**WESTERN HIGHWAY PROJECT**

**SECTION 3 ARARAT TO STAWELL**

**ASSESSMENT**

**under**

***ENVIRONMENT EFFECTS ACT 1978***

**Minister for Planning**

**October 2013**

**GLOSSARY**

AH Act *Aboriginal Heritage Act 2006*

AMP Access Management Policy

ASS Acid sulfate soils

CEMP Construction Environmental Management Plan

CHMP Cultural Heritage Management Plan

CMA Catchment Management Authority

DEPI Victorian Department of Environment and Primary Industries

DSE former Victorian Department of Sustainability and Environment

DSEWPC Commonwealth Department of Sustainability, Environment, Water, Population and Communities

DTPLI Victorian Department of Transport, Planning and Local Infrastructure

EE Act *Environment Effects Act 1978*

EES Environment Effects Statement

EMF Environmental Management Framework

EMS Environmental Management Strategy

EPA Environment Protection Authority

EP Act *Environment Protection Act 1970*

EPBC Act *Environment Protection and Biodiversity Conservation Act 1999*

ESD ecologically sustainable development

EVC Ecological Vegetation Class

FFG Act *Flora and Fauna Guarantee Act 1988*

FTE Full time equivalent

GDE Groundwater Dependant Ecosystems

GSM Golden Sun Moth

ha hectare

HCS high conservation significance

Hha habitat hectare

km kilometre

LOTs Large Old Trees

LPPF Local Planning Policy Framework

m metre

NES national environmental significance

NVMF Victoria’s Native Vegetation Management Framework

P&E Act *Planning and Environment Act 1987*

PAO Public Acquisition Overlay

PEPS Project Environmental Protection Strategy

PSA Planning Scheme Amendment

SEPP State Environment Protection Policy

SPPF State Planning Policy Framework

VHCS very high conservation significance

WHP3 Western Highway Project Section 3 (Ararat to Stawell)

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# Introduction

## Purpose of this document

This is the assessment of environmental effects (Assessment) under the *Environment Effects Act 1978* (EE Act) for the Western Highway Project Section 3 Ararat to Stawell (WHP3). It represents the final step in the Environment Effects Statement (EES) process under the EE Act by providing advice to decision-makers on the likely environmental effects of the proposal, their acceptability and how they should be addressed in relevant statutory decisions. The Assessment is informed by the report of the inquiry together with the EES and public submissions.

This Assessment will inform the decisions required under Victorian law for the proposal to proceed, in particular under the *Planning and Environment Act 1987* (P&E Act). It will also inform the approval decision under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

## Project description

VicRoads proposes to duplicate the Western Highway between Ararat (Pollard Lane) and Stawell (Gilchrist Road) as part of a larger project to duplicate the highway between Ballarat and Stawell. It is proposed to upgrade the Western Highway between Ararat and Stawell to freeway standard in the long-term. The project involves a bypass of Great Western but does not involve bypasses of Ararat or Stawell.

Apart from the Great Western bypass, the project would mainly involve construction of a second carriageway adjacent and parallel to the existing highway on adjoining land. A new dual carriageway is proposed to bypass Great Western leaving the existing highway north-west of Delahoy Road and rejoining the highway near Briggs Lane. The proposed alignment is to the north and east of the Great Western township, passing through a former landfill and an operating quarry. When traffic conditions warrant, and funding becomes available, it is proposed to upgrade the highway to a rural freeway standard. This would require construction of service roads for local access and grade-separated interchanges. The EES addresses the effects of both the interim upgrade to a divided rural highway and the ultimate upgrade to a freeway.

The project covers a route length of approximately 24 kilometres (km) through the Rural City of Ararat and Northern Grampians Shire. The alignment spans four significant waterways, would require two new crossings of the Melbourne – Adelaide railway line as well as a bypass of the Great Western township. It would affect land that is predominantly used for a variety of agricultural uses including grazing and viticulture.

A detailed description of the project is provided in Chapter 6 of the EES.

## Structure of this Assessment

Section 2 of this Assessment outlines both the EES process and statutory approvals required for the proposed development.

Section 3 of this Assessment first provides an outline of the process undertaken by VicRoads for analysing a range of potentially suitable alignment options for the WHP3. It then assesses the potential environmental effects of the preferred alignment that VicRoads selected for detailed evaluation in the EES. Section 3 concludes with an assessment of the proposal and its overall outcomes in the context of applicable legislation, statutory policy as well as the relevant objectives and principles of ecologically sustainable development (ESD).

Table 3 provides specific responses to the recommendations of the inquiry.



**Figure 1. Western Highway Project Section 3 – preferred alignment**

# Statutory Processes

## Environment Effects Act 1978

On 27 October 2010, the former Minister for Planning determined that an EES was required for the project under the EE Act. The EES has been prepared by the proponent in response to scoping requirements issued by the Minister for the proposal in September 2011.

The EES was placed on public exhibition, together with draft amendments to the Ararat and Northern Grampians Planning Schemes, from 20 December 2012 until 14 February 2013. Sixteen submissions were received, five of which were from state and local government bodies.

The Minister appointed an inquiry under the EE Act to review submissions and inquire into the environmental effects of the WHP3, in accordance with terms of reference issued by the Minister on 21 January 2013. The Minister also appointed the inquiry members as an advisory committee under section 151 of the P&E Act to consider the draft planning scheme amendments (PSAs) and related matters raised in submissions.

The inquiry held a directions hearing on 5 March 2013, followed by its public hearing over two days from 8 to 9 April 2013. The inquiry provided its report to the Minister on 4 June 2013. The report has informed the preparation of this Assessment of the environmental effects of the WHP3 under the EE Act.

The next step is the provision of this Assessment to statutory decision-makers, who must consider it before deciding whether to grant approval to the project.

## Victorian statutory approvals

The WHP3 requires a number of Victorian statutory approvals, including:

* Amendments to the Ararat and Northern Grampians Planning Schemes under the P&E Act to allow the application of Public Acquisition Overlays (PAOs) to the land to be compulsorily acquired for the project and to exempt VicRoads from the requirement to obtain planning permits for works and vegetation removal associated with the project, provided certain conditions are met in accordance with an Incorporated Document.
* Consents for works on waterways under the *Water Act 1989*.
* An approved Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* (AH Act).

Exhibition of draft PSAs for VicRoads’ proposed alignment was coordinated with the exhibition of the EES for the WHP3.

## Commonwealth statutory approval

On 20 December 2010, the delegate of the Australian Government Minister for Sustainability, Environment, Water, Population and Communities decided that the proposal is a ‘controlled action’ and therefore requires assessment and approval under the EPBC Act. The controlling provisions under the EPBC Act relate to listed threatened species and communities (section 18 and 18A).

The Victorian EES process is accredited as the necessary Commonwealth assessment process through a Bilateral Agreement between Victoria and the Commonwealth, made under Section 45 of the EPBC Act. Therefore, the EES for the WHP3 and this Assessment assesses potential impacts on matters of national environmental significance (NES) as defined under the EPBC Act and will inform the Australian Government’s approval decision under the EPBC Act.

# Integrated Assessment

## Approach to this Assessment

To provide a coherent and integrated structure for this Assessment of likely adverse environmental effects, the key aspects of relevant legislation, statutory policy and the principles and objectives of ESD[[1]](#footnote-1) have been synthesized into a set of evaluation objectives that are pertinent to the WHP3. A draft set of evaluation objectives was included in the scoping requirements for this EES, which were used by the proponent in their assessment of options and effects within the EES. The inquiry also used the draft objectives to frame its consideration of the key issues of the WHP3.

Table **1** lists the final set of evaluation objectives used in this Assessment and the core legislation that underpins them.

**Table 1. Assessment Evaluation Objectives**

|  |  |  |
| --- | --- | --- |
|  | **Evaluation Objectives** | **Key Legislation** |
| 1 | **Road safety and capacity**  To provide for the duplication of the Western Highway between Ararat and Stawell to enhance the safety and capacity of this inter-regional and interstate transport link. | *Transport Integration Act 2010* |
| 2 | **Biodiversity**  To avoid or minimise effects on flora and fauna species and ecological communities listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act) or the EPBC Act 1999, as well as to comply with requirements under *Victoria’s Native Vegetation Management - A Framework for Action (2002)* (NVMF)*.* | FFG Act  *Wildlife Act 1975*  NVMF  EPBC Act |
| 3 | **Infrastructure and land use**  To avoid or minimise adverse effects on existing infrastructure and land uses. | P&E Act  *Transport Integration Act 2010* |
| 4 | **Amenity and landscape**  To minimise dust emissions, noise, visual and other adverse effects on residents’ amenity as well as effects on landscape values. | P&E Act  *Environment Protection Act 1970* (EP Act)  *Transport Integration Act 2010* |
| 5 | **Catchment values**  To protect catchment values, including in relation to soils, surface water and groundwater quality, stream flows and floodway capacity, as well as to avoid impacts on beneficial uses. | *Water Act 1989*  *Catchment and Land Protection Act 1994*  EP Act  P&E Act |
| 6 | **Cultural heritage**  To protect Aboriginal and non-Aboriginal cultural heritage. | AH Act  *Heritage Act 1995*  P&E Act |
| 7 | **Environmental management framework**  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. | P&E Act  EP Act  EPBC Act |
| 8 | **Ecologically sustainable development**  To achieve an appropriate balance of environmental, economic and social outcomes, consistent with the principles and objectives of ESD and environment protection. | P&E Act  EP Act  *Transport Integration Act 2010*  EPBC Act |

## Assessment of options

The EES evaluated a range of relevant design alternatives and alignment options based on the draft evaluation objectives in the scoping requirements. VicRoads also considered its project objectives in devising the evaluation framework it applied in a three-phase process to identify and evaluate alignment options. Two important factors that influenced the development of alignment options were the need for appropriate connection with, and optimal use of, current infrastructure such as the existing highway.

In addressing potential alignments, VicRoads split the section of the Western Highway between Ararat and Stawell into three zones as follows:

* Zone 1 Pollard Lane (Ararat) to Allanvale Road (east of Great Western)
* Zone 2 Great Western bypass
* Zone 3 Briggs Lane (west of Great Western) to Gilchrist Lane (Stawell).

In phase 1 of the options assessment process, VicRoads identified up to 6 alignment options within each zone. The evaluation of this “long list” and the reasons for rejecting most of the options are provided in Chapter 5 of the EES. Of particular note was the rejection of Option 2A, which would have involved duplication of the Western Highway through the centre of Great Western township. The reasons for rejecting this option included a combination of potential effects on amenity, access and heritage, as well as the input from consultation with the community.

Phase 2 involved a more detailed assessment of short-listed options. Section 5.4 of the EES describes the methodology used, while a more detailed discussion of the options assessment process is provided in the EES Technical Appendix B. The options within each zone were rated on a scale of very well to negligible in terms of benefits, and very poor to negligible in terms of disbenefits at the local, regional and state levels[[2]](#footnote-2). Section 5.5 of the EES provides an overview of the results.

The outcome of VicRoads’ analysis of the short-listed options was the selection of one preferred alignment for the upgraded Western Highway between Ararat and Stawell shown in Figure 1. This comprises a combination of Option 1AE (Zone 1), Option 2B (Zone 2) and Option 3B (Zone 3).

The inquiry considered evidence and submissions on the options in the three zones and recommended the adoption of VicRoads’ preferred alignment for the WHP3 subject to minor modifications for property access.

The remainder of this Assessment considers in detail the environmental effects of VicRoads’ proposed alignment for the WHP3, based on the EES and inquiry report.

## Road safety and capacity

**Evaluation Objective** - *To provide for the duplication of the Western Highway between Ararat and Stawell to enhance the safety and capacity of this inter-regional and interstate transport link.*

**Key issues**

The key issues to consider regarding the project’s design and its associated safety and capacity benefits are:

* Whether the WHP3 would sufficiently improve road safety, in terms of the incidence and severity of road crashes on the Western Highway between Ararat and Stawell.
* Whether the design addresses capacity requirements in the context of its strategic role in the national transport network.

**Relevant context**

The relevant policies and guidelines that VicRoads has applied to the development and design of the WHP3 include the VicRoads Access Management Policy (AMP) and the AustRoads Guide to Road Design.

Initially, the WHP3 involves upgrading the existing highway to accord with Schedule 3 (Limited Access – Rural) of the VicRoads AMP, usually referred to as AMP3. This would involve wide median treatments at key intersections to accommodate safe turning movements. It is proposed to design the medians to provide for the turning manoeuvre requirements of standard B-Double trucks. In general, highway access would be left-in, left-out.

Ultimately, the WHP3 is proposed to be further upgraded to a rural freeway standard designated by VicRoads as AMP1. This would require grade separated freeway interchanges and entry and exit ramps to be provided. Service roads would be provided wherever alternative access to an existing property is not available.

**Discussion and findings**

The Western Highway duplication (between Ballarat and Stawell) has been funded by the Commonwealth and State Governments as part of the Nation Building Program. This was done in the context of the Western Highway being part of the National Land Transport Network, a strategically important national network of transport linkages. Indeed the Western Highway is the principal interstate road link between Adelaide and Melbourne, providing a key route for the freight industry and tourist traffic to and from the west - it is one of the busiest rural highways in the country and the most significant interstate route that is not duplicated.

According to the EES[[3]](#footnote-3), the total traffic volume along the Western Highway between Ballarat and Stawell has increased by 47 per cent over the past 20 years. The Western Highway is currently supporting a variety of traffic ranging from tourist traffic attracted to the Goldfields Touring Route, commuter traffic, B-Double trucks and farm machinery. About one-third of the highway traffic is heavy vehicles. There is an increasing problem of queuing behind slow-moving vehicles and additional costs borne by the freight industry through reductions in speed limits to improve road safety. Therefore duplication is intended to allow safe overtaking at all times and eliminate traffic queuing.

Between 1 January 2007 and 31 December 2011, there were a total of 12 casualty crashes at 12 separate locations within the project area, of which four resulted in serious injury. The WHP3 is intended to deliver important improvements to road safety by minimising existing road safety risks and providing a higher road safety standard. Key improvements expected to increase safety include: provision of central medians to reduce head-on collisions; clear zones either side of the carriageways; improved vertical and horizontal alignments; and adequate rest area facilities. VicRoads predicts that the WHP3 would reduce the crash rate from 4.24 to 3.04 per 100 million vehicle km (when constructed to AMP3 standard)[[4]](#footnote-4).

The inquiry was satisfied that the objectives of improved safety and road capacity can be achieved through the proper design and implementation of the road duplication.

The inquiry also considered that traffic problems expected during construction can be appropriately managed through careful implementation of detailed traffic management plans, consultation with affected landowners and by providing clear information to road users.

**Conclusions**

Having regard to the EES, submissions and the inquiry report, it is my assessment that the WHP3 would enable road safety to be improved between Ararat and Stawell. Further, the project will contribute to the upgrade in capacity and reliability of an important inter-regional and interstate transport link, enabling the efficient movement of freight through this corridor.

## Biodiversity and habitat

**Evaluation Objective –** *To avoid or minimise effects on flora and fauna species and ecological communities listed under the Flora and Fauna Guarantee Act 1988 or the Environment Protection and Biodiversity Conservation Act 1999 as well as to comply with requirements under Victoria’s Native Vegetation Management - A Framework for Action (2002).*

**Key issues**

In the context of the relevant legislation and statutory policy, the evaluation of potential effects on biodiversity and native vegetation needs to address the following issues:

* Whether the potential effects on native vegetation are acceptable, including whether the removal of ecological vegetation classes (EVCs) of very high and high conservation significance is acceptable in the context of the provisions of *Victoria’s Native Vegetation Management - A Framework for Action* (NVMF) or its successor.
* Whether the potential direct and indirect effects on listed species of flora and fauna and their habitat, as well as on listed ecological communities, are significant and/or acceptable.

**Discussion and findings**

**Native vegetation**

The WHP3 would affect 5 EVCs of varying quality and conservation significance. These are listed below along with their conservation status under the NVMF:

* Plains Grassy Woodland (endangered)
* Creekline Grassy Woodland (endangered)
* Grassy Woodland (endangered)
* Grassy Dry Forest (depleted)
* Heathy Woodland (depleted).

In assessing and selecting an alignment option for the WHP3, VicRoads gave a high priority to avoiding and minimising effects on native vegetation of very high conservation significance (VHCS) and high conservation significance (HCS). Table 13-5 of the EES lists specific locations where the alignment or concept design has been varied to reduce effects on native vegetation of VHCS or HCS. These measures include narrowing of the median in key areas to reduce effects on VHCS vegetation and the relocation of the London Road intersection with the Western Highway to reduce potential impacts on Emerald-lip Greenhood and Trailing Hop-bush plants.

Table 2 summarises the net native vegetation losses for the WHP3 after alignment/design measures for reducing vegetation losses have been taken into account.

In addition, some 882 large old trees (LOTs) would be lost based on the project footprint. This is potentially a major impact from the project[[5]](#footnote-5). Under the NVMF, offsetting requirements for the WHP3 would include protection of 6,688 LOTs and recruitment of 33,440 trees. According to the EES[[6]](#footnote-6), the figures provided for the loss of LOTs are likely to be reduced during the detailed design phase through micro-alignment and construction planning.

VicRoads proposes to source offsets required under the NVMF from a number of sources including: VicRoads Net Gain Bank, BushBroker, Trust for Nature and private offset brokers. There is also the potential to acquire land for offsets through negotiations with landowners near the project.

**Table 2. Summary of native vegetation losses**

| Option | Conservation Significance | Hectares (ha) | Habitat Hectares (Hha) | Offset Target (Hha) |
| --- | --- | --- | --- | --- |
| 1 | Very High | 116.62 | 64.54 | 129.08 |
| 1 | High | 16.52 | 5.19 | 7.79 |
| 1 | Medium | 0.49 | 0.17 | 0.17 |
| 1 | Low | - | - | - |
| **1** | **Total** | **133.63** | **69.90** | **137.07** |

The former Department of Sustainability and Environment’s (DSE) submission on the EES comments that VicRoads’ strategies for achieving necessary offsets are sound. It is noted that the total area of native vegetation proposed to be cleared for the WHP3 is very significant, compared to the total area of native vegetation that was permitted to be cleared in Victoria during the financial year of 2010/2011, which was 159 ha or 76 Hha. The extent of the proposed clearing for the WHP3 alone is more than 80 per cent of this 2010/2011 total of native vegetation permitted to be cleared in Victoria. A similar total of native vegetation is also required to be cleared by VicRoads for the alignment being implemented for Section 2 (Beaufort to Ararat) of the Western Highway Project.

During its hearings, the inquiry considered a number of submissions (including the DSE submission) in relation to native vegetation. Although the inquiry considered that the extent of the area of native vegetation that would be lost is undesirable, it accepted DSE’s submission that the planning of the WHP3 had followed the three-step approach as required in the NVMF and that the proposed offset strategy was sound. The inquiry considered that a relatively small area of vegetation clearance could be avoided if the option to construct the new duplicated highway over Best’s Road (leaving Best’s Road at grade with most of its verge vegetation left intact) is adopted.

This assessment considers the acceptability of the proposed vegetation clearance in light of the predicted impacts and the balancing of social and economic factors for the available alignment options. It concludes that effects on native vegetation from VicRoads’ preferred option is acceptable, having regard to VicRoads commitments to further reduce necessary clearing of VHCS native vegetation during detailed design[[7]](#footnote-7) and to meet offset requirements. Given the need to clear an extensive area of native vegetation that is of VHCS, it will be appropriate for the Secretary for the Department of Environment and Primary Industries (DEPI) to confirm that arrangements are in place to give practical effect to VicRoads’ proposed strategy for offsetting the clearance of native vegetation.

**Matters of national environmental significance**

The relevant controlling provisions under the EPBC Act are Sections 18 and 18A (listed threatened species and communities).

The EES investigations did not record any ecological communities that are listed under the EPBC Act within the project area for the WHP3[[8]](#footnote-8).

The EPBC-listed species identified in the EES investigations as potentially affected by the WHP3 are:

* Golden Sun Moth (GSM) (critically endangered)
* Trailing Hop-bush (vulnerable).

In the preliminary stage of the EES investigations, it was considered that the Button Wrinklewort, Spiny Rice Flower, Large-fruit Fireweed, Tawny Spider Orchid and Pomonal Leek-orchid may be in the project area based on the EPBC Act Protected Matters Search Tool. However targeted surveys[[9]](#footnote-9) for the species did not identify any of these species within the project area.

The EES considered potential indirect effects on the Trailing Hop-bush (along with other retained native vegetation) including construction dust, pollutants, erosion and spread of weeds and pathogens. The EES concluded that the risks are low to negligible based on the implementation of a number of mitigation measures[[10]](#footnote-10).

**Listed Flora Species**

The ***Trailing Hop-bush*** is listed under both the EPBC Act and the FFG Act. About 67 individual plants were recorded in the existing highway reserve north of the London Road intersection. In order to reduce direct impacts on Trailing Hop-bush plants, VicRoads proposes to realign about 1.1 km of the existing highway, as well as the London Road intersection, onto adjoining cleared land to the north-east of the current highway alignment. This would reduce the direct impacts on the species to 21 plants to be removed, that is by avoiding the individual plants that are located on the western side of the highway as shown on figure 20-1a in the EES. The existing highway pavement would be used for a service road in the future.

The residual impact on the Trailing Hop-bush is significant having regard to the relevant significant impact guidelines[[11]](#footnote-11) under the EPBC Act. VicRoads proposes a number of mitigation measures to minimise potential impacts on the Trailing Hop-bush. This would include preparing and implementing a conservation management plan, including a salvage and translocation plan, to be approved by DSEWPC and DEPI. Protective fencing and signposting would be used to protect Trailing Hop-bush plants that are not to be cleared during the construction stage.

After the completion of the EES, the FFG-listed Small Milkwort was detected in the vicinity of the WHP3 alignment. While subsequent investigations indicate that it is not likely to be impacted by the project, further targeted surveys need to be undertaken during the detailed design stage to confirm that the final WHP3 alignment will not affect the species.

**Listed Fauna Species**

Targeted surveys[[12]](#footnote-12) were conducted for a range of fauna species listed under the EPBC Act that were considered likely to be present in the study area, notably the GSM, Striped Legless Lizard, Southern Brown Bandicoot and Dwarf Galaxias. These species are also listed under the FFG Act. However, no Growling Grass Frogs, Southern Brown Bandicoots or Dwarf Galaxias were recorded, hence potential impacts on these species are now considered to be low.

Some 29.92 ha of GSM habitat was identified within the project area for the WHP3 based on records of GSM observations. The majority of the confirmed GSM habitat that would be affected is in the vicinity of the highway between St Ethels Road and the Great Western township[[13]](#footnote-13). Potential GSM habitat was also identified on the basis of suitable habitat for the species, irrespective of whether GSMs were actually recorded. A total of 99.94 ha of potential habitat was assessed as likely to be affected.

It has not been possible to avoid GSM habitat because of the linear nature of the project and the proximity of habitat to the existing highway. The EES anticipates that the impacts on GSM habitat and potential GSM habitat would be reduced through “micro-alignment changes” and revegetation of areas where the GSM is known to be present.

Under the relevant significant impact guidelines for matters of NES, the impact on the GSM would be significant[[14]](#footnote-14).

The fauna surveys conducted for the WHP3 recorded four species in the study area that are listed under the FFG Act. These are the Barking Owl, Brown Toadlet, Brown Treecreeper and Brush-tailed Phascogale.

The Brown Toadlet is mainly located in areas with drainage lines and culverts. While the WHP3 would traverse such habitat areas, the EES proposes a number of mitigation measures to minimise impact on the species and so any residual impact is expected to be minor.

The Barking Owl was recorded once during the fauna surveys. It is proposed to implement mitigation measures to minimise impacts on the species if it is detected during pre-construction surveys.

The Brown Treecreeper was recorded in riparian habitats with hollow-bearing River Red Gum and Yellow Box. The potential impacts on the species are expected to be minor, subject to the implementation of the mitigation measures recommended in the EES.

The Brush-tailed Phascogale was recorded on the edge of the Ararat Regional Park, however the WHP3 is not expected to have an impact of any significance on this species.

**Listed Communities**

The EES recorded no EPBC-listed ecological communities in the study area.

**Other species**

A number of other rare flora species that are on DSE’s advisory list have also been recorded in the project area and would be affected by the WHP3. According to the EES, the potential losses would be 203 Emerald-lip Greenhood plants, 37 Rosemary Grevillea plants and 13 Rising Star Guinea-flower plants. The impacts on these species are expected to be minor since the WHP3 would affect less than one per cent of their regional populations.

It is noted that the inquiry was satisfied that only two EPBC-listed species, i.e. Trailing Hop-bush and GSM, are likely to be impacted by the WHP3 and that the proposed alignment has been developed and modified to minimise the impact as far as possible, given operational requirements, on these two listed species. Further, the inquiry considered that the impacts on other state-listed flora and fauna species (i.e. under the FFG Act) would be minor as the project would impact on less than one per cent of the regional populations of these species. The inquiry noted that mitigation measures including micro-alignment during the detailed design and construction would be implemented to further minimise the impact on state-listed species.

**Conclusion**

It is my assessment that:

* The WHP3 would result in the loss of up to 134 ha of native vegetation the majority of which is of VHCS, including five EVCs, three of which are endangered. The loss of a large number of LOTs is a further significant impact of the project. Extensive offsets will be necessary to meet the requirements of the NVMF (or its successor) in order for these impacts to be acceptable.
* The EES demonstrates that the alignment options selection process and specific design measures have endeavoured to achieve a balanced outcome which takes into account native vegetation impacts, other ecological impacts and social and economic factors in order to achieve a highway of AMP1 standard between Ararat and Stawell, while also noting that further reduction of native vegetation losses (consistent with the NVMF) can be achieved through the detailed design stage.
* In light of the various relevant matters considered by this Assessment, and as summarised in section 3.10, the proposed alignment for WHP3 has appropriately avoided native vegetation where practicable.
* The impacts on the Trailing Hop-bush from the removal of up to 21 individual plants would be significant, notwithstanding the proposed mitigation measures in the EES. These impacts would be acceptable in the context of Victorian law subject to the provision of offsets and other management measures to satisfy both the NVMF (or its successor) and the objectives of the FFG Act.
* The WHP3 would have a significant impact on the GSM through habitat removal, notwithstanding attempts to minimise this impact through the options selection process. Similar considerations apply to its acceptability.
* The potential impacts on other listed species are not expected to be significant and would be acceptable provided the mitigation measures specified in the EES are implemented.

I note that there is an opportunity to integrate Victorian requirements for offsets and ecological management with any equivalent requirements that may be applied under the EPBC Act, and further, that the proponent has committed to address both requirements. In this context, it is further my assessment that:

* The commitments in Section 21.7.6 of the EES for managing potential impacts on flora, fauna and native vegetation be fully implemented.
* Before any project works commence, the Secretary for the Department of Environment and Primary Industries (DEPI) confirm that arrangements are in place to give practical effect to VicRoads’ proposed strategy for offsetting the clearance of native vegetation.
* A native vegetation loss reduction andoffset plan be prepared detailing measures to:
* further reduce the impacts on native vegetation (of VHCS in particular), on the basis of opportunities identified during detailed design,
* secure suitable offsets to satisfy applicable Victorian requirements, including identification of appropriate sites and commitments for security of protection of these sites.
* These plans are to be prepared in consultation with DEPI and other relevant parties and to the satisfaction of DEPI before construction of relevant stages commences.
* A proposed plan for the long-term sustainable management of native vegetation in the existing road reserve be provided by VicRoads for endorsement by DEPI.
* Conservation management plans for the Trailing Hop-bush and GSM, to maintain the local viability of these species in the context of project impacts, be prepared by VicRoads in consultation with DSEWPC and to the satisfaction of DEPI, prior to any relevant works being undertaken.

## Infrastructure and land use

**Evaluation Objective –** *To avoid or minimise adverse effects on existing infrastructure and land uses.*

**Key Issues**

In the context of relevant legislation and policy, the key issues for the assessment of impacts on land use and infrastructure are:

* Whether the project is consistent with planning policy in respect to land use.
* Whether the required land acquisition and/or displacement of land uses and infrastructure, with its associated socio-economic effects, is acceptable.

**Discussion and Findings**

***Planning policy***

In addition to its national highway function, the WHP3 would support relevant provisions of the Ararat and Northern Grampians Planning Schemes related to regional and economic development. Consistent with the relevant planning scheme policies and strategies, the WHP3 would improve freight efficiency, enhance safety and amenity across the local area[[15]](#footnote-15). In addition, the bypass of Great Western will improve safety and amenity of residents (as discussed further in section 3.6).

The alignment proposed by VicRoads is designed to minimise impacts on existing land uses by balancing the loss of agricultural land relative to the loss of native vegetation. The EES contends that existing agricultural land use patterns together with future planned land uses and developments are unlikely to change as a result of the project[[16]](#footnote-16).

The inquiry considered the application of a PAO over the land required for the future development to freeway standard to be responsible and proper planning practice[[17]](#footnote-17).

***Infrastructure***

Construction of the project would involve short-term impacts on utility services including water, power and communications services within the road reserve. In addition, the project would require two new crossings of the Melbourne – Adelaide rail line, which would create short-term disruption of V/Line services during construction. The inquiry concluded that these short-term impacts during construction can be appropriately mitigated through the implementation of the required CEMP[[18]](#footnote-18).

***Social***

The proposed alignment would require acquisition of approximately 217.7 ha of private property and the removal of one house and shed. While this is an extensive area to be acquired, it is an appropriate balance relative to the loss of native vegetation, as discussed in Section 3.2 of this Assessment. Landowners will be compensated for loss of land in accordance with the *Land Acquisition and Compensation Act 1986*.

As only one house is to be acquired, and given the existing planning controls, the project would not affect settlement patterns[[19]](#footnote-19). At the same time, the bypass of Great Western presents an opportunity to adjust the planning for the township to take advantage of improved amenity and reduced traffic in the town[[20]](#footnote-20). Access arrangements may be changed for some residents, in some cases leading to slightly increased travel distances. The EES suggests that this impact would be generally accepted by the community in light of the safer road conditions and that it is unlikely the project will have a negative impact on community facilities or places of significance.

***Economic***

Noting the concerns regarding potential impacts of the Great Western bypass expressed by local businesses, the inquiry accepted that, with the exception of two wineries, the project would not significantly impact access to local tourism attractions. In relation to Best’s Wines and Grampians Estate, the inquiry was concerned that proposed access arrangements may impact on business or at least could be improved as outlined in Chapter 17 of the inquiry report. In addition to these suggested changes, the inquiry highlighted the need for appropriate signage to further mitigate any negative effects on local businesses from the project both during construction and operation.

The EES estimates that during construction, the project is expected to create approximately 1,536 full time equivalent (FTE) jobs with flow-on effects expected to create 2,856 FTE jobs. The project is also expected to have additional benefits for tourism, and provide better connections between the agricultural industry and the Port of Melbourne.[[21]](#footnote-21)

The adverse economic effects of the WHP3 project are largely related to proposed acquisition or severance of private land holdings, including productive agricultural (or other) land, impacts on infrastructure and agricultural facilities with an estimated economic impact of $2.3 million over a 30 year timeframe[[22]](#footnote-22). The loss of passing trade for businesses is estimated to be between $100,000 and $1 million in total spread over at most 30 years. The EES indicates that revenue loss for non-agricultural businesses during construction is estimated to be less than $100,000 over a three year period[[23]](#footnote-23).

**Conclusions**

It is my assessment that the adverse social and economic effects arising from the WHP3 are generally low and not of regional or state significance, especially given the compensation available to parties whose land is acquired and the opportunities for VicRoads to further mitigate effects with measures established through consultation with potentially affected parties.

## Amenity

**Evaluation Objective –** *To minimise dust emissions, noise, visual and other adverse effects on residents’ amenity as well as effects on landscape values.*

**Key Issues**

The key amenity-related and landscape issues associated with construction and operation of the duplicated highway are:

* How can elevated noise levels at sensitive receptors such as residences be mitigated or managed during the construction and/or operation phases of the WHP3?
* How can dust emissions during construction be managed?
* Whether landscape effects visible from public viewpoints and visual amenity effects from nearby residences are significant and acceptable following applicable mitigation measures.

**Discussion and Findings**

***Noise***

Noise levels at sensitive receptors in the Great Western township are likely to improve due to the new WHP3 alignment being further away from the existing highway.

The Environment Protection Authority (EPA) Noise Control Guidelines (2008) set noise criteria for construction activities outside normal work hours, but not during the normal working period[[24]](#footnote-24); they do however identify a general duty to minimise noise impacts during the day. Noise criteria are specified separately for evenings, nights and weekends[[25]](#footnote-25). The EES indicates that construction activities occurring within 700 metres (m) of a sensitive receptor could exceed the evening, weekend and night time noise criteria. However, the EES indicates that construction outside of normal work hours is likely to be minimal; contractors would be required to obtain approval from VicRoads and to notify affected members of the community before works can occur outside normal work hours.

The inquiry accepted VicRoads’ submission that the EPA guidelines would apply and that noise levels could be minimised by noise reduction technology on machinery.

The EES investigated the operational traffic noise effects on sensitive receptors following completion of the WHP3 using predicted 2026 traffic volumes. Table 32 of the EES Technical Appendix M provides a detailed comparison of traffic noise levels at sensitive receptors associated both with and without the WHP3. In summary, the findings were:

* Decreased noise levels would be experienced at 67 houses, with 30 of these experiencing a noticeable decrease of 5 dB(A) or more.
* Increased noise levels would be experienced at 153 houses, with 28 of these experiencing a noticeable increase of 5 dB(A) or more, including 9 houses which are predicted to experience an increase of 10 dB(A)[[26]](#footnote-26) or more which would have traffic appearing twice as loud as current noise levels.
* Noise levels are predicted to remain the same at 21 houses[[27]](#footnote-27).

According to the EES, VicRoads’ *Traffic Noise Reduction Policy 2005* would apply to only two sections of the WHP3 which are considered “new” carriageway under the policy; these being the bypass of Great Western and the minor realignment at the London Road intersection[[28]](#footnote-28). Results from the modelling show that no house near these two sections would be subject to an increase in noise of more than 12 dB(A) and no house would be subject to a traffic noise level of greater than 63 dB(A) LA10(18hr) in 2026 following completion of the WHP3. On this basis, the VicRoads policy does not require noise mitigation measures for houses in the vicinity of the WHP3.

The EES acknowledges the need for further investigation to confirm if noise mitigation measures would be required after completion of the WHP3, particularly for houses north-east of Great Western near the proposed bypass. An overall assessment of existing noise levels and mitigation options for affected dwellings would be investigated along with cost estimates. Table 16-8 of the EES indicates that for the majority of the WHP3 where the VicRoads policy does not apply, mitigation measures would be limited to “use of alignment shifts, pavement materials, speed limits and other such items as required”. For the two sections of the WHP3 where the VicRoads policy applies, further mitigation works would be undertaken if the noise levels exceed the noise objectives of the policy.

The inquiry considered it essential that the 28 residences expected to experience an increase of 5 dB(A) or more be subject to further investigation during the development of the detailed design to determine the extent and nature of the noise attenuation measures that are likely to be required. Provided appropriate noise attenuation measures are constructed, then the adverse noise impacts arising from the operation of the project will be mitigated[[29]](#footnote-29).

***Air quality***

The EES indicates that the project’s effect on air quality would largely be confined to construction dust, as the increase in operational air emissions from vehicles travelling along the duplicated highway would be negligible and remain below the relevant intervention levels under the State Environment Protection Policy (SEPP) (Air Quality Management)[[30]](#footnote-30). Construction dust is predicted to extend approximately 500 m outside the construction corridor. The inquiry noted that within this impact zone there are 117 potentially sensitive receptors, including residential and commercial premises and agricultural properties growing grapes and olives. The inquiry considered that the management of dust is an issue not uncommon to road construction projects and can be managed through a Construction Environmental Management Plan (CEMP).

The potential for dust to impact on domestic water supplies was also investigated, however the inquiry concluded that proposed mitigation measures, including the implementation of the CEMP, including ongoing monitoring, should satisfactorily manage this impact[[31]](#footnote-31).

***Visual amenity and landscape***

The EES provides an evaluation of the potential visual effects of the WHP3, based on an analysis of landscape character types and their sensitivity to visual change. Nine landscape character types were identified within the WHP3 viewshed, and the sensitivity of each to visual change was rated on a scale from high (e.g. bushland) to very low[[32]](#footnote-32). The visual study assessed the level of change within six areas along the WHP3 on a scale from insignificant to major. The level of impact in each area was derived from a combination of the sensitivity of the landscape character and the level of change from the WHP3 in each area to produce an impact rating.

The inquiry noted the following key areas where the landscape character is likely to be diminished and/or residents’ viewsheds affected:

* The duplicated overpass of Garden Gully Road in Armstrong
* The new bypass of Great Western
* In the vicinity of Sisters Rocks
* The proposed interchange at London Road[[33]](#footnote-33).

Photomontages of three of these views are provided in the EES and Table 17-10 outlines a range of measures that would be implemented to mitigate visual impacts through sensitive design, screening or landscaping along the WHP3. The risk assessment undertaken indicates residual risks for these locations are of a negligible to medium level. The inquiry concluded that overall the project will have a minor impact on visual and landscape values and that, with the appropriate implementation of proposed mitigation measures, concerns raised by submitters should be easily addressed[[34]](#footnote-34).

**Conclusions**

It is my assessment that:

* The bypass of Great Western will generally improve the amenity within the town.
* Effects on air quality are likely to be confined to construction dust, which should be effectively managed through standard procedures and additional measures that are outlined in the Environmental Management Framework (EMF).
* The WHP3 would result in a noticeable increase in traffic noise levels at 28 houses, which may be unacceptable in the absence of appropriate mitigation.

Further, it is my assessment that:

* Further investigation be undertaken (such as during the development of detailed design) to enable appropriate noise attenuation or mitigation measures to be identified, to address potentially unacceptable increases in traffic noise at the 28 houses identified in the inquiry report and the EES.
* The potential visual amenity and landscape impacts of the WHP3 are acceptable provided the detailed mitigation measures specified in Table 17-10 of the EES are incorporated into the landscape plan for the WHP3 and are implemented.

## Catchment Values

**Evaluation Objective –** *To protect catchment values, including in relation to soils, surface water and groundwater quality, stream flows and floodway capacity, as well as to avoid impacts on beneficial uses.*

**Key Issues**

The key issues in relation to water and catchment values are:

* Whether construction of the WHP3 will have potentially significant effects on groundwater and its beneficial uses including groundwater dependent ecosystems (GDEs), or in relation to erosion and exposure of contaminated or hazardous soils.
* Whether the construction of the WHP3 and related waterway crossing structures will have significant effects on the water quality and beneficial uses of water environments, or on the behaviour and characteristics of floodwaters.

**Discussion and Findings**

***Soils***

The desktop study for the EES concluded that there is a medium potential for the WHP3 to encounter contaminated soils during construction. The main area of concern is the former Great Western Landfill site which would be traversed by the proposed bypass of Great Western township. There is a risk of construction workers being exposed to uncontrolled municipal (and potentially prescribed) waste, leachate and contaminated soils and groundwater. Table 10-3 outlines a number of mitigation measures to reduce the risk, including relocation of landfill material into a new cell in accordance with the EPA publication 788.1 *Best practice environment management: siting, design, operation and rehabilitation of landfills* (2010). These measures would reduce the risk to a medium level.

Other potential areas of contaminants include previous sheep dips, historic land management practices along the railway lines, historic mining works or buried waste. If encountered, this type of contamination is expected to be localised. The proposed controls for this are specified in Table 10-3 of the EES and include compliance with the SEPP *Prevention and Management of Contamination Land 2002*.

The preliminary desktop assessment did not identify potential acid sulfate soils (ASS) in the study area. However, VicRoads proposes that any soils suspected of being ASS would be sampled and, in the event that they are confirmed to be ASS, a Management Plan would be prepared[[35]](#footnote-35) in accordance with the EMF and *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils* (DSE, 2010).

Pre-construction geotechnical investigations will be undertaken to further examine the potential for erosion, soil stability issues and other risks associated with soils along the alignment, including with respect to potential sources of contamination. Erosion control measures and potential ground improvement techniques would be implemented in accordance with the EMF and CEMPs.

The inquiry was satisfied that the EES had adequately considered and assessed the issues associated with soils and geology.

***Surface Water***

According to the EES, the WHP3 would cross four significant named watercourses (Concongella Creek, Allanvale Creek, Robinson Creek and Donald Creek). Concongella Creek is the waterway most affected by the WHP3. The highway crosses Concongella Creek seven times and it is proposed to realign about 140 m of the creek north of Armstrong. For the bypass of Great Western, there would be two new crossings on Concongella Creek and one new crossing on Allanvale Creek.

The EES states that potential impacts on river health, due to the disturbance of the bed and banks as well as runoff effects on water quality, are expected to be minor where the WHP3 would involve upgrading of existing waterway crossings. For the realigned section of Concongella Creek and the new crossings required for the bypass of Great Western, the potential effects on river health are rated as moderate. The realignment of Concongella Creek would affect a section that has established vegetation and in-stream features such as woody debris, riffles and persistent pools. The proposed Great Western bypass would cross Allanvale Creek at a skewed angle in the vicinity of a major interchange within the floodplain. Partial realignment of the creek may be required to reduce potential river health impacts. The EES further states that implementation of mitigation measures of the EES through the detailed design and construction phases would reduce the impacts of works on and near waterways to a minor level[[36]](#footnote-36). Approval from the Wimmera Catchment Management Authority (CMA) for Works on Waterway will be required under the *Water Act 1989,* and expected prerequisites include an agreed design concept for the creek realignment that adequately addresses the reinstatement of stream morphology and environmental features or values.

The inquiry concluded that the likely effects of project works on surface water environments would be low and hence acceptable[[37]](#footnote-37).

A major issue associated with the WHP3 is the potential alteration of flooding conditions in the Concongella Creek catchment with consequent effects on nearby rural landholders and the residents of Great Western township. The flooding characteristics of Concongella Creek are complex with potential flooding resulting from a number of convergences of Concongella Creek with its main tributaries as well as with Hyde Park Creek and Allanvale Creek. The convergence of Robinsons, Donald and Cobeys Creeks north of Great Western further complicates the flooding situation for both the highway and the township. The EES[[38]](#footnote-38) described the major flooding that occurred as a result of a series of storm events during January 2011 resulting in the closure of the highway and extensive flooding within the Great Western township.

A number of submissions have raised concerns that the current flood risk for rural properties and for Great Western residents could be exacerbated by the WHP3.

Preliminary modelling of a 1 in 100 year flood event was undertaken as part of the EES investigations. The modelling identified that the existing highway causes flood waters to be constricted at a number of waterway crossings, with the highway being overtopped for several hundred metres in such events. This modelling also predicted that an afflux from the highway waterway crossings would result in impacts on adjoining rural properties.

The preliminary modelling examined the change in downstream flood conditions that would result by applying the following design criteria to the WHP3:

* There would be no increase in afflux[[39]](#footnote-39) at existing waterway crossings or creation of afflux at new crossings that would impact properties.
* The upgraded highway would not be overtopped and adopt 1 metre freeboard above the 1 in 100 year flood event.

The EES acknowledged that the adoption of these flood design criteria could result in potential impacts to rural properties and the Great Western township. The potential flooding impacts on Great Western were rated as major, while impacts on rural properties with dwellings would be moderate. Flood mitigation measures are therefore required and are proposed to be incorporated into the design of the WHP3 to reduce the flood risk to minor.

The preliminary modelling undertaken for the EES has been able to show that the WHP3 may be implemented without worsening the flooding impacts on the Great Western township, by using a combination of measures, including:

* Ensuring that there is minimal redistribution of Concongella Creek flows at the complex interchange arrangement proposed south of Great Western.
* Designing the new crossing of Allanvale Creek to provide some attenuation of flood flows (while not impacting upstream rural properties).
* Designing waterway crossings upstream of Great Western to provide some attenuation of flood flows.

The submission by the Wimmera CMA stated that more detailed and refined hydrologic and hydraulic modelling analysis is required for the detailed design of the WHP3. It also noted that the hydraulic model used by VicRoads for the EES investigations does not consider drainage within the township of Great Western.

The EES acknowledged that detailed design of the road and waterway crossings requires further flood modelling to confirm where and how restricting the flows upstream would address or remove flooding issues in Great Western. Specifically the EES[[40]](#footnote-40) identifies the following additional work to be undertaken for the WHP3:

* Detailed survey of the road level, waterway crossings and floor levels of houses in potentially affected areas.
* Further hydraulic assessments of waterway crossings and iterative flood modelling to inform the development of the crossing designs to meet the project criteria.
* Detailed design of carriageways and waterway crossings.
* Consideration of runoff and the stormwater system within Great Western.
* Ongoing consultation with the Wimmera CMA, local council and potentially affected landowners.

It is clear that while the preliminary flood modelling done for the EES suggests that the design objectives for the WHP3 could be achieved, such that adverse impacts on properties within the Great Western township and related flooding conditions are avoided, more detailed modelling and road/waterway crossing design work is needed to both help confirm appropriate flood mitigation measures and to ensure any impacts are acceptable.

***Groundwater***

The potential effect on groundwater resources is mainly related to excavation during construction intercepting the groundwater table and therefore requiring some dewatering. Hydrogeological investigations have yet to be undertaken to determine the actual location and depth of the groundwater along the WHP3 alignment. The EES’s desktop study used available information from some existing bores, together with information provided by the quarry operator near Great Western - salinity levels in the groundwater table in the area are expected to be high, based on available bore water records.

In order to assess the potential risk of intercepting groundwater, the EES identified areas where cuts below grade of greater than 3 m will be required. The 3 m criterion was considered appropriate as in locations where groundwater is within 2 m of the ground surface, salinisation and water logging issues are likely to occur, for which road designers would likely establish grade lines in fill (as opposed to cut).

The groundwater assessment undertaken for the EES determined that less than 1.5 km of the route would be likely to require a cut below 3 m and hence this represents a relatively low and acceptable risk of intersecting groundwater. Further, the deepest cuts are likely to be in areas of higher topography (such as along the proposed bypass for Great Western), where deeper groundwater is expected based on available records[[41]](#footnote-41). According to the EES, the quarry operator in this area has advised VicRoads that groundwater intrusion has only occurred at depths below 6 m within the quarry, which is approximately the depth of cut proposed for the WHP3 at this location.

Regional mapping of GDEs by the former Department of Primary Industries indicates that such ecosystems may be present in the study area. However, the generally high salinity levels of groundwater in the project area are not considered conducive to plant growth[[42]](#footnote-42). The EES assessed the residual risk of impacts on GDEs to be negligible, particularly as alternative environmental water sources would be used to maintain any potentially affected GDEs[[43]](#footnote-43) in the event they were determined to be at risk.

A groundwater management plan, together with geotechnical investigations, is to be undertaken to inform detailed design of cuts. This approach will reduce the need for dewatering and hence will assist in mitigating the risk for groundwater assets to a low or negligible level. The EES determined the majority of groundwater risks to be negligible or low, largely due to much of the project being constructed above the existing grade. The inquiry stated that, with the implementation of proposed mitigation measures, there are not expected to be any significant groundwater impacts[[44]](#footnote-44).

**Conclusions**

It is my assessment that:

* The potential effects on water quality from works on and near waterways are unlikely to be significant provided the mitigation measures specified in Table 12-7 of the EES are fully implemented.
* The project’s effects on groundwater are unlikely to be significant, although there is some uncertainty regarding the depth and quality of groundwater in the project area and its relationship to GDEs likely to be present, which needs to be resolved in order to inform the detailed design.
* The preliminary flood modelling indicates that the design objectives for the WHP3 could be achieved without increasing the flood risks for the township of Great Western, however more detailed modelling and road/waterway crossing design work is needed in order to provide sufficient evidence that all impacts on flooding conditions and hydrology will be minor and acceptable.

Further, it is my assessment that:

* VicRoads prepare a groundwater management plan, and provide it to the relevant CMA (Wimmera and Glenelg Hopkins) for endorsement in order to confirm any measures necessary to minimise the potential for adverse effects on groundwater and any relevant GDEs, prior to related works. This plan is to be supported by necessary geotechnical investigations to establish the location and characteristics of groundwater to be intersected by the project.
* This plan be supported by necessary geotechnical testing to identify potential ASS in areas of project works, in order to inform appropriate design and control measures, and confirm whether an ASS Management Plan needs to be prepared and implemented in accordance with the relevant guidelines[[45]](#footnote-45).
* The amendment to the Northern Grampians Planning Scheme to facilitate the WHP3 require VicRoads to obtain the endorsement by the Wimmera CMA of the detailed design of the waterway crossings and flood mitigation measures for the WHP3, after the following steps are undertaken by VicRoads:
  + Detailed hydrologic and hydraulic modelling for the WHP3, to the satisfaction of the Wimmera CMA, to predict the change in flood exposure for Great Western and rural properties likely to be caused by the WHP3.
  + Consultation with the local community, including residents of Great Western and rural property owners that may be affected by changes to floodplain conditions, about the calibration and validation of the detailed flood model for the WHP3, with a summary of the findings and proposed flood mitigation measures being made available for public information.
  + Provision of a detailed report to the Wimmera CMA on flood risks and mitigation for the WHP3, including detailed design of waterway crossings, culverts and creek realignments, detailed predictions of changes to flood conditions for affected properties, and proposed mitigation measures. Where properties are predicted to have a higher risk from a 1 in 100 year rainfall event because of the WHP3, the report is to be accompanied by the written agreement of the affected land owners to the works required for the flood-related project objectives for the WHP3 to be achieved.

## Cultural Heritage

**Evaluation Objective –** *To protect Aboriginal and non-Aboriginal cultural heritage*.

**Key Issues**

The key issue to be considered for this section is whether the WHP3 would have a significant effect on Aboriginal or non-Aboriginal cultural heritage sites and values.

**Discussion and Findings**

***Aboriginal cultural heritage***

VicRoads’ preferred alignment largely avoids Sisters Rock, which both (then) Registered Aboriginal Party (RAP) applicants (the Martang[[46]](#footnote-46) and the Barengi Gadjin) identified as being a site of particular cultural significance. Further, as the preferred alignment comprises duplication of the existing Western Highway in the vicinity of Sisters Rock, this avoids further incursions into the culturally significant viewshed to the Black Ranges, which was likely for other options considered by VicRoads.

The proposed alignment would however, directly impact upon six registered Aboriginal cultural heritage sites, three of which are of minor significance (artefact scatters) and three of moderate significance (scarred trees)[[47]](#footnote-47). While there is also potential for mortuary trees to be present within the area, inspection of suitable trees did not identify evidence of their use for mortuary purposes[[48]](#footnote-48).

The EES assessed the overall risk to Aboriginal cultural heritage from the project as being minor to moderate[[49]](#footnote-49).

The inquiry was satisfied that the assessment of potential effects on Aboriginal cultural heritage in the project area to date provides an adequate basis for concluding that the risks are minor to moderate and that a CHMP would be a satisfactory mechanism for managing the risks associated with all potentially affected sites[[50]](#footnote-50).

In the absence of a formal RAP, the Office of Aboriginal Affairs Victoria will need to approve a CHMP prior to construction commencing. This CHMP will need to include contingencies to manage potential impacts on any as yet unknown Aboriginal cultural heritage values.

***Non-Aboriginal***

A total of 14[[51]](#footnote-51) historical sites were identified either within or directly adjacent to the preferred alignment. In total, nine sites[[52]](#footnote-52), listed on the Heritage Inventory and considered to be of local historic significance, will be directly impacted through proposed removal or relocation. There is also potential for impacts on a further three[[53]](#footnote-53) sites on the Heritage Inventory where the surface extent was not detectable but subsurface components may be exposed during construction. Impacts to the remaining two sites, the Sister’s Rocks and St Ethel’s Winery, will be largely avoided or mitigated through careful management of construction activities.

The EES assessed the overall impact on non-Aboriginal cultural heritage to be moderate[[54]](#footnote-54).

The inquiry concluded that, in the absence of specific submissions or the presentation of evidence to suggest that the nine sites should not be removed or relocated, it was satisfied that effects on non-Aboriginal cultural heritage would be moderate and should not be of sufficient concern to reject the granting of approvals for the project[[55]](#footnote-55).

Permits will need to be sought from Heritage Victoria prior to the disturbance, removal and/or relocation of historic sites.

**Conclusions**

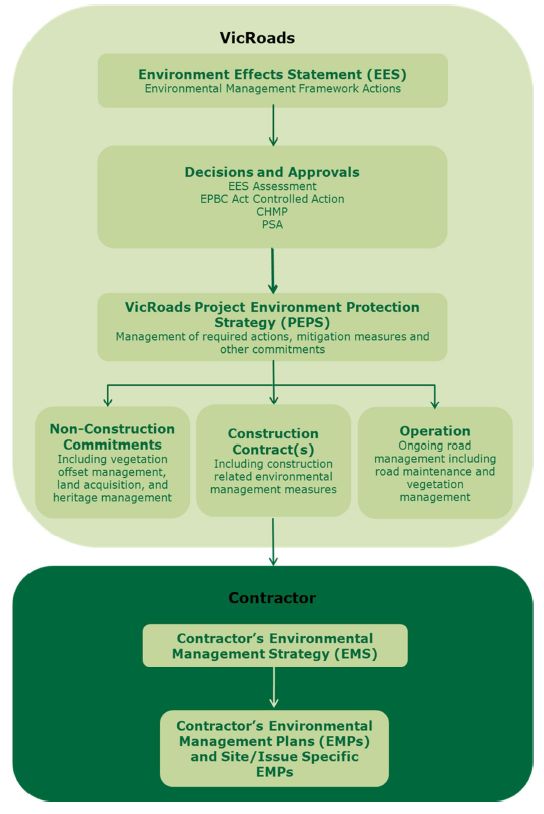
It is my assessment that known effects on Aboriginal and non-Aboriginal cultural heritage, while moderate, are largely of local significance and would be acceptable, providing the proposed management approaches are implemented to the satisfaction of the relevant decision-makers.

## Environmental Management Framework

**Evaluation Objective –** *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.*

**Discussion and Findings**

The EES provides a preliminary EMF, which allocates responsibility and outlines the overall approach for the management of potential environmental effects of the WHP3, from the detailed design stage through to construction and operation. The mitigation measures identified in the EMF would be incorporated into a Project Environmental Protection Strategy (PEPS) for the WHP3 to be prepared by VicRoads. These measures would be carried through into appropriate management strategies and plans to be implemented by either VicRoads or a contractor(s) (see Figure 2 below for further detail).



**Figure 2. VicRoads’ Project Environmental Management Structure (EES, Figure 21-1, page 21-4)**

The contractor(s) would be required to have an Environmental Management Strategy (EMS) in place that is consistent with ISO14001:2004 standards. Both a refined EMF and contractor(s)’ EMS would provide for the development and implementation of both project/section-wide and site and/or issue-specific CEMPs, which would ensure particular environmental risks at key locations are addressed. The CEMPs would be developed in consultation with relevant authorities and to address the EPA Environmental Guidelines for Major Construction Sites.

The EES provides an outline of all the environmental measures that would be incorporated into the design, construction and operation of the WHP3 through the management structure in Figure 2, as well as specifying the organisation responsible for those measures. Tables 21-3 to 21-41 in the EES specify the objectives, indicators and environmental measures that would apply to the WHP3 under the relevant environmental factors, namely: Planning and land use, Traffic and transport, Geology and soils, Groundwater, Surface water, Biodiversity and habitat, Aboriginal cultural heritage, Non-Aboriginal heritage, Air quality, Noise, Visual and landscape, Social and Economic.

**Conclusion**

It is my assessment that a refined EMF for the WHP3, building on that outlined in the EES, will provide a robust and transparent framework for the management of residual environmental effects and achievement of acceptable environmental outcomes.

Further, it is my assessment that:

* VicRoads ensure measures set out within the EES are incorporated into project implementation through a refined EMF (potentially within a PEPS) and appropriate management strategies and specific plans (e.g. CEMPs).
* The requirement for a refined EMF and relevant management plans be included as conditions (as set out below) of the planning scheme amendment incorporated documents and be developed in consultation with, and to the satisfaction of, the appropriate agencies:
  + *EMF*: Prior to the commencement of construction or works associated with the project, an EMF or equivalent document must be prepared for the project, including relevant requirements as set out in the Minister for Planning’s Assessment under the *Environment Effects Act 1978*. The EMF or equivalent document needs to be submitted to and endorsed by the Secretary of the Department of Transport, Planning and Local Infrastructure (DTPLI) (or their delegate).
  + *CEMPs*: Prior to the commencement of works (or stage of works), a CEMP(s) must be prepared in consultation with DEPI and the relevant municipality [either Ararat Rural City Council or Northern Grampians Shire Council], and then be submitted to, and endorsed by the Secretary of DTPLI (or their delegate).
  + A *native vegetation loss reduction plan* detailing additional measures to reduce the impacts on native vegetation identified during the detailed design stage, be prepared to the satisfaction of DEPI before construction commences.
  + *Native vegetation offset plan* (see section 3.4 of this Assessment).
  + *Threatened species management plans* for the Trailing Hop-bush and Golden Sun Moth (see section 3.4 of this Assessment).
  + *Groundwater management plan* (see section 3.7 of this Assessment).
  + *Flood mitigation report* (see section 3.7 of this Assessment).

## Ecologically Sustainable Development

**Evaluation Objective –** *To achieve an appropriate balance of environmental, economic and social outcomes, consistent with the principles and objectives of ESD and environment protection.*

This section focuses on the acceptability of the environmental outcomes of the WHP3, relative to the economic and social outcomes, including in the context of the principles and objectives ofESD. The Ministerial Guidelines made under section 10 of the EE Act specifically require the assessment of the effects of a project to consider the principles and objectives of ESD and principle of environment protection. The project’s overall consistency with the following objective and principle of ESD are particularly pertinent:

* To protect biological diversity and maintain essential ecological processes and life-support systems.
* Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equity considerations.

**Environmental and Socio-economic Outcomes**

In summary, this Assessment has identified the following key environmental and socio-economic outcomes:

* The implementation of the WHP3 will result in a reduction in the average crash rate between Ararat and Stawell from 4.24 to 3.04 per 100 million vehicle km.
* The project will result in the permanent loss of a significant extent of areas of native vegetation (up to 134 ha), most of which is of VHCS, as well as approximately 882 LOTs, although it is expected that these quantities would be reduced during the detailed design and construction planning stages of the project.
* The project will result in a significant impact on two EPBC-listed species (Trailing Hop-bush and the GSM).
* Disruption to local agriculture, current landholders and residents will occur during the construction period and some landholders will be affected by public acquisition of land. The proposal would result in amenity impacts in local areas, including noise impacts (refer to section 3.6).
* Impacts on Aboriginal cultural heritage will occur, although it can be readily managed through the CHMP required under the AH Act (refer to section ).
* The implementation of the EMF should enable the proposal to be implemented in an overall manner that is environmentally acceptable (refer to section 3.9).

**Balance of Environmental, Social and Economic Outcomes**

I concur with the inquiry that subject to the implementation of appropriate offsets and mitigation measures proposed by VicRoads, the environmental effects of the WHP3 can be managed to acceptable levels and that the adverse long-term effects on surrounding properties and landscape values should be minimal[[56]](#footnote-56). Despite the extensive land acquisition required for the road reservation, the associated socio-economic impacts are essentially of local significance and are acceptable in the wider context.

In terms of economic outcomes, the role of this interstate freight link between regional and metropolitan centres including export hubs, as well as the nexus between agricultural output and manufacturing employment in the region, means that the upgrading of the Western Highway’s capacity provided by the WHP3 will make an important contribution to economic competitiveness[[57]](#footnote-57). Further, the expected generation of over 1,500 FTE jobs directly and indirectly involved with construction and flow-on effects of over 2,800 FTE jobs will provide a boost to the regional economy over the three year construction period.

During the EES investigations, VicRoads sought to achieve a balance of environmental, social and economic outcomes. In addition to considering how to avoid and reduce impacts on significant native vegetation and biodiversity values, VicRoads also addressed the potential social and economic outcomes for local communities and adjoining land use that could result from the acquisition of land. This was done consistently throughout the three phases of the options selection process (refer to section 3.2).

**Overall Conclusions**

Having regard to the EES, the inquiry’s report and matters raised in submissions, it is my overall assessment that:

* In relation to both the relevant legislation and policy framework and the overall benefits of the project in terms of enhancing its important role as a national highway, the potential environmental effects of the WHP3 are acceptable, provided the appropriate minimisation, mitigation and management measures, as reflected in the findings of this Assessment, are implemented.
* The WHP3 will provide a net benefit to the State of Victoria, having regard to both long-term and short-term economic, environmental and social considerations.

Table 3. Inquiry’s recommendations (in the left column) and the Minister for Planning’s response to the recommendations (in the right column).

| **Inquiry Recommendation** | **Response** |
| --- | --- |
| Road Alignment, Layout and Design |  |
| The Minister for Planning should approve Planning Scheme Amendments C30 to the Ararat Planning Scheme and C45 to the Northern Grampians Planning Scheme via the provisions of section 20(4) of the Planning and Environment Act 1987, including:   * Introduction of the proposed Public Acquisition Overlays in the Ararat and Northern Grampians Planning Schemes consistent with the alignment as recommended in Part B of this report; * Amendments to Clause 52.03 ‘Specific Sites and Exclusions’ of the Ararat and Northern Grampians Planning Schemes to exempt the Western Highway Project (Section 3 Ararat to Stawell) and associated works from requiring planning permits; and * The proposed Amendment to Clause 81.01 of the Ararat and Northern Grampians Planning Schemes to introduce the ‘Western Highway Project: Section 3 – Ararat to Stawell Incorporated Document’. | Agreed, subject to revision of the Incorporated Document to incorporate the conclusions of this Assessment. |
| That should further information become available, the final design of the Great Western bypass should consider the incorporation of flood mitigation measures that would reduce the flooding of Great Western township. | Agreed, subject to the incorporation of the recommendations of section 3.7 of this Assessment in respect to more detailed design and flood modelling. |
| That any works approvals granted now should be subject to a review of the Project’s impact on flora and fauna should the Project not have commenced within 15 years | Agreed |
| The adoption of VicRoads recommended alignment for Zone 1, extending from Pollard Lane to Allanvale Road, and its proposed access arrangements at both the Highway duplication and Freeway stages with the following change:   * The south west side service road proposed between chainage 1400 and 3700 in the Freeway stage should be implemented at the Highway (AMP3) stage. | Agreed |
| The adoption of VicRoads recommended alignment for Zone 2, extending from Allanvale Road to Briggs Lane, and its proposed access arrangements at both the Highway duplication and Freeway stages subject to:   * More direct access being provided to Grampians Estate Winery via an access lane to an extended service road past the Winery and joining to St Ethels Road. * An off ramp being provided for westbound traffic to Best’s Road. * Investigation of the feasibility of retaining Best’s Road at grade and altering the grade line of the Highway to go over Best’s Road. * Provision of an emergency access gate to enable emergency access from Hurleys Road on to the Highway reserve. | Agreed, subject to VicRoads giving consideration to the merits of an off-ramp for westbound traffic at Best’s Road, the feasibility of modifying the proposed interchange design to retain Best’s Road at grade, more direct access for the Grampians Estate and emergency access arrangements at Hurleys Road. |
| The adoption of VicRoads recommended alignment for Zone 3, extending from Briggs Lane to Gilchrist Road, and its proposed access arrangements at both the Highway duplication (AMP3) and Freeway (AMP1) stages, subject to:   * Modification of Public Acquisition Overlay maps to reflect the changes to land to be acquired in the vicinity of the London Road interchange (as tabled at the Hearing); * The deletion of the proposed service road on the west side between Sisters Rocks Bushland Reserve and Panrock Reservoir Road in the Highway (AMP3) stage; and * Reassessment of options for access to properties on the west side between Sisters Rocks Bushland Reserve and Panrock Reservoir Road prior to the construction of the Freeway (AMP1) stage.   and that this modified alignment be used as a basis for:   * Detailed design and implementation; and * The implementation of a Public Acquisition Overlay as proposed in the Draft Amendments C30 to the Ararat Planning Scheme and C45 to the Northern Grampians Planning Scheme. | These matters need to be further investigated by VicRoads in consultation with Northern Grampians Shire Council, before the Public Acquisition Overlay is finalised. |

1. See *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* made under section 10 of the EE Act, pp. 19 and 27. [↑](#footnote-ref-1)
2. See Table 4 EES Appendix B Options Assessment Report. [↑](#footnote-ref-2)
3. See EES page 2-5. [↑](#footnote-ref-3)
4. See EES page 9-9. [↑](#footnote-ref-4)
5. Table 4 of the EES Appendix H provides ratings for consequences of removal of LOTs. According to the EES, the actual loss of LOTs would be reduced through detailed design and construction planning point where the impact would be moderate rather than major. [↑](#footnote-ref-5)
6. See EES page 13-2. [↑](#footnote-ref-6)
7. See EES, page 13-22 [↑](#footnote-ref-7)
8. See EES Table 20-1. [↑](#footnote-ref-8)
9. The timing of the targeted surveys is shown in Table 20-2 of the EES. [↑](#footnote-ref-9)
10. See EES Tables 13-8 and 13-9. [↑](#footnote-ref-10)
11. *Matters of National Environmental Significance – Significant impact guidelines 1.1 – Environment Protection and Biodiversity Conservation Act 1999* Australian Government Department of the Environment, Water, Heritage and the Arts (2009). [↑](#footnote-ref-11)
12. Details on the timing and methodology used for the targeted fauna surveys are provided in the EES Technical Appendix H. [↑](#footnote-ref-12)
13. See Figure 20-1 in EES. [↑](#footnote-ref-13)
14. Note that the EES also describes the impact as “moderate” on the basis of the evaluation criteria formulated for the assessment of options. In this context, a rating of moderate applies if the WHP3 would involve the clearing of less than one per cent of the regional area population. A description of the consequence criteria and ratings is provided in Table 4 of the EES Technical Appendix H. [↑](#footnote-ref-14)
15. See EES page 2-5. [↑](#footnote-ref-15)
16. See EES page 8-1. [↑](#footnote-ref-16)
17. See inquiry report page 21. [↑](#footnote-ref-17)
18. See inquiry report page 21. [↑](#footnote-ref-18)
19. See EES page 18-10. [↑](#footnote-ref-19)
20. See EES page 18-10. [↑](#footnote-ref-20)
21. See EES page 19-1. [↑](#footnote-ref-21)
22. See EES page 19-1. [↑](#footnote-ref-22)
23. See EES page 19-1. [↑](#footnote-ref-23)
24. Normal working hours are specified as 7:00 am to 6:00 pm Monday to Friday and 7:00 am to 1:00 pm Saturday. [↑](#footnote-ref-24)
25. See EES Table 16-5. [↑](#footnote-ref-25)
26. An increase of 10 dB(A) would appear twice as loud. [↑](#footnote-ref-26)
27. See EES page16-10 and inquiry report page 62 [↑](#footnote-ref-27)
28. See EES page 16-14 [↑](#footnote-ref-28)
29. See inquiry report page 64 [↑](#footnote-ref-29)
30. See EES page 15-10. [↑](#footnote-ref-30)
31. See inquiry report page 57. [↑](#footnote-ref-31)
32. See EES Table 17-2. [↑](#footnote-ref-32)
33. See inquiry report page 69. [↑](#footnote-ref-33)
34. See inquiry report page 70. [↑](#footnote-ref-34)
35. See EES page 10-12. [↑](#footnote-ref-35)
36. The proposed mitigation measures are outlined in Table 12-7. [↑](#footnote-ref-36)
37. See inquiry report page 39. [↑](#footnote-ref-37)
38. See EES page 12-15. [↑](#footnote-ref-38)
39. The EES (page 12-15) defines the term ‘afflux’ as a rise in water level on the upstream side of a bridge or obstruction. [↑](#footnote-ref-39)
40. See EES page12-17. [↑](#footnote-ref-40)
41. *Ibid.* [↑](#footnote-ref-41)
42. See EES page 11-1. [↑](#footnote-ref-42)
43. See EES page11-10. [↑](#footnote-ref-43)
44. See inquiry report page 33. [↑](#footnote-ref-44)
45. *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils* (DSE, 2010). [↑](#footnote-ref-45)
46. The RAP application of Martang Pty Ltd was declined by the Victorian Heritage Council in February 2012. [↑](#footnote-ref-46)
47. See EES Table 14-3. [↑](#footnote-ref-47)
48. See EES page 14-6. [↑](#footnote-ref-48)
49. See EES page 14-11. [↑](#footnote-ref-49)
50. See inquiry report page 53. [↑](#footnote-ref-50)
51. See EES Table 14.10, plus additional site, St Ethel’s Winery, discussed on page 51 of inquiry report. [↑](#footnote-ref-51)
52. See Technical Appendix I page 41. [↑](#footnote-ref-52)
53. *ibid*  [↑](#footnote-ref-53)
54. See EES page 14-1. [↑](#footnote-ref-54)
55. See page 53 of the Inquiry report. [↑](#footnote-ref-55)
56. See page 81 of the inquiry report. [↑](#footnote-ref-56)
57. See EES page 19-7. [↑](#footnote-ref-57)