1 freeway as it involves a larger physical footprint and more significant changes to access arrangements. The traffic and transport, economic and social impact assessments also considered the interim AMP3 upgrade because of the different access arrangements than the AMP1 standard road. However, other assessments only considered the ultimate (AMP1) upgrade.

Construction Area

A construction area has been defined for the Project, which is the area of direct impact for construction of the ultimate upgrade encompassing the interim upgrade arrangement.

The construction area includes the following areas:

- Existing and new carriageways and medians.
- Grade-separated intersections (for AMP1) and wide median intersections (for AMP3).
- Service roads and rest areas.
- Clear zones extending a minimum 10m either side of the edge of the traffic lanes (except where constraints are located).
- Construction buffers beyond the clear zone that have been included to accommodate relocated services and potential changes to batter slopes.

Where sections of the proposed alignments utilise the existing road, the objective has been to convert the existing two-way road to two lanes in one direction, and a new parallel carriageway would be constructed to serve traffic in the other direction.

At Box's Cutting, west of Beaufort, and the bypass of Buangor, new dual carriageways are proposed and the existing highway would revert to a local road.

The following generally applies to the construction area:

- The construction area required for a new dual carriageway is approximately 110m wide. This includes the pavement, clear zone, median and construction buffer areas identified.
- Where the existing roadway is utilised, depending on the condition of the existing roadway and its gradeline, pavement rehabilitation might be required. Otherwise, works on the existing roadway could include drainage improvement, shoulder construction and removal of hazards within the clear zone. For the purposes of the EES, the same construction corridor has been assumed for areas where the new carriageway alignments follow the existing highway to allow for these works. This is conservative, but it at least accounts for potential impacts which could be reduced through the detailed design process and management during construction.
- The construction area identified for the EES does not consider site compounds, although areas free of major constraints that could accommodate them have been identified. Site compounds would be used to stockpile materials, store plant and equipment and to provide site offices, parking and amenities for construction staff. Site compounds and construction laydown areas are likely to be located in close proximity to the section of highway under construction, but the exact number, area required and locations cannot be identified at this time. VicRoads would require that the construction contractor(s) identify suitable locations, preferably within both the project area and construction area, and obtain approval for these. If the contractor(s) identified a suitable location outside the Project and construction area, it would need to ensure it met performance standards that resulted in no impacts to the environmental and social values assessed in this EES and undertake appropriate consultation.

Intersections and Access

Intersections and turning movements for both the interim and ultimate upgrades have been designed to cater for vehicles likely to legally use the Western Highway. This includes a standard 25m B-Double truck configuration (a vehicle consisting of a prime mover and two trailers linked together).

Interim Upgrade – Divided Highway

For the interim upgrade, wide median intersection treatments are proposed at:

- Martins Lane
- Eurambeen-Raglan Road / Eurambeen-Streatham Road

- Ferntree Gully Road / Goulds Lane
- Peacocks Road
- Hillside Extension Road
- Langi Ghiran Picnic Ground Road
- Brady Road / Hillside Road (West)
- Warrayatkin Road.

Through Box's Cutting the existing highway is proposed to become a service road that connects to a wide median intersection at Martins Lane.

The majority of the remaining intersecting roads and property accesses would be restricted to 'left-in' and 'left-out' except where local roads are proposed to be truncated, thereby restricting access the highway. In these locations, service roads have been proposed where required.

Ultimate Upgrade – Freeway

For the ultimate upgrade, access to the freeway would be provided via grade-separated interchanges connected to the local road network by service roads. The grade separated interchanges would be located at:

- Eurambeen-Raglan Road / Eurambeen-Streatham Road
- Peacocks Road
- Hillside Road (eastern end)
- Langi Ghiran Picnic Ground Road.

Waterway Crossings

Six major or significant waterways and 21 minor waterways would be intersected by the alignment options.

The piers of the bridges would be constructed outside of the low flow channel extents. In order to prevent exacerbation of flooding it is likely that some existing bridges would require upgrades to accommodate the duplicated crossing. Initial flood modelling has been completed for key crossings and has informed the EES.

Part of the proposed alignment extends over a short section of Charliecombe Creek. To mitigate potential flooding impacts caused by the alignment, it is proposed that this section of the creek be realigned.

Railway Crossings

One new crossing of the Ballarat – Ararat railway line is proposed on the western side of Buangor between Beaufort and Ararat for both alignment options.

Access arrangements regarding construction work over and in the vicinity of the railway line would be agreed between VicRoads and VicTrack. This agreement would identify when construction activities can occur, which would predominantly be between train movements (not frequent) or after hours. Although unlikely, it is possible that operation

of passenger trains could be suspended for a short period to allow construction work to occur. In this case, a bus service could temporarily replace passenger train services for the construction period.



Bicycle and Pedestrian Usage

Based on VicRoads Access Management Policies and road rules, it is anticipated that cyclists would be able to continue using the Western Highway between Beaufort and Ararat for both the interim and ultimate upgrade. The proposed 3m sealed shoulder is sufficient width to allow for cyclists.

No specific provisions have been included within the design for pedestrians.

Lighting and Traffic Signals

Street lighting would be provided in accordance with VicRoads standards, where required, at interchange and wide median treatment intersections.

No traffic signals are proposed for the Project.

Speed Limits

The design speed limits for the Project are:

- 110 kilometres per hour (km/h) on the main carriageways from just west of McKinnon Lane, Beaufort, to Warrayatkin Road, Ararat
- 100km/h for the sections from the railway bridge to the commencement of duplication east of McKinnon Lane, Beaufort and from Warrayatkin Road to Heath Street, Ararat
- 90km/h on access ramps and crossroads
- 70km/h on service roads.

Posted speed limits may be different to the design speed.

Rest and Truck Stops

The existing Red Kangaroo Roadhouse located west of Beaufort township and Caltex Service Centre located to the east of Ararat would be retained as rest areas for all traffic.

New eastbound and westbound truck parking bays would be also created along the proposed alignment. These are proposed between Stars Road and Aherns Road, between Beaufort and Buangor.

Landscaping

Some vegetation in the road reserve which currently screens views to and from the existing highway would be removed for the Project. Landscaping for the Project would be undertaken in accordance with VicRoads Roadside Planting Guidelines (VicRoads 2010). The design and species selection for landscaping would be in keeping with the existing landscape.

Construction Staging and Working Hours

Once planning and environmental approvals are obtained, the two main activity sequences which follow are pre-construction and construction. The pre-construction phase would involve land acquisition and detailed design and take around six months to complete. Tendering the contract for construction would also occur during this period. Construction of the Project is expected to take up to three years and would likely be broken up into stages, Beaufort to Buangor then Buangor to Ararat, to match project funding phasing.

Construction work for the Project would be undertaken during the standard hours for construction work as set out in VicRoads specifications, which are:

- Monday to Friday: between 7 am or sunrise (whichever is the later) and 6 pm or sunset (whichever is the earlier)
- Saturday: 8 am to 2 pm typically.

Construction outside of the standard hours is likely to be minimal and would be subject to approval by VicRoads and notification of affected members of the community. It is possible, though unlikely, that night works may be required to minimise impact on traffic in some locations.

Upon completion of the works, the construction site would be progressively landscaped and re-vegetated, including reinstating topsoil, seeding, planting trees and shrubs, installing weed mats and mulch, and installing any design elements, as required.

Operation and Maintenance

Key operational activities would be the on-going road maintenance consistent with current VicRoads practices and standards. Assets to be maintained would include landscaping, stormwater drains, bridges, road pavement, signage, barriers and line marking.



Risk Assessment

A detailed environmental risk assessment of the shortlisted alignment options of the Project was completed to characterise risks and identify appropriate responses. Environmental management measures, which are required of all VicRoads construction projects, were assumed as a starting point. Additional project specific management measures were also identified to reduce risks in some cases.

All management measures identified as part of the risk assessment have been included in the Environmental Management Framework, presented in the EES. This Framework would inform development of a project Construction Environmental Management Plan (CEMP).

Impact Assessment

The following sections provide an overview of each of the technical studies completed for the EES, the predicted impacts and management responses proposed.

Planning and Land Use

The Planning and Land Use Assessment examined the potential effects of the Project on land use, zoning and public infrastructure and consistency with the Pyrenees Planning Scheme and the Ararat Planning Scheme and other relevant planning strategies.

The study area spans part of Pyrenees Shire and Ararat Rural City. It includes land that has been developed for grazing, cropping, plantations, residential and rural residential purposes. The Ballarat – Ararat Railway line is within the study area, following a similar alignment to that of the existing highway.

The assessment found that most land use and planning related impacts would be experienced in the construction phase and so they are short term only. These include potential impacts on existing infrastructure due to the temporary relocation and/or disconnection of services, impacts on amenity such as noise and dust emissions, traffic disruptions and changes to landscape due to removal of vegetation. Noise, dust, traffic and landscape impacts have been investigated through specific studies in this EES and would be managed to an acceptable level through the implementation of the Project CEMP.

Smaller isolated allotments created as a result of land acquisition for the Project that are below the minimum lot size of the relevant zone, could be subject to development pressure for a dwelling. These smaller allotments would be considered for consolidation with adjoining lots. The potential for a reduction in the long term economic viability of allotments subject to acquisition that would be severed and/or where access arrangements would

change has been investigated through the agricultural assessment. It is considered unlikely that the Project would significantly affect long term agricultural productivity of the locality. Property specific mitigation measures such as reinstatement of existing property infrastructure, structures, drainage and access, after construction is complete, should mitigate most impacts on farming operations in the long term.

Both Options 1 and 2 generally extend adjacent to existing boundaries or fence lines. However, Option 1 has a greater negative impact on agricultural land, property and severance as it severs four rural properties comprised of seven lots between Hillside Road and Langi Ghiran Picnic Ground Road. In contrast, Option 2 runs along property frontages through this area. Compensation for severance and land acquisition impacts would be provided in accordance with the *Land Acquisition and Compensation Act 1986*.

The Project would result in longer term benefits for the economy and tourism in the area due to improved accessibility following the duplication of the highway. It would also deliver benefits for Buangor in particular due to the diversion of freight and other vehicles out of the town centre, thereby improving the safety and amenity of the town.

The Planning and Land Use Assessment concluded that the Project as a whole would not result in any significant inconsistency with planning policy, nor would it result in any broad change of land use within the study area. On balance, Option 2 has less land severance impacts than Option 1 because it aligns more closely with property boundaries, the existing highway and the railway line.

The two alignment options are very similar in terms of impacts on Planning and Land Use. The overall impact of the Project on planning and land use is considered to be low as a result of the longer term impacts being generally localised and site specific.

Traffic and Transport

The Traffic and Transport Assessment examined the extent to which the Project is expected to address road safety and accessibility, transport efficiency and capacity as articulated in the Project Objectives. It also examined how the Project would affect road users during both the construction and operation phases. The Traffic and Transport Assessment also considered the relevant differences between the interim (duplicated highway – AMP3) and ultimate (freeway – AMP1) scenarios.

The Project is expected to eliminate a high proportion of existing road safety risks and deliver improved road safety across the study area. This would be achieved through; increased clear zone widths, bypassing the township of Buangor, providing adequate rest areas, providing central medians and overall improvements to the horizontal and vertical alignment of the road. For the ultimate

freeway design, additional safety improvements would be realised through intersection grade separation and controlling local access via service roads. It is anticipated that the Project would result in a significant reduction in the number of crashes on the highway, which would assist in reaching the target of reducing the incidence and severity of road crashes by 30% by 2017 (an objective of Arrive Alive! 2008-2017 Victoria's Roads Safety Strategy). Road safety outcomes are expected to be significant for both scenarios, with the ultimate AMP1 design having a slight improvement on the interim AMP3 design.

The Project would increase the capacity of the highway so that it can accommodate the traffic volumes predicted for 2040. This would be the same for the interim and ultimate upgrades.

The Project is expected to provide travel time savings of around two minutes for vehicles travelling along the Western Highway through the study area due to continuous overtaking opportunities, expected higher posted speed limit, better grade line and a reduction in the number of intersections. Travel times are expected to be slightly improved for the ultimate AMP1 design as compared to the interim design. Improved travel times would have a number of benefits including improved access and amenity for motorists, improved travel cost efficiency for road-based freight vehicles and improved travel times for emergency vehicles and buses. It is reasonable to assume a travel time saving for the majority of road users, though it is anticipated that some local landowners/occupiers would have slightly increased travel times, including movements within Buangor, due to reduced access to the highway, particularly for farm machinery. Whilst this cannot be avoided, it is offset by improved safety of access and mitigated by incorporating sufficient median breaks to enable U-turns. The Project would also enable High Productivity Freight Vehicles to use the highway/freeway, thereby contributing to further improvements to freight efficiency.

The majority of the adverse impacts on road users are expected to occur during the construction phase, when the proposed works could impact on the road safety and transport efficiency. However, the assessment concluded that acceptable outcomes would be achieved through the implementation of detailed Traffic Management Plans and through community consultation to inform road users of what to expect during construction.

There are no significant differences between Options 1 and 2 with regard to transport outcomes. The key difference between the interim and ultimate scenarios is access to the freeway. For the ultimate freeway design, access would be limited to grade-separated interchanges and service roads would be provided to provide access to the local road network and individual properties. This would further improve road safety and transport efficiency but further

increase the distance required to access the freeway for some local landowners/occupiers.

The Traffic and Transport Assessment concluded that whilst some adverse impacts to road users have been identified, these are mostly related to the construction period and can be managed to achieve acceptable outcomes. The Project would improve road safety and transport efficiency, resulting in a net transport benefit to the community.



Crockers Lane

Soils and Geology

The Soils and Geology Assessment examined the potential for the Project to encounter adverse geological conditions, affect soil stability, cause soil erosion and expose contaminated soils and acid sulphate soils (ASS).

Based on a review of previous and current land use, the potential for localised contamination in the study area is considered to be moderate. Several features were identified that indicate potential for land contamination. These include; farm /shearing sheds (often associated with sheep dips) an existing service station (potential hydrocarbon contamination), railway line (historic land management practices), areas of disturbed soils (potential sites of buried waste) and historic mining works (mine tailings).

ASS have not been identified within the study area, though no analysis for potential ASS has been undertaken. Therefore, targeted sampling would be required prior to construction, particularly in locations where infrastructure such as bridge supports would be installed at depth in alluvial sediment.

Exposure to contaminated soils and ASS represent a potential risk to human health and the environment. Construction activities also present a risk of contamination through fuel and chemical spills. These risks would be adequately managed, firstly through the identification of contaminated soils, ASS soils and spill risks during the detailed design phase and then by proper management via the Project CEMP.

There is limited information on the soil properties and characteristics of the study area at this stage of Project development and so specific areas which may be more susceptible to soil erosion cannot be accurately identified. However, there is a moderate risk of encountering unstable geological units which may contribute to soil erosion, associated with softer alluvial sediments, historical mine workings and in the vicinity of Box's Cutting and the Langi Ghiran Railway cutting.

Standard construction management approaches have been recommended in this EES and site specific soil erosion management plans would be developed as part of the Project CEMP.

Detailed geotechnical site investigations, complemented with appropriate design of temporary and final batter slopes would largely eliminate issues of gross ground instability and minimise the potential for soil erosion.

Preliminary earthwork estimates suggest a large quantity of imported fill material would be required. Fill material would be sourced from surplus materials from site and additional sources including local quarries and borrow pits under arrangement between Contractor(s) and local land owners. Where soils are to be imported to the site, all soils would need to comply with relevant legislative requirements to prevent the importation of contaminated materials. Based on the preliminary earthworks volume estimates, Option 2 is favoured over Option 1 because it would require approximately 1.2 million cubic metres less imported fill material.

Of the two alignment options, when taking into consideration the potential for exposure of sensitive receivers (human health and ecological), it is considered that Option 1 is the preferred alignment as it has less intersection with and sections in close proximity to the railway line (and potential associated contaminants). However, the environmental impact of both options would be low with implementation of the recommended management measures.

Option 1 is also preferred with regard to geological and geotechnical considerations on the basis of unfavourable geotechnical conditions in Option 2 in the vicinity of the Langi Ghiran railway cutting, whereby the railway cutting being the zone of transition between granite and sandstone geology. However, the environmental impact for both options would be low with the implementation of the nominated management measures.

Groundwater

The Groundwater Assessment examined the potential effects of the Project on groundwater and its beneficial uses under the State Environment Protection Policy (Groundwaters of Victoria) as well as the potential for groundwater to impact on road construction and the structural integrity of the road.

The assessment found that groundwater quality in the study area is relatively poor, and that development of the resource is limited, with uses generally limited to stock and non-potable domestic purposes. Groundwater salinity in the study area is variable, ranging from 1,500mg/L Total Dissolved Solids (TDS) to over 7,000mg/L TDS. Most of the study area has groundwater with salinities over 3,500mg/L, the beneficial uses of which (specified in the SEPP Groundwaters of Victoria) are for non-potable and non-agricultural purposes including maintenance of ecosystems, stock watering, industry and primary contact recreation. However, less saline groundwater exists around Langi Ghiran State Park and Dobie to the west. With a range of 1,500 to 3,000mg/L TDS, the beneficial uses specified in SEPP Groundwaters of Victoria include the above-mentioned uses as well as agriculture and potable mineral water supply. Available groundwater data reveals low bore yields, generally less than one litre per second.

Available information for bores within the study area indicated standing water level ranging from 1m to 22m below the surface. Groundwater levels are expected to be deeper in higher topographies and shallower in flatter topographies. The areas where deeper cuts are proposed are in the higher topographies.

Regional mapping by the Department of Primary Industries (DPI) has identified a number of potential Groundwater Dependent Ecosystems (GDEs) in the study area that potentially use groundwater to some extent, although they may not necessarily be dependent on it. Very little data is currently available to assess whether or not these GDEs are actually dependent on groundwater. It is considered that the high salinity of groundwater in much of the study area would not be conducive to plant growth and therefore the project is not considered likely to impact on groundwater dependent ecosystems. However, there is uncertainty about this impact and drilling of bores should be carried out prior to detailed design to test that assumptions are correct.

The key risk considered in the impact assessment was the intersection of groundwater during construction. Although it is considered that the likelihood of this occurring is low, it cannot be discounted that groundwater may be unexpectedly encountered at localised areas along the alignment. If groundwater was intersected during construction it is expected that the impact of this event would range from insignificant to moderate, depending on the location in which groundwater was intersected. However, with the application of mitigation measures including a Groundwater Monitoring Plan, it is expected that the impacts to groundwater can be managed and as a consequence, the overall impacts on groundwater would be negligible to low.

Shallow groundwater is not conducive to road construction and efforts to better characterise

groundwater occurrence should be made during the detailed design phase of the Project.

Based on the current understanding of groundwater conditions in the study area, there is no means of conclusively differentiating the potential impacts on groundwater between Option 1 and Option 2.



Surface Water

The Surface Water Assessment examined the potential effects of the Project on surface water environments including water quality, hydrology, waterway health and beneficial uses and values.

The Project crosses the following six major or significant named watercourses: Fiery Creek, Middle Creek, Charliecombe Creek, Billy Billy Creek, Hopkins River, Green Hill Creek and would consequently require water crossing structures to be constructed at these locations. There will be new crossing structures and replacement of existing with the same type of structure, retaining or enhancing the ability to convey flood waters and avoid river health impacts.

The key risks are associated with either impacts to river health or hydraulic impacts to waterways and floodplains, due to the construction of waterway crossings and embankments. Construction of waterway crossing structures has the potential to impact on waterway health through disturbance to the bed, banks, vegetation, and aquatic fauna movement. In terms of flooding there is a requirement for the Project to be flood free and to not impact existing properties.

Specific sites where there are river health risks include the new crossing of Billy Billy Creek (Ch. 18200) where there are significant river health values. The potential disturbance of channel planform and river health values, as well as potential for fragmentation will result in specific requirements to mitigate the risk (e.g. longer span bridge). Another key risk is the requirement for Charliecombe Creek to be diverted over a length of approximately 250 metres (m) (between Ch. 14200 and Ch. 15300). The Creek flows intermittently (ephemeral), and whilst channelised has some natural diversity. The re-created diversion channel would therefore need to incorporate a high level of natural features to mitigate the potential impact.

The impact of the Project on flooding was considered low for the majority of waterway crossing locations, other than a number of specific locations where identified properties are potentially affected.

Option 2 is marginally the preferred option in relation to surface water impacts as it would involve the least potential impact on flooding and least disturbance to significant waterways.



Biodiversity and Habitat

A Biodiversity and Habitat Assessment was conducted between October 2010 and January 2012.

This assessment identified three species which are listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (which are also listed under the State *Flora and Fauna Guarantee Act 1988*):

- Dwarf Galaxias (vulnerable under EPBC Act, listed as threatened under FFG Act and near threatened in Victoria (DES Advisory List))
- Golden Sun Moth (critically endangered under EPBC Act, listed as threatened under FFG Act and critically endangered in Victoria under DSE Advisory List)) and
- Spiny Rice-flower (critically endangered under EPBC Act, listed as threatened under Victorian FFG Act and endangered in Victoria (DSE Advisory list)).

In addition, two EPBC Act listed communities could be impacted by the Project:

- Natural Temperate Grassland of the Victorian Volcanic Plain (critically endangered) and
- Grassy Eucalypt Woodland of the Victorian Volcanic Plain (critically endangered).

During the Options Assessment process, matters of National Environmental Significance (NES) and vegetation of Very High and High conservation significance were deemed to be of highest conservation value and priority was given to avoiding and minimising impacts on matters of NES where possible and vegetation of Very High and High conservation significance where possible. Through alignment design changes avoidance of significant amounts of matters of NES was achieved. However,

it was not possible to entirely avoid impacts on matters on NES. Therefore, it is expected that the Project would remove one Spiny Rice-flower plant in both options, 31.56 hectares of Golden Sun Moth habitat in Option 1 and 23.8 hectares of Golden Sun Moth habitat in Option 2; and potentially impact on Dwarf Galaxias habitat in both options. The Project would also remove approximately 5.25 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain (in both Option 1 and Option 2) and approximately 11.14 hectares of Grassy Eucalypt Woodland of the Victorian Volcanic Plain for Option 1 and 8.65 hectares for Option 2.

It is not expected that the Project would have significant impacts on Spiny Rice-flower or the Dwarf Galaxias. It is however, expected that the Project would have a significant impact on the Golden Sun Moth, the Natural Temperate Grassland of the Victorian Volcanic Plain and the Grassy Eucalypt Woodland of the Victorian Volcanic Plain as defined in the Significant Impact Guidelines 1.1 developed by the Department of Sustainability Environment Water, Population and Communities.

The impacts on listed flora species and communities would be offset in accordance with the requirements of Draft Policy Statement 4.1: Use of environmental offsets under the *Environment Protection and Biodiversity Conservation Act 1999*. It is expected that VicRoads would be able to source appropriate offsets for removal of native vegetation and habitat required for this Project.

The Project would also impact upon some State listed species. These are:

- one Golden Cowslip individual (vulnerable, DSE Advisory List) (Option 1)
- 12 Emerald-lip Greenhood individuals (rare, DSE Advisory List) (Option 1)
- 8 Yarra Gum individuals (rare, DSE Advisory List) (Option 2)
- Brown Toadlet (endangered, DSE Advisory List) (Option 1 and Option 2) and
- Brown Treecreeper (near threatened, DSE Advisory List) (Option 1 and Option 2).

It is considered that the impacts on State listed species alone would be insignificant to minor.

The assessment also found that the Project would intersect 10 Ecological Vegetation Classes (EVCs) of varying quality. These are:

- Plains Grassland (endangered)
- Plains Grassy Woodland (endangered)
- Alluvial Terraces Herb-rich Woodland (endangered)
- Hills Herb-rich Woodland (vulnerable)
- Heathy Dry Forest (least concern)
- Creekline Grassy Woodland (endangered)

- Grassy Woodland (endangered)
- Plains Grassy Wetland (endangered)
- Grassy Dry Forest (depleted) and
- Heathy Woodland (depleted).



Brown Tree Creeper (Source: EHP Pty Ltd)

The Project would impact approximately 110ha of EVCs (equating 39.38 Habitat hectares (Habha)), of which 34.19ha are of Very High conservation significance for Option 1 and approximately 131ha (equating to 52.98Habha), of which 38.93ha are of Very High conservation significance for Option 2. This is considered to be a moderate impact because the loss would be less than 0.1% of the total area of EVCs in the bioregion.

'Victoria's Native Vegetation Management: A Framework for Action' (DNRE, 2002) provides the strategic direction for the protection, enhancement and revegetation of native vegetation across the State. The primary goal identified for native vegetation management is 'A reversal, across the entire landscape, of the long-term decline in the extent and quality of native vegetation, leading to a Net Gain.' Appendix 4 of the Native Vegetation Management Framework specifies that clearing of Very High conservation significance native vegetation should not be permitted unless exceptional circumstances apply (ie. impacts are an unavoidable part of a development project) and

approval is gained from the Victorian Minister for Environment and Climate Change based on considerations of environmental, social and economic values from a statewide perspective.

The Project could also result in the loss of up to 221 Large Old Trees (LOTs), 140 of which are of Very High conservation significance in Option 1 and up to 214 LOTs, of which 109 are of Very High conservation significance in Option 2. Mitigation measures including construction refinements during detailed design should reduce the number of LOTs impacted by the Project. It is expected that the actual number of LOTs impacted would be less than these totals because management measures including micro-alignment and construction planning would be implemented to minimise the number of LOTs impacted. It is expected that the impact on LOTs would be minor.

Further avoidance and minimisation of matters of NES and State significance would be able to be achieved through micro-realignments in the detailed design phase.

VicRoads would source appropriate offsets for matters of NES that would be impacted by the Project upon consulting with SEWPac on requirements and in accordance with the *Draft Policy Statement 4.1: Use of Environmental offsets under the EPBC Act*

VicRoads would be required to obtain offsets for vegetation losses in accordance with *Victoria's Native Vegetation Management – A Framework for Action*. Preliminary investigations indicate that offsets are available and that VicRoads could source appropriate offsets from one or a combination of BushBroker, Trust for Nature, the VicRoads Net Gain Bank and private offset brokers.

Vegetation of Very High and High Conservation significance and Matters and NES were considered of greatest importance for conservation during alignment selection, and as such, were given priority in avoiding and minimising impacts. However, not all impacts on native vegetation and habitat are able to be avoided. Based on the level of impact to Very High and High conservation significance vegetation, Option 1 is considered to be the preferred alignment option (with an area of impact 15.4ha less than in Option 2). Option 1 however, has a greater level of impact on matters of NES (1 Spiny Rice-Flower Plant, 7.76ha more of Golden Sun Moth habitat and 2.49ha more of Natural Temperate Grassland of the Victorian Volcanic Plain) than Option 2. However, the differences in level of impact on matters of NES between the two alignment options are considered relatively small when compared with the difference in the amounts of Very High and High conservation significance vegetation impacted by the two alignment options. As such, Option 1 is considered the preferred alignment from the Biodiversity and Habitat perspective due to least impact on Very High and High conservation significance vegetation.

Cultural Heritage

Aboriginal Cultural Heritage

To assess the impact of the Project on Aboriginal Cultural Heritage places, the following tasks were completed:

- Consultation with the two Registered Aboriginal Parties (RAPs): Wathaurung Aboriginal Corporation and the Martang
- Desktop study
- A Standard Assessment for each RAP area under the provisions of the *Aboriginal Heritage Act 2006*
- Mortuary tree assessment.

The study area contains 30 identified Aboriginal cultural heritage sites. Nineteen of these sites were recorded during a survey for the Project and have been submitted to Aboriginal Affairs Victoria for inclusion on the Victorian Aboriginal Heritage Register (VAHR).

Both Option 1 and Option 2 would directly encounter 11 currently registered Aboriginal cultural heritage places: eight of which are of minor significance (artefact scatter) and two of which are of moderate significance (scarred trees). For both options the places of Aboriginal cultural heritage which would be impacted are predominantly of minor significance, therefore resulting in a low overall impact on Aboriginal Cultural Heritage.

The locality has potential for Aboriginal mortuary trees (a significant type of Aboriginal place where human remains and grave goods have been placed within the hollow of a tree trunk or branch), however no mortuary trees with human remains were found during the mortuary tree assessment and inspections carried out for the Project.

In the unlikely event that human remains are discovered during the construction of the Project, there are strict contingency measures which are required to be met in accordance with Section 18 (2) (b) of the *Aboriginal Heritage Act 2006*.

In accordance with Section 49 of the *Aboriginal Heritage Act 2006* a Complex Cultural Heritage Management Plan (CHMP) is required for the Project in each of the two RAP areas which would be affected by the Project. The CHMPs would include management recommendations which detail the approach to managing potential impacts on Aboriginal cultural heritage sites.

Historical Cultural Heritage

Within or adjacent to the study area there were five registered historical sites. Following inspection of existing registered sites, archival research and community consultation, nine previously unregistered sites were submitted to Heritage Victoria for listing on the Heritage Inventory (HI) under the *Heritage Act 1995* and three previously unregistered sites were recommended for submission to the Council of Rural City of Ararat for

consideration of inclusion in the Heritage Overlay in the Ararat Planning Scheme.

Of the registered and identified historical sites, the two alignment options provide similar impacts. Both options would require the relocation of the Major Mitchell Cairn, which is considered to be of local historic significance. Option 2 would encounter an additional two historic sites: Peacocks Road House ruins (local historic significance) and the former Colvinsby School site (local historic significance). It is noted that these two sites have been submitted to Heritage Victoria for inclusion in the Heritage Inventory as a result of the Project. Both options would result in an overall low impact to historical cultural heritage due to the small number of locally significant sites requiring removal or relocation.

An Environmental Management Plan (EMP) would be prepared which would include contingency measures that manage the unexpected discovery of previously unregistered and assessed historical cultural heritage sites and features.

Air Quality

The Air Quality Assessment examined the potential effects of the Project on air quality considering the requirements of and compliance with the *State Environment Protection Policy (Air Quality Management)* Schedule C, Part D, and identified strategies for management of effects of dust on sensitive receptors during construction.

The Project would result in generation of dust from construction activities and gaseous pollutants due to traffic movements during operation. Air quality impacts from construction are predicted impact areas extending no further than 375m from the southern edge of the construction zone and 395m from the northern edge of the construction zone. Management measures, including dust suppression techniques and keeping construction vehicles to well defined haul routes, are expected to result in low to negligible impacts from construction dust.

As there are already vehicles travelling along the existing Western Highway there are already vehicle emissions in the study area. It is expected that the increase in operational emissions from the Project would be negligible. As such, the risk of impacts from vehicle emissions during operation of the Project is expected to be negligible.

In addition, the assessment found that operational emissions and construction dust are not expected to affect domestic water supplies and all of the assessed air pollutants from vehicles using the road are predicted to be below the Intervention Level for Air Quality Management used in Victoria.

Option 1 and Option 2 are very similar from an air quality impact perspective, however, Option 2 has less potential sensitive receptors located within the construction dust impact zone that would require additional dust management control to minimise

impact (42 potential sensitive receptors for Option 2 compared with 47 for Option 1).

Noise and Vibration

The noise and vibration assessment examined the existing ambient noise environment and the potential impacts that the Project could have on sensitive receptors (in this case, mostly dwellings).

The assessment found that the construction of the Project has the potential to create adverse effects from noise and vibration at some sensitive receptors. Construction during the day is considered to be of negligible risk as management techniques including noise reduction technology on machinery would be implemented, and generally receptors are not as sensitive to noise during the day. Construction is considered to be of higher impact during the evenings, at night and at weekends. Construction at these times are only expected to occur in exceptional circumstances. Evening, night time and weekend construction noise impacts would be managed by consulting with potentially impacted residents and implementing a noise mitigation strategy.

Energy from construction activities can also be transformed into vibration. Based on the predicted peak vibration levels for the Project, it is expected that vibration would be barely perceivable at sensitive receptor locations within 50m for most construction activities involving rolling and compacting. Accounting for likely property acquisition by VicRoads to accommodate the Project, within 50m of the alignments there are approximately eight houses near Option 2 and seven houses near Option 1 that may potentially be impacted. While vibration levels during construction would be noticeable at these seven or eight dwellings, the vibration levels would not be sufficient to cause damage to buildings.

Traffic volumes on the highway would create noise during the operation of the Project. Some dwellings along the Project alignment may experience greater noise than they currently do from the existing alignment. This impact would usually occur where the Project alignment has been brought closer to the dwelling than the existing Western Highway alignment. Conversely, some dwellings would experience lower noise levels, usually where the alignment has been moved further away from the dwelling. Overall, it is predicted that during the operation of the Project more dwellings would experience a clearly noticeable reduction in traffic noise, than those that would experience a clear increase. Mitigation of traffic noise may be required for discrete sections of the proposed alignments that are considered to be 'new alignment' (where both carriageways are outside the existing road reserve) in accordance with the VicRoads Traffic Noise Reduction Policy. Potential mitigation measures include acoustic barriers or acoustic treatment of houses/buildings.

Based on a comparison between the existing highway and the proposed alignments under predicted 2025 traffic volumes; the Project is predicted to result in a 'clearly noticeable' increase in traffic noise levels at three dwellings in Option 2 and four dwellings in Option 1 and a 'clearly noticeable' reduction in traffic noise levels due to the alignment moving further away at nine dwellings Option 1 and 17 dwellings Option 2. Overall, more dwellings would experience a noticeable reduction, rather than a noticeable increase, in traffic noise as a result of the Project.

Option 1 and Option 2 are similar in terms of impacts from noise and vibration; however noise modelling indicates that for Option 2 there would be one fewer sensitive receptor with a clearly noticeable noise impact during operation than in Option 1.

Visual and Landscape

The Visual and Landscape Assessment examined the potential effects of the Project on landscape character and the visual amenity of residents and visitors.

As part of this assessment, landscape character types were defined for the study area to assist in determining the ability of the landscape to accommodate the Project. The majority of each alignment option is adjacent to the existing highway and within the 'Vegetated Highway' or 'Highway' landscape character areas. These landscape character areas have a high capacity to accommodate visual change and the Project would not significantly diminish the landscape character of these areas. Where there is a new alignment or where the existing highway alignment would be elevated, there would be a visual impact on the dwellings with a view towards it. The alignment generally does not impact on cultural or natural areas; however, there would be visual impact on the northern outlook from the Buangor Primary School. The potential impacts from the Project can be reduced through sensitive design and screening vegetation.

Many dwellings located along the existing highway have an existing view upon the highway. Therefore, where the alignment utilises the carriageway of the existing highway, the anticipated visual impact upon these dwellings is considered to be low, as the duplication exacerbates the existing visual outlook of a view towards a road. Where the duplication utilises a new alignment, the impact upon dwellings is considered higher. However, with sensitive mitigation, such as sensitive design and screening vegetation, these impacts would be reduced.

Whilst the alignment does not generally impact upon significant areas of natural and cultural values for the community, particularly the town centre of Buangor and Langi Ghiran State Park, there are impacts upon the northern outlook from Buangor Primary School, which can be reduced through appropriate mitigation.

The key area where landscape character is impacted is around the vicinity of Langi Ghiran State Park. In this area, Option 1 results in a greater (moderate) impact upon the Vegetated Rural landscape character type as it traverses through it, whilst Option 2 would utilise the existing Western Highway alignment through an area already visually affected by the highway, resulting in an insignificant visual impact. Therefore, Option 2 is preferred over Option 1 from a visual and landscape perspective.

Social

The Social Impact Assessment (SIA) examined the existing social and community conditions in the vicinity of the Project and the potential impacts that the Project could have on individuals and communities.

The SIA identified that the community within the study area is a highly connected community with strong social linkages. Community attitudes towards the Project were mixed with concerns raised about potential amenity impacts, including an increase in noise levels and impacts on visual amenity. Concerns were also raised about potential property acquisition, severance of agricultural land and changes in access arrangements to local properties. Buangor Primary School raised particular concerns about amenity impacts that the Project could have on the school and potential changes to school bus routes.

Community members also identified that they thought by-passing Buangor could benefit their community by increasing the amenity of the town and that the Project could result in higher levels of safety, particularly with regard to accessing properties.



Former Cobb & Co Staging Stables, Buangor

The Project would not negatively affect access to any major community facilities or any tourism attractors, but may in fact encourage people to visit local towns and community services and facilities more frequently due to improved safety and travel times.

The risk and impact assessment identified that the key social impacts from the Project would be:

- The dislocation of some individuals as the Project would require acquisition of two dwellings in Option 1 and three dwellings in Option 2.

- Changes in property access arrangements and a slight increase in travel times for some individuals due to restrictions on some local road and property access, although these impacts are expected to be offset by an increase in safety for these individuals.
- Amenity impacts including increased noise levels for some individuals during construction and operation and changes to visual amenity for some individuals. The social impact of this is expected to be medium due to the large number of households that would experience a slight change in amenity.

Overall, the social impacts of the Project are considered to be low. However, for some impact pathways, including amenity during construction and operation and the acquisition of dwellings, there is still a residual risk rating of medium. The SIA identified that most community members are tolerant of short-term amenity impacts from construction as they would ultimately benefit from the Project. VicRoads would compensate owners of property that is acquired in accordance with the *Land Acquisition and Compensation Act 1986*.

Economic

The Economic Impact Assessment explored the potential economic effects of the Project, including the effects on the local community and the wider region.

During construction, the Project is expected to create approximately 2,220 Full Time Equivalent (FTE) jobs for Option 1 and 2,200 FTE jobs for Option 2. These totals are jobs directly and indirectly involved in construction of the Project. Flow on effects to the wider community are expected (sourcing of goods and services and expenditure by workers and their families) to create 4,130 FTE jobs for Option 1 and 4,090 FTE jobs for Option 2.

It is expected that the Project would enhance connections between the local agricultural industry and the Port of Melbourne. The Project would also have benefits for the tourism industry by allowing more efficient movement of people to and through the area.

The land required for the Project would result in the loss of agricultural facilities and infrastructure valued at approximately \$1.3M - \$1.5M over a 30 year timeframe. The Project would also result in the loss of agricultural land and severance of properties with an economic impact on businesses estimated to be in the range of \$2.2M - \$2.5M over a 30 year timeframe. VicRoads would compensate eligible landholders in accordance with the *Land Acquisition and Compensation Act 1986* which reduces the residual risk rating for this impact to low.

It is expected that the Project may disrupt access to businesses during construction, resulting in a revenue loss estimated to be less than \$100,000 over a three year period. VicRoads would work with

businesses to optimise their construction schedules which would reduce the residual risk rating for this impact to low. Construction may also result in a reduction in passing trade to one business. The economic impact to this business is estimated to be less than \$100,000. The installation of signage for this business is expected to result in a residual risk rating of low.

Option 1 has the greatest negative impact on agricultural land, property and severance. Option 1 involves substantial property severance between Hillside Road and Langi Ghiran Picnic Ground Road, where it severs four rural properties comprised of seven lots. By contrast, Option 2 runs along property frontages through this area.

There is no significant difference between the Options in terms of direct land loss and facilities loss.

In terms of impacts to non-agricultural businesses, both options were found to have impacts of a low magnitude.

The Project has a Benefit Cost Ratio of 0.5 for Option 1 and 0.6 for Option 2. These Benefit Cost Ratios are not unusual for a project of this type.

As such, the preferred Option for the Project from an economic viewpoint is Option 2.

Matters of National Environmental Significance

The Biodiversity and Habitat Assessment identified three EPBC listed species (Dwarf Galaxias (vulnerable), Golden Sun Moth (critically endangered) and Spiny Rice-flower (critically endangered)) and two EPBC listed communities (the Natural Temperate Grassland of the Victorian Volcanic Plain (critically endangered) and the Grassy Eucalypt Woodland of the Victorian Volcanic Plain (critically endangered)) that may be impacted by the Project.

During the Options Assessment process, matters of National Environmental Significance (NES), along with vegetation of Very High and High conservation significance were deemed to be of highest conservation significance and priority was given to avoiding and minimising impacts on these ecological values where possible. Through alignment design changes avoidance of significant amounts of matters of NES was achieved. However, it was not possible to entirely avoid impacts on matters on NES. Therefore, it is expected that the Project would remove one Spiny Rice-flower plant (in both Options), 31.56 hectares of Golden Sun Moth habitat in Option 1 and 23.8 hectares of Golden Sun Moth habitat in Option 2; and potentially impact on Dwarf Galaxias habitat (both Options). The Project would also remove approximately 5.25 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain (in both Option 1 and Option 2) and approximately

11.14 hectares of Grassy Eucalypt Woodland of the Victorian Volcanic Plain for Option 1 and 8.65 hectares for Option 2.

It is not expected that the Project would have significant impacts on Spiny Rice-flower or the Dwarf Galaxias as only one Spiny Rice-flower plant is expected to be impacted by the Project and management measures including placing bridge structures outside the low flow channel of Billy Billy Creek are expected to result in negligible to low impacts to the Dwarf Galaxias. It is however, expected that the Project would have a significant impact on the Golden Sun Moth, the Natural Temperate Grassland of the Victorian Volcanic Plain and the Grassy Eucalypt Woodland of the Victorian Volcanic Plain, based upon the Significant Impact Guidelines 1.1 developed by SEWPaC, due to the amounts of this native vegetation and habitat that would be removed by the Project.

The impacts on listed flora species and communities would be offset in accordance with the requirements of Draft Policy Statement 4.1: Use of environmental offsets under the *Environment Protection and Biodiversity Conservation Act 1999*. It is expected that VicRoads would be able to source appropriate offsets for removal of native vegetation and habitat required for this Project.

Environmental Management

The EES includes an Environmental Management Framework (EMF) incorporating all measures recommended to avoid, minimise and manage impacts that have been identified through the EES process. Whilst some of these measures are not strictly 'environmental', for completeness they are all included in the EMF.

VicRoads would develop a Project Environment Protection Strategy and contract specification(s) which would incorporate all environmental management measures as described in the EMF and any other requirements identified through the Minister's assessment and conditions of subsequent approvals. These documents would inform the detailed design and construction of the Project, including development of the contractor's CEMP.

VicRoads would implement those measures that relate to land acquisition and compensation, and net gain offsets for removal of native vegetation and would be ultimately responsible for the implementation of the EMF.



Conclusions of the EES

The EES for the Project has included an integrated assessment of alignment options for the Project, considering a range of environmental, social and economic criteria. The preferred and alternate alignment options were selected to achieve a balance between meeting project objectives and minimising negative impacts.

The Project is anticipated to deliver significant improvements to road safety and transport efficiency which would have a range of social and economic benefits.

The EES documents the predicted risks and impacts of the Project and recommends mitigation measures which would reduce residual impacts to an acceptable level. The residual impacts of the Project are mostly of low significance. Further investigations are required to more accurately characterise potential impacts in some areas and appropriate management strategies have been identified should they be required.

EES Exhibition

The EES is exhibited together with the draft planning scheme amendments (for the Pyrenees and Ararat Planning Schemes).

The draft amendment documents will be exhibited with one set of Public Acquisition Overlay maps for Option 1 and a second set of Public Acquisition Overlay Maps for Option 2. The draft explanatory report has been drafted so that it can apply to either Option being adopted.

The draft planning scheme amendments propose to apply Public Acquisition Overlays and to exempt VicRoads from needing planning permits for works and vegetation removal associated with the Project. The intention is to request Ministerial amendments to the planning schemes (under Section 20(4) of the *Planning and Environment Act 1987*) and therefore there may be no further opportunity for public comment on these amendments beyond the following opportunity.

The EES and draft planning scheme amendments have been placed on exhibition for public comment from Friday 14 September until Thursday 25 October and may be examined during normal business hours at the following locations:

- **VicRoads** Western Highway Project office, 237 Ring Road, Wendouree
- **Pyrenees Shire**, 5 Lawrence Street, Beaufort
- **Ararat Rural City Council**, Vincent Street, Ararat
- **Department of Transport Library**, Level 5, 121 Exhibition Street, Melbourne (phone 03 9655 8600 before visiting)

- **Ararat Regional Library**, corner of Queen and Barkly Streets, Ararat (restricted hours Mon-Thurs 10am to 5.30pm, Fri 10am to 5pm, Sat 9am to 12midday)
- **Beaufort Library**, 72 Neill Street, Beaufort (9am to 5pm daily)
- **Department of Sustainability, Environment, Water, Population and Communities Resource Library**, John Gorton Building, King Edward Terrace, Parkes ACT 2600

Obtaining and Purchasing Copies of the EES

The EES, draft planning scheme amendments and supporting documents can be viewed and downloaded from the VicRoads Western Highway Project website (www.vicroads.vic.gov.au/whp). Note: If you experience any problems downloading any of the exhibited documents or require assistance accessing them please contact VicRoads on the phone number or email below.

Free copies of both the EES Summary Brochure and a DVD of the complete EES Main Report and Technical Reports are available from VicRoads - email whp@roads.vic.gov.au or call 1300 779 642.

VicRoads will conduct community information sessions on the EES from 4pm to 7pm at the Beaufort Community Centre on Wednesday 19 September 2012 and from 4pm to 7pm at Ararat College on Thursday 20 September 2012.

To purchase hard copies of the EES Main Report and Technical Reports contact VicRoads by email: whp@roads.vic.gov.au or call 1300 779 642.

Hard copies of the EES Main Report can be purchased for \$50.

Hard copies of Technical Reports can be purchased for \$50.

How to Lodge a Submission

Interested persons and organisations wishing to comment on the EES or draft planning scheme amendments are invited to make written submissions by 5.00pm Thursday 25 October 2012.

Written submissions should be posted to:

Western Highway Project
Beaufort to Ararat EES Submissions

Planning Panels Victoria

GPO Box 500

EAST MELBOURNE VIC 3002

Alternatively, written submissions can be delivered to:

Western Highway Project
Beaufort to Ararat EES Submissions

Planning Panels Victoria

**Level 1, 8 Nicholson Street,
EAST MELBOURNE VIC 3002**

Submissions will be treated as public documents. All submissions must include the name and postal address of the submitter and must be lodged together with a Privacy Collection Notice form for this project. This form is available on the DPCD site <http://www.dpcd.vic.gov.au/planning/panelsandcommittees/current>

Anonymous submissions will not be considered. Copies of all submissions received will be forwarded to the DPCD and VicRoads. Submissions will be considered in relation to both the EES and draft planning scheme amendments. All submissions will be made available for any person to inspect, by appointment only, at the office of Planning Panels Victoria, Level 1, 8 Nicholson Street, East Melbourne. For an appointment call (03) 9637 9692.

Submissions should also:

- Identify the Project
- Identify any special interest the submitter may have in the Project
- Identify which aspect of the EES and the Project the submitter is commenting on
- Make comments
- Indicate whether the submitter wishes to make a representation to the Inquiry Panel.

Inquiry Hearing Process

An Inquiry Panel will be appointed by the Minister for Planning under the *Environment Effects Act 1978* to consider the exhibited documents and public submissions. The Inquiry Panel is also likely to be appointed as an Advisory Committee under the *Planning and Environment Act 1987*.

The Inquiry Panel will hold a Directions Hearing in the week starting 12 November 2012 in Beaufort. At this hearing, the Inquiry Panel will establish the necessary arrangements and a timetable for the public hearings.

Requests to be heard by the Inquiry Panel must be received prior to or at the Directions Hearing. All submitters who wish to present to the Inquiry Panel are asked to note these arrangements and commence preparations in advance. The Inquiry Panel is expected to commence in the week starting 3 December 2012 in Beaufort. Information on the Inquiry Panel process and timetable for the hearings will be published on the Internet as it becomes available -

<http://www.dpcd.vic.gov.au/planning/panelsandcommittees/current>

Following the public hearing the Inquiry Panel will provide a report to the Minister for Planning, including recommendations on the proposal and its impacts. The Minister for Planning will then issue a formal Assessment of the proposal to the relevant decision-makers to inform their final decisions on applications for approval.

Questions

Questions relating to the **Western Highway Project** should be directed to Grant Deeble at VicRoads – Phone: 1300 779 642.

Questions relating to the **EES** should be directed at the Department of Planning and Community Development, Environment Assessment Unit - Phone: (03) 9223 5317.

Questions relating to the public **Inquiry process** should be directed to Greta Grivas at Planning Panels Victoria on: (03) 9637 9692.

