17. Visual and Landscape

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

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 the proposed duplication 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 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 would exacerbate the existing visual outlook of a view towards a road. Where the duplication would utilise 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 cultural value for the community, particularly the town centre of Buangor, there are impacts upon the northern outlook from Buangor Primary School, which can be reduced through appropriate mitigation.

Langi Ghiran State Park is the key area where landscape character is impacted. In this area, Option 1 results in a moderate impact upon the Vegetated Rural landscape character type, 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.

17.1 EES Objectives

The EES objectives relevant to this section of the EES are:

- *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*.

This chapter discusses the existing visual and landscape amenity of the study area, the potential impacts of the Project on this visual amenity, and the management measures recommended to minimise these impacts. More specifically this chapter:

- Characterises the existing landscape character, identified sensitive receptors (including dwellings, Buangor Primary School, Langi Ghiran State Park Lookouts, Mount Buangor State Park Lookout waterways and other recreational or community spaces) in the study area
- Describes the significance of the landscape and its sensitivity to change
- Identifies the key features of the project and relevant alternatives, which may result in visual and landscape effects during construction and operation
- Identifies and assesses the potential changes to the landscape, and associated effects on visual amenity
- Assesses the capacity of the landscape as a whole to accommodate the project and any relevant alternatives without significantly diminishing the landscape character
- Assesses potential effects of the project and relevant alternatives (including ancillary works, such as acoustic barriers) on identified sensitive receptors in the study area, including dwellings
- Assesses the effects of the project on the visual and landscape character of the project area and adjoining areas taking into account distances and user group sensitivities to landscape modifications
- Identifies measures to avoid, minimise and/or mitigate visual and landscape effects
- Identifies likely residual effects on the visual amenity of sensitive receptors and the landscape character within and adjoining to the project area.

This chapter is based on a Visual and Landscape Impact Assessment report completed by Aspect Studios associated with the ultimate upgrade road to freeway standard, and is included in Technical Appendix N.

17.2 Study Area

The visual and landscape assessment study area is the same as the project area, encompassing an area approximately 38 kilometres (km) long and extending 1500 metres (m) north and south of the existing highway road reserve. However, there are instances when visual impacts have been investigated outside of this 1500m proximity.

17.3 Methodology

Existing Conditions

The methodology used for the visual and landscape existing conditions assessment included desktop analysis, field inspections and review of the following:

- Background reports and relevant maps of the region
- Relevant strategic documents
- Site investigation and photography
- Identification of existing physical features
- Identification of natural and cultural values
- Identification of the visual and landscape characteristics of the area
- Identification of the value or level of significance and sensitivity to change of the landscape character types.

Impact Assessment

The impact assessment was guided by the evaluation criteria established for the Project.

Four main tools were used to determine impacts, they were:

- Site Analysis;
- Landscape and Visual Impact Assessment Plan;
- Cross Sections; and
- 3D Photomontages.

A detailed description of the impact risk assessment methodology is included in Technical Appendix N.

17.4 Legislation and Policy

There are no national or State legislation or policies specifically relevant to visual and landscape impacts. However, environmental, heritage and planning legislation and government policies which are indirectly relevant to landscape and visual are outlined in Table 17-1.

Table 17-1 Relevant legislation and government policies

Legislation/Policy	Description
National	
Environment Protection and Biodiversity Act 1999	Under the EPBC Act, any work that could significantly impact threatened flora and fauna species and vegetation communities listed under the EPBC Act requires referral to and potentially, approval of the Minister for Sustainability, Environment, Water, Population and Communities
State	
Flora and Fauna Guarantee Act 1988	Under the *Flora and Fauna Guarantee Act 1988* rare, threatened and significant flora and fauna are protected, and require approval from the Department of Sustainability and Environment for removal.
National Parks Act 1975	*The National Parks Act 1975* provides for the preservation and protection of the natural environment and the protection and preservation of indigenous flora and fauna and of features of scenic or archaeological, ecological, geological, historic or other scientific interest within specified areas permanently reserved under the Act. The Langi Ghiran State Park is protected by this Act, and in particular relevance to this assessment, its features of scenic interest.
Heritage Act 1995	The Victorian *Heritage Act 1995* provides for the protection and conservation of places and objects of cultural heritage significance and the registration of such places and objects. Heritage Victoria maintains a list of State-significant heritage places and objects which are protected under the *Heritage Act 1995*. The Victorian Heritage Register is the highest level of protection and lists the non-Aboriginal heritage places/objects. The Victorian Heritage Inventory lists the archaeological sites in Victoria that are older than 50 years. The value of heritage places and objects can be related to the landscape and visual setting.
Aboriginal Heritage Act 2006	The *Aboriginal Heritage Act 2006* forms the framework within which Aboriginal heritage assessment is undertaken in Victoria. The Act provides for the protection and management of Victoria's Aboriginal heritage with processes linked to the Victorian planning system. Cultural Heritage Management Plans (CHMPs) and Cultural Heritage Permits are processes to manage activities that may harm Aboriginal cultural heritage.

Legislation/Policy	Description
National	
Planning and Environment Act 1987	The *Planning and Environment Act 1987* establishes a framework for planning the use, development and protection of land in Victoria. Under it, a Planning Permit is required to remove/disturb native vegetation within the study area. The Victorian Planning Policy Framework is developed under the *Planning and Environment Act 1987*. Items relevant to the landscape and visual assessment include: Clause 15: Environment ▪ Planning authorities should plan for regional open space networks to be used for recreation and conservation of natural and cultural environments. Planning and responsible authorities should ensure that open space networks are linked through the provision of walking and cycle trails and rights of way. ▪ Planning and responsible authorities should ensure that land use and development adjoining regional open space networks, national parks and conservation reserves complements the open space in terms of visual and noise impacts.
Native Vegetation Management Framework 2002	The Native Vegetation Management Framework 2002 is implemented under the *Planning and Environment Act 1987*. The removal of any remnant patches of native vegetation or scattered indigenous trees requires consideration of Victoria's Net Gain Policy, described within the Native Vegetation Management Framework.
Landscape and Visual Assessment Guidelines 2009	There are no relevant Government guidelines relating to landscape and visual assessment relevant to the scope of this project. The Landscape Assessment Guidelines, 2009 by Heritage Victoria provides an approach to visual assessment, but is specifically limited to determining and assessing the impacts upon sites of cultural heritage significance. None of the cultural heritage elements (identified by Heritage Overlays) value are related to their landscape setting or visually impacted upon by the Project However, there are generally utilised guidelines and processes that have become 'industry standard' and are used in the preparation of this landscape and visual assessment. These are: ▪ Landscape Character Types of Victoria, 1983 by Leonard M and Hammond R; and ▪ Guidelines for Landscape and Visual Impact Assessment, 2003 by the Landscape Institute and the Institute of Environmental Management and Assessment
Local	
Pyrenees Planning Scheme	The Local Planning Policy Framework contains a number of points relevant to the landscape and visual assessment. In summary, the policy identifies the following directions: ▪ The protection and management of the Shire's natural resources and environment; ▪ The retention of the established character and ethos of existing townships; and ▪ The protection of the cultural and heritage assets of the Shire. There are a number of overlays that are relevant to the landscape and visual assessment. A summary of each overlay is provided below Vegetation Protection Overlay VPO1 Roadside Grassland Protection and Conservation: ▪ The Vegetation Protection Overlay VPO1 seeks to protect significant vegetation for its natural beauty, special significance, interest and importance. ▪ The VPO identifies areas of vegetation that contributes to the scenic and visual quality of the study area. Heritage Overlay (HO): ▪ There is a Heritage Overlay within or in proximity to the study area - HO46 - Eurambeen East Old Homestead, Eurambeen. It is noted the value of this heritage element is not related to its landscape setting.
Ararat Planning Scheme	The Local Planning Policy Framework contains a number of points relevant to the landscape and visual assessment. In summary, the policy identifies the following directions: ▪ Mount Buangor State Park, Langi Ghiran State Park, Green Hill Lake, Hopkins River and Fiery Creek are important assets and features of natural beauty; and ▪ The rural and natural landscapes surrounding the Langi Ghiran State Park and the Mount Buangor State Park are important assets. There are a number of overlays that are relevant to the landscape and visual assessment. A summary of each overlay is provided below

Legislation/Policy	Description
National	
	Environmental Significance Overlay ESO2 Watercourses, Waterbody and Wetland Protection Areas: ▪ The Environmental Significance Overlay ESO2 seeks to maintain and enhance the environment, including scenic values and to maintain the integrity of the ecosystems. ▪ Within the study area this overlay includes both Green Hill Lake and Gorrin Creek. Heritage Overlay (HO): There are a number of Heritage Overlays within or in proximity to the study area. These include: ▪ HO 71 – The Hill, 122 Green Hill Drive, Ararat; ▪ HO 72 - Langi Logan Mine, Green Hill, Ararat; and ▪ HO 115 – Former Cobb and Co Staging Stables, Buangor. Vegetation Protection Overlay VPO2 Roadside Protection Vegetation Areas: ▪ The Vegetation Protection Overlay VPO2 seeks to protect areas of significant remnant roadside vegetation and wildlife habitat and acknowledges the contribution this vegetation provides to the quality of travel experience and visual quality. ▪ A number of roads, including the Western Highway within the study area are covered by this overlay.

17.5 Existing Conditions

17.5.1 Dwellings

Concentrations of occupied residences within the study area are important sensitive receptors to changes in visual and landscape character. These concentrations of dwellings occur:

- Between Beaufort and Box's Cutting, within a bushland and rural setting
- At Buangor, within a small township setting
- East of Ararat, within a rural setting.

17.5.2 Natural and Cultural Values

The main cultural and natural features within the study area are identified in other chapters throughout the EES, more specifically in Chapter 13 (Biodiversity and Habitat) and Chapter 14 (Cultural Heritage). However, key natural and cultural features within the region which have visual, aesthetic or landscape value are:

- Water bodies, including Green Hill Lake
- Langi Ghiran State Park, Mount Buangor State Park and the Mount Cole State Forest
- Woodnaggerak Flora and Fauna Reserve and Dobie Highway Park
- Mountain ranges/hills and ridgelines, including the north-south ridge line west of Beaufort (Box's Cutting), Mount Buangor, Mount Langi Ghiran and Challicum Hills
- Buangor Sports Oval and Ararat Racecourse
- Community facilities including, the Buangor Primary School and Buangor Community Centre (former Cobb and Co Staging Stables).

17.5.3 Scenic Views

Across the study area there a number of scenic views, including lookouts from Mount Buangor State Park, Langi Ghiran State Park and Ararat Regional Park. It is a standard principle of landscape and visual assessment that a higher significance is placed on public viewpoints rather than residential viewpoints. Examples of views from the existing Western Highway are illustrated in Figure 17-1 to Figure 17-4.

Figure 17-1 Views from Box's Cutting, looking towards the north-west

Figure 17-2 Views from Western Highway between Langi Ghiran State Park and Buangor, looking north-west towards the park

Figure 17-3 Views from Western Highway between Langi Ghiran State Park and Dobie, looking east towards the park

Figure 17-4 Views from the Western Highway from outside of Buangor, looking south towards the ridgeline which lies south of Langi Ghiran State Park

17.5.4 Landscape and Visual Character

Landscape character types have been defined for the study area to assist in determining the ability of the landscape to accommodate the proposed duplication of the Western Highway. The character types have been established through the integration of site observations and surveys, and analysis of information, including: geology and geomorphology, topography, land use patterns, existing vegetation and aerial photography.

There are eight distinctive landscape character types within the study area:

- Type 1 – Bushland
- Type 2 – Mountain Bushland
- Type 3 – Vegetated Rural
- Type 4 – Rural
- Type 5 – Vegetated Plantation
- Type 6 – Township Fringe
- Type 7 – Vegetated Highway
- Type 8 – Highway

Each character type is described below.

Type 1: Bushland

This is typical natural bushland character, comprising open eucalypt woodland or forest, as illustrated in Figure 17-5. Topography ranges from flat to gently undulating. It is highly valued for its perceived naturalness, and because it occurs relatively infrequently within the context of the general study area. This landscape character type is of high landscape value due to its high degree of perceived naturalness and low occurrence within the surrounding landscape context.

Figure 17-5 Landscape Character Type 1: Bushland

Type 2: Mountain Bushland

Similar to the Bushland character type, this comprises open eucalypt woodland or forest. The character type includes land within and is adjacent to the Langi Ghiran State Park and Mount Buangor State Park. It is also highly valued for its perceived naturalness, dramatic peaks, and because it occurs relatively infrequently within the context of the general study area. See Figure 17-6.

Figure 17-6 Landscape Type 2: Mountain Bushland

Type 3: Vegetated Rural

This landscape type is of typical rural land character, with open agricultural land and scattered rural infrastructure including dams and low scale rural sheds and dwellings. It comprises pasture grasses and crops with scattered mature indigenous trees, including densely vegetated pockets. Linear bands of canopy vegetation, both indigenous and exotic, often line property boundaries and road reserves. It is of medium to high landscape value due to the visual qualities of the following attributes:

- Distinctive remnant vegetation bands exist along roadsides, waterways and scattered within the agricultural land. These include large old trees (LOTs)
- Variations in the topography from flat to slightly undulating.

The typical form of this character type is illustrated in Figure 17-7.

Figure 17-7 Landscape Type 3: Vegetated Rural

Type 4: Rural

Similar to Type 3, but largely devoid of scattered canopy trees. Linear bands of canopy vegetation, both indigenous and exotic, line some property boundaries and road reserves, and strips of indigenous canopy and understorey vegetation occur along existing waterways. It is of medium landscape value due to expanses of similar vegetation patterns and regular occurrence within the surrounding landscape context. See Figure 17-8.

Figure 17-8 Landscape Character Type 4: Rural

Type 5: Vegetated Plantation

This landscape type is characterised by dense grid arrangements of eucalypt planted trees. The trees are of uniform height and species, and the topography is generally flat. It is of low landscape value due to the unnatural arrangement of tree planting and uniformity in height. The typical form of this character type is illustrated in Figure 17-9.

Figure 17-9 Landscape Character Type 5: Vegetated Plantation

Type 6: Township Fringe

This type is a transition zone between rural land and town centre, containing an increase in density of low scale residential and industrial buildings. It exhibits linear bands of indigenous and exotic canopy vegetation, following property boundaries and road reserves. The topography is generally gently undulating across the character type. It has a high landscape value for distinctive remnant vegetation bands and its gradual transition between farmland and rural settlement; refer to Figure 17-10.

Figure 17-10 Landscape Character Type 6: Township Fringe

Type 7: Vegetated Highway

This type comprises the existing highway with native tree and shrub vegetation within the road reserve. It is of moderate landscape value due to vegetation along the highway, providing filtered views to the surrounding landscape, see Figure 17-11.

Figure 17-11 Landscape Character Type 7: Vegetated Highway

Type 8: Highway

This landscape type encompasses the existing highway alignment without roadside vegetation. It is considered to be of low landscape value due to the visual qualities attributing to only the road carriageway. The typical form of this character type is illustrated in Figure 17-12.

Figure 17-12 Landscape Character Type 8: Highway

17.5.5 Landscape Sensitivity

Landscape sensitivity provides an indication of the ability for a landscape to absorb change without dramatically altering its character. The landscape sensitivity categories are:

- High - cannot absorb any physical change;
- Medium - can absorb change with sensitive mitigation; or
- Low - can absorb change

Table 17-2 summarises the sensitivity of the identified landscape character types to change.

Table 17-2 Landscape Character Type sensitivity

Type	Landscape Character	Sensitivity	Reason
1	Bushland	High	Any development to occur within the character type would result in significant visual change due to the loss of bushland vegetation and perceived sense of naturalness.
2	Mountain Bushland	High	Any development to occur within the character type would result in significant visual change due to the loss of bushland vegetation and perceived sense of naturalness.
3	Vegetated Rural	Medium to High	Large scale development would result in the loss of some vegetation, but may retain the sense of open agricultural plains.
4	Rural	Medium	Any development would result in the loss of some vegetation, but may retain the sense of open agricultural plains
5	Vegetated Plantation	Low	Development would result in the loss of vegetation; however clearance is a consistent and expected occurrence in a plantation.
6	Township Fringe	Medium	Any development to occur within the landscape type may visually affect local residents who are sensitive to landscape change.
7	Vegetated Highway	Low	Any road development to occur within the landscape type may impact the character through the removal of native vegetation.
8	Highway	Very Low	Any road development to occur within the landscape type would not detrimentally impact upon the character of the area.

17.6 Impact Assessment

17.6.1 Key Issues

Key issues identified from the visual and landscape assessment associated with the two alignment options are:

- Visual change from the outlook of the Buangor Primary School and Buangor approaches
- The proposed Eurambeen-Raglan Road / Eurambeen-Streatham Road overpass in Eurambeen
- Diversion alignments of the options adjacent to the Langi Ghiran State Park, with extensive cut and fill and overpasses impacting upon the existing landscape character.

The Visual and Landscape Impact Assessment has been divided into seven separate areas to assess the impact on dwellings, the affected landscape character type, identified in Section 17.5.4, and the impact on townships and places of natural and cultural value. Refer to Technical Appendix N for an outline of the seven areas discussed below.

The impact assessment uses three different attributes to evaluate the likely visual impact and level of change:

- The type of duplication being constructed, i.e. duplication along existing Western Highway, overpass or bridge or new highway alignment.
- A qualitative judgement based on the extent of visual change, i.e. cut and fill, distance from construction footprint, overpass proximity and scale, retained vegetation, vegetation to be removed and topography.
- The quantity of dwellings likely to be affected.

Please refer to Section 7 of Technical Appendix N for cross section figures of the alignment options and aerial perspectives of the proposed overpasses for the Project.

Area 1: West Beaufort

This area includes a north-south range of hills with dense bushland vegetation, plantations and rural land with scattered vegetation. Both Option 1 and Option 2 share the same alignment through this area. Table 17-3 shows the impact assessment summary of Area 1. It is anticipated that six dwellings would have direct views towards the duplication.

Table 17-3 Area 1 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Dwellings	6	Low	Minor	Insignificant
Landscape Character – Vegetated Rural	n/a	Medium - high	Minor	Insignificant
Landscape Character – Vegetated Highway	n/a	Low	Major	Minor

Area 2: Eurambeen

This area is characterised by a large, flat area of rural land with views of the surrounding mountain ranges, including Mount Buangor and Mount Langi Ghiran. Both options share the same alignment through this area, which includes the Eurambeen-Raglan Road/Eurambeen-Streatham Road overpass. The horizontal scale, batters and height of the overpass would result in a road infrastructure element in stark contrast to the flat rural landscape character. In addition, the duplication would require removal of some roadside vegetation.

One existing dwelling has partial views of the overpass. The existing eastern view from the front of the dwelling is of open rural landscape. However, the Project would result in a minor level of visual change because the overpass and associated road infrastructure is recessive within the view and does not interrupt the dominant horizontal backdrop of the hills behind. See Figure 17-13 and Figure 17-4 for the existing view and photomontage with the proposed duplication.

Table 17-4 shows the impact assessment summary for Area 2.

Table 17-4 Area 2 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Dwellings	1	Low	Minor	Insignificant
Landscape Character – Rural	n/a	Medium	Major	Moderate
Landscape Character – Vegetated Highway	n/a	Low	Major	Minor

Figure 17-13 Existing view looking east from dwelling

Figure 17-14 Photomontage with the highway duplication looking east from dwelling

Area 3: Middle Creek

This area is characterised by flat, vegetated rural land pockets of dwellings along the existing Western Highway. Both options share the same alignment through this area, which includes the upgrade of Goulds Lane and Ferntree Gully Road to an overpass. Between Ch. 10000 to 12800 existing roadside vegetation would be removed, resulting in a major change to the character of the road corridor. Table 17-5 shows the impact assessment summary for Area 3.

Table 17-5 Area 3 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Dwellings	9	Low	Moderate	Insignificant
Landscape Character – Vegetated Rural	n/a	Medium to High	Moderate	Minor
Landscape Character – Vegetated Highway (Ch.10,000-12,800)	n/a	Low	Major	Minor
Landscape Character – Vegetated Highway (Ch.12,800-15,600)	n/a	Low	Minor	Insignificant

Area 4: Buangor

This area includes the town of Buangor. The Buangor town centre is a place of cultural value, characterised by its surrounding vegetation, community facilities, heritage listed former Cobb and Co Staging stable building and distant views to Mount Buangor and Mount Cole. The value of Buangor is related to these attributes and visual change may result in a dramatic impact upon them. An existing view from the Buangor Sports Oval was selected for investigation, as it provides clear views out to the location of the new road alignment and intersection at Peacocks Road, and is within the town centre; see Figure 17-15 and Figure 17-16. Views from closer to the intersection of Western Highway and Main Street do not have an outlook to either alignment option.

Figure 17-15 Existing view looking north from Buangor Sports Oval

Figure 17-16 Photomontage with the highway duplication looking north from Buangor Sports Oval

Option 1 and Option 2 have different alignments that bypass Buangor in this area. See Figure 17-17 and Figure 17-18 for an aerial perspective of the proposed Peacocks Road overpass for Option 1 and Option 2**.**

Table 17-6 shows the impact assessment summary for Area 4.

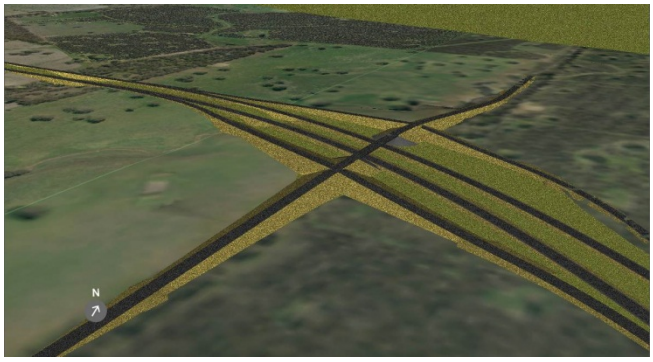

Figure 17-17 Option 1 Model of Peacocks Road Overpass

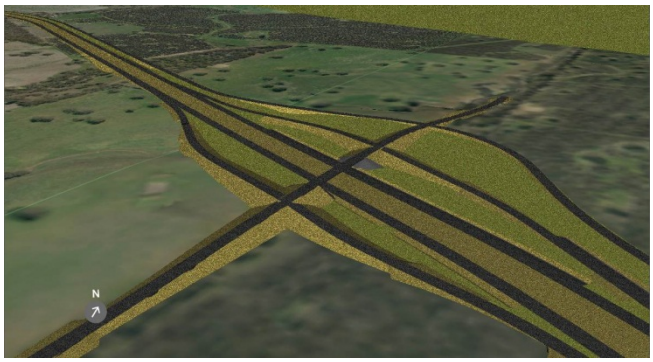

Figure 17-18 Option 2 Model of Peacocks Road Overpass

Table 17-6 Area 4 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Option 1				
Dwellings	9	High	Moderate	Minor
Buangor town centre	n/a	High	Insignificant	Insignificant
Buangor Primary School	n/a	High	Moderate	Moderate
Mt Buangor State Park & Mt Cole State Forest	n/a	High	Insignificant	Insignificant
Landscape Character – Bushland	n/a	High	Insignificant	Insignificant
Landscape Character – Vegetated Rural	n/a	Medium to high	Major	Moderate
Landscape Character – Vegetated Highway	n/a	Low	Minor	Insignificant
Option 2				
Dwellings	7	High	Moderate	Minor
Buangor town centre	n/a	High	Insignificant	Insignificant
Buangor Primary School	n/a	High	Moderate	Moderate
Mt Buangor State Park & Mt Cole State Forest	n/a	High	Insignificant	Insignificant
Landscape Character - Bushland	n/a	High	Insignificant	Insignificant
Landscape Character – Vegetated Rural	n/a	Medium to high	Major	Moderate
Landscape Character – Vegetated Highway	n/a	Low	Minor	Insignificant

Area 5: Langi Ghiran

This area includes both Mount Gorrin and Langi Ghiran State Park, which is a dominant natural visual element. This area comprises the proposed Hillside Road and Langi Ghiran Picnic Road overpasses. The Langi Ghiran State Park includes two scenic lookouts. Figure 17-19 and Figure 17-20 shows a digital visualisation of the view from the Langi Ghiran State Park eastern lookout towards the existing Western Highway and Buangor with alignments options 1 and 2 respectively. Considering both options are difficult to discern from the surrounding visual context, it can be anticipated that it would be more difficult to identify from this scenic viewpoint/lookout with the inclusion of screening vegetation. Option 1 and Option 2 share slightly different alignments in this area. However, the landscape impacts are generally similar. Table 17-7 shows the impact assessment summary for Area 5.

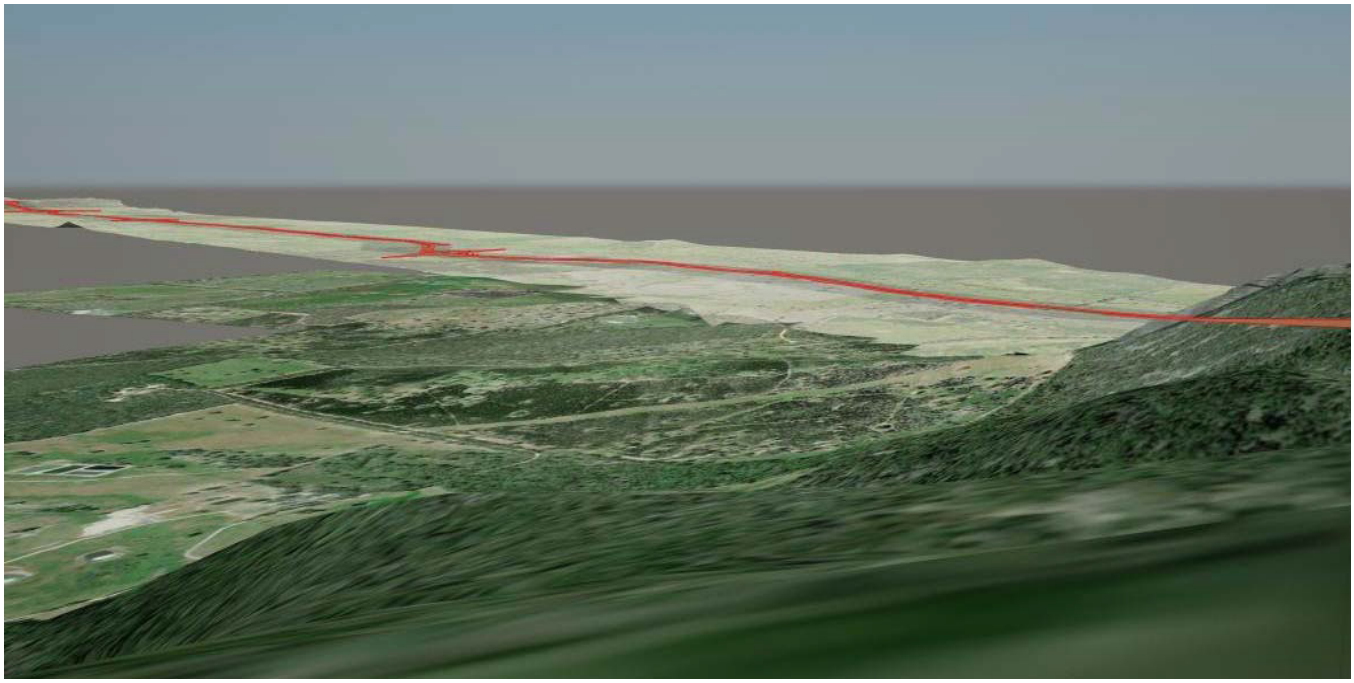

Figure 17-19 Indicative digital visualisation of the view from Langi Ghiran State Park Eastern Lookout towards Option 1

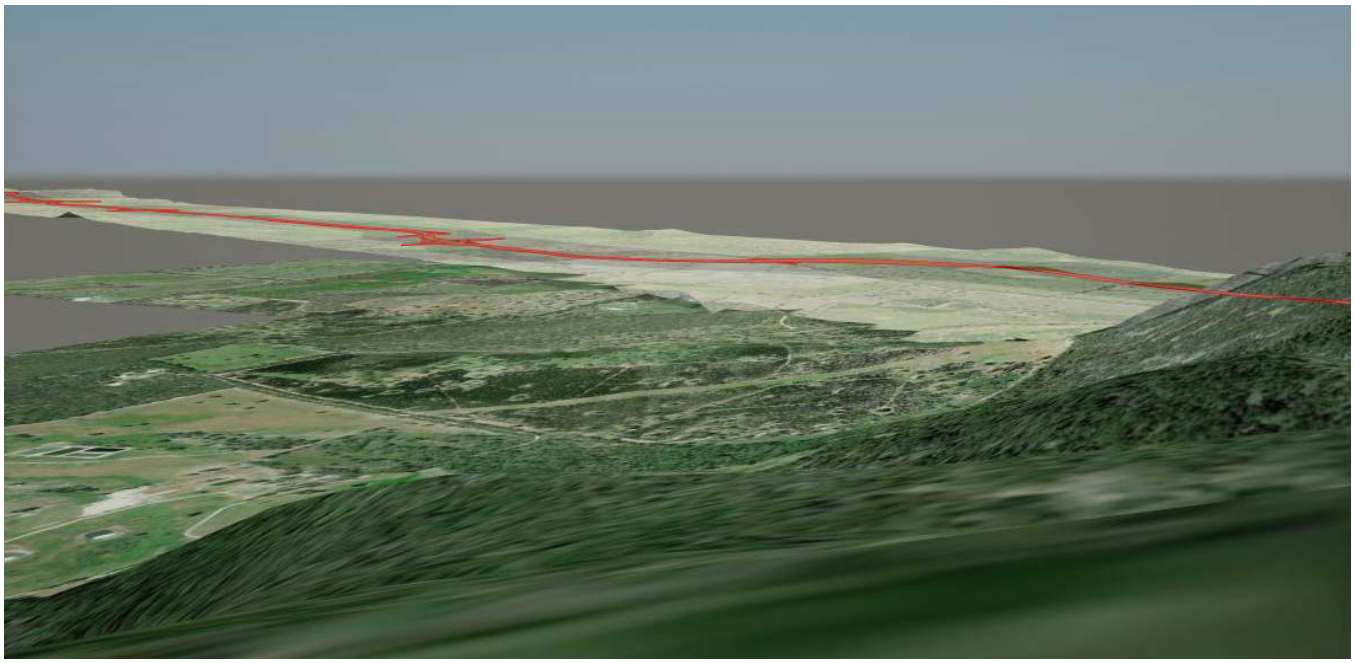

Figure 17-20 Indicative digital visualisation of the view from Langi Ghiran State Park Eastern Lookout towards Option 2

Table 17-7 Area 5 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Option 1				
Dwellings	1	Low	Moderate	Insignificant
Langi Ghiran State Park	n/a	High	Insignificant	Insignificant
Langi Ghiran State Park Eastern Lookout	n/a	High	Insignificant	Insignificant
Landscape Character - Bushland	n/a	High	Insignificant	Insignificant
Landscape Character – Vegetated Rural	n/a	Medium to high	Major	Moderate
Landscape Character – Vegetated Highway	n/a	Low	Minor	Insignificant
Option 2				
Dwellings	0	n/a	n/a	n/a
Langi Ghiran State Park	n/a	High	Insignificant	Insignificant
Langi Ghiran State Park Eastern Lookout	n/a	High	Insignificant	Insignificant
Landscape Character – Vegetated Rural	n/a	Medium to high	Major	Moderate
Landscape Character – Vegetated Highway	n/a	Low	Minor	Insignificant

Area 6: Dobie

This area is predominantly vegetated rural with both cleared farmland and vegetated plantations and includes construction of the proposed new bridge across the Hopkins River. Both Option 1 and Option 2 share the same alignment in this locality. Table 17-8 shows the impact assessment for Area 6.

Table 17-8 Area 6 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Landscape Character – Vegetated Highway	n/a	Low	Minor	Insignificant

Area 7: East Ararat

This area is predominantly open rural land and comprises Green Hill Lake and Green Hill. Both options share the same alignment through this area. The valued scenic qualities of Green Hill Lake and extensive views would not be impacted by the duplication. Table 17-9 shows the impact assessment for Area 7.

Table 17-9 Area 7 – Impact Assessment Summary

Item	No. Affected	Sensitivity	Level of Change	Impact Assessment
Dwellings	4	Low	Minor	Insignificant
Green Hill Lake	n/a	High	Insignificant	Insignificant
Landscape Character – Vegetated Highway	n/a	Low	Major	Minor

17.7 Risk Assessment

An environmental risk assessment was undertaken on the Project options to identify key environmental issues associated with the construction and operation of the Project. The methodology for this risk assessment has been described in Section 5.2 of Technical Appendix N. A risk assessment report that explains the process in detail and contains the complete project risk register has also been included as Technical Appendix Q.

Table 17-10 shows a summary for landscape and visual of:

- The impact pathways identified

- A description of the consequence.

Table 17-10 Visual and Landscape Risks

Risk No.	Impact Pathway	Consequence Description
LV1A	Construction and operation of the duplication along the existing Western Highway alignment would visually impact upon adjacent dwellings. (Ch. 400-1800, 8700, 10500-10900, 12400-12800, 14600-15400 and 38400-38000).	Approximately 18 dwellings would be located adjacent to the duplication and would receive a moderate or minor visual change upon their views.
LV1B	Construction and operation of the duplication along a new alignment would visually impact upon adjacent dwellings. (Ch. 900 and 2600).	Approximately two dwellings would be located adjacent to the duplication and receive a major visual change upon their views.
LV1C	Construction and operation of a new overpass along the existing Western Highway alignment would visually impact upon an adjacent dwelling. (Ch. 4400-5600).	Approximately one dwelling would be located adjacent to the Eurambeen-Raglan and Eurambeen-Streatham Duplication Roads overpass and receives a minor visual change upon their views.
LV1D	Construction and operation of a new overpass along the existing Western Highway alignment would visually impact upon an adjacent dwelling. (Ch. 17400-21000).	Option 1. Approximately nine dwellings would be located adjacent to the Buangor Bypass, including the Peacock Road overpass (Ch. 17400-17600) and would receive a major visual change upon their views. Option 2 Approximately seven dwellings would be located adjacent to the Buangor Bypass, including the Peacock Road overpass (Ch. 17400-17600) and Western Highway and rail line overpass (Ch. 20000-21000) and would receive a major visual change upon their views.
LV1E	Construction and operation of the duplication along a new alignment would visually impact upon adjacent dwellings. (Ch. 24200).	Option 1. One dwelling along Hillside Road would be located adjacent to the duplication and would receive a major visual change upon their views.
LV2A	Construction and operation of the duplication would visually impact upon the Buangor Town Centre (Ch. 18300).	The duplication would be visible from the Buangor Town Centre.
LV2B	Construction and operation of the duplication would visually impact upon the Buangor Primary School (Ch. 18100).	The duplication would be visible from the Buangor Primary School, including the Peacock Road overpass and receive a moderate visual change.
LV2C	Construction and operation of the duplication would visually impact upon the approaches to the Buangor Town Centre (Ch. 15800-20800).	Option 1. The duplication would be visible from the eastern and western approaches and departure from the Buangor Town Centre, including the Peacock Road overpass (Ch. 17400-17600) and would receive a moderate visual change. Option 2. The duplication would be visible from the eastern and western approaches and departure from the Buangor Town Centre, including the Peacock Road overpass (Ch. 17400-17600) and Western Highway and railway line overpass (Ch. 20000-21000) and would receive a moderate visual change.
LV2D	Construction and operation of the duplication would visually impact upon Mount Buangor State Park and Mount Cole State Forest.	The duplication may be visible from the Mount Buangor State Park and Mount Cole State Forest and receive an insignificant visual change.
LV2E	Construction and operation of the duplication would visually impact upon the Langi Ghiran State Park (Ch. 22600-29400).	The duplication may be visible from the Langhi Ghiran State Park and receive an insignificant visual change.
LV2F	Construction and operation of the duplication would visually impact upon Green Hill Lake (Ch. 37000-38400).	The duplication would be visible from Green Hill Lake and receive an insignificant visual change.
LV2G	Construction and operation of the duplication would visually impact upon the Ararat Regional Park Lookout.	The duplication would be barely discernible from the Ararat Regional Park Lookout and receive an insignificant visual change.
LV3A	Construction and operation of the duplication would visually impact upon landscape character types of high landscape sensitivity (Ch. 18100-18300).	The duplication would result in an insignificant change upon the Bushland landscape character type through the removal of existing tree vegetation.

Risk No.	Impact Pathway	Consequence Description
LV3B	Construction and operation of the duplication would visually impact upon landscape character types of high landscape sensitivity (Ch. 27200-27600).	The duplication would result in an insignificant change upon the Bushland landscape character type through the removal of existing tree vegetation.
LV3C	Construction and operation of the duplication would visually impact upon landscape character types of medium-high landscape sensitivity. Option 1 (Ch. 1200-3600, 17400-18100, 18300-20600 and 22800-28600). Option 2 (Ch. 1200-3600, 17400-18100 and 18700-20500 and 22500-25200).	The duplication would result in a major change upon the Vegetated Rural landscape character type through the construction of the duplication, overpasses and removal of existing tree vegetation.
LV3D	Construction and operation of the duplication would visually impact upon landscape character types of medium landscape sensitivity. (Ch. 4200-5400).	The duplication overpass at Eurambeen-Raglan Road and Eurambeen-Streatham Road would result in a major change upon the Rural landscape character type through the construction of the duplication, overpasses and removal of existing tree vegetation.
LV3E	Construction and operation of the duplication would visually impact upon landscape character types of medium to high landscape sensitivity. (Ch. 9700).	The duplication overpass at Goulds Lane and Ferntree Gully Road would result in a moderate change upon the Rural landscape character type through the construction of the duplication, overpasses and removal of existing tree vegetation.
LV3F	Construction and operation of the duplication would visually impact upon landscape character types of medium to high landscape sensitivity. (Ch. 1400-2700).	The duplication would result in a minor change upon the Vegetated Rural landscape character type through the construction of road infrastructure and removal of existing vegetation.
LV3G	Construction and operation of the duplication would visually impact upon landscape character types of low landscape sensitivity. Option 1 (Ch. 847-1200, 3200-4500, 10000-12800 and 39100-39600). Option 2 (Ch. 847-1200, 3200-4500, 10000-12800 and 39100-39600).	The duplication would result in a major change upon the Vegetated Highway character type through the removal of existing tree vegetation and widening of the road corridor.
LV3H	Construction and operation of the duplication will visually impact upon landscape character types of low landscape sensitivity. Option 1 (Ch. 12800-16200, 21000-28000, 28400-31000 and 33900-34200) Option 2 (Ch. 12800-16200, 25200-30000 and 33900-34200)	The duplication will result in a minor change upon the Vegetated Highway character type through the removal of existing tree vegetation and widening of the road corridor.

17.8 Environmental Management Measures

VicRoads has a standard set of environmental management measures which are typically incorporated into construction contracts for road works and bridge works. These measures have been used as the starting point for the assessment of construction related risks and described in detail in Chapter 21 (Environmental Management Framework). In some instances, additional Project specific environmental management measures have been recommended to reduce risks.

Management measures specific to each identified landscape and visual risk, and the residual risk rating after these environmental management measures have been applied, are outlined in Table 17-11.

17.8.1 Residual Risks

Following implementation of the recommended mitigation measures there are not expected to be

any significant impacts. The overall risk to visual and landscape is low.

Table 17-11 Visual and Landscape Environmental Management Measures and Residual Risk

Risk No.	Environmental Management Measures	Residual Risk
LV1A	Provide planting in duplication Right of Way (ROW). Retention of existing roadside vegetation where possible (protective fencing treatments may be required). Establishment of tree and shrub planting of similar character to existing roadside vegetation in close proximity to the road edge (protective fencing treatments may be required). Establishment of clusters of screening vegetation in line with the surrounding character, including trees at the toe of the embankment shrubs upon the fill embankments. Use of grasses upon fill embankments consistent with surrounding rural land. Landscape designed fill embankments. Establishment of a new tree avenue gateway to Ararat (to be developed in conjunction with Ararat Rural City Council).	Negligible
LV1B	Provide planting in ROW. Establishment of screening vegetation against eastern views for the affected dwelling. Use of grasses upon fill embankments consistent with surrounding rural land. Landscape designed fill embankments.	Medium
LV1C	As per Risk LV1B.	Low
LV1D	Provide planting in ROW. Establishment of tree and shrub screening planting to effectively screen the duplication and maintain a vegetated edge to the township. Vegetation would be established in clumps and not in linear banding that contrasts with the existing landscape character. Tree planting along the base and shrub planting along embankments to screen the overpass. Possible screen planting within private properties along the interface of the overpass. Sensitive design of embankments to be complimentary to the surrounding topography.	Low
LV1E	Provide planting in ROW. Establishment of screening vegetation within private properties. Landscape designed fill embankments.	Low
LV2A	Provide planting in ROW.	Negligible
LV2B	Provide planting in ROW. Establishment of tree and shrub screening planting to effectively screen the duplication and maintain a vegetated edge to the township. Vegetation would be established in clumps and not in linear banding that contrasts with the existing landscape character. Tree planting along the base and shrub planting along embankments to screen the overpass. Sensitive design of embankments to be complimentary to the surrounding topography. Use of grasses upon fill embankments consistent with surrounding rural land. Landscape designed fill embankments	Medium
LV2C	Provide planting in ROW. Establishment of tree and shrub screening planting to effectively screen the duplication and maintain a vegetated edge to the township. Vegetation would be established in clumps and not in linear banding that contrasts with the existing landscape character; Tree planting along the base and shrub planting along embankments to screen the overpass; Sensitive design of embankments to be complimentary to the surrounding topography.	Low
LV2D	Provide planting in ROW.	Negligible
LV2E	Provide planting in ROW.	Negligible
LV2F	Provide planting in ROW.	Negligible
LV2G	Provide planting in ROW.	Negligible

Risk No.	Environmental Management Measures	Residual Risk
LV3A	Provide planting in ROW.	Low
LV3B	Provide planting in ROW.	Low
LV3C	Provide planting in ROW. Establishment of clusters of screening vegetation in line with the surrounding character, including trees at the toe of the embankment and shrubs upon the fill embankments. Use of grasses upon fill embankments consistent with surrounding rural land. Landscape designed fill embankments.	Medium
LV3D	As per Risk LV3C	Medium
LV3E	As per Risk LV3C	Low
LV3F	Provide planting in ROW.	Low
LV3G	Provide planting in ROW. Retention of existing roadside vegetation where possible (protective fencing treatments may be required). Establishment of tree and shrub planting of similar character to existing roadside vegetation in close proximity to the road edge (protective fencing treatments may be required). Establishment of a new tree avenue gateway to Ararat (to be developed in conjunction with Ararat Rural City Council).	Low
LV3H	Provide planting in ROW.	Low

17.9 Conclusion

The majority of both of the alignment options utilise the existing Western Highway carriageway. The dwellings located along the highway have an existing view upon the highway or potential for such a view. Therefore, 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 these dwellings is considered higher. However, with mitigation measures, such as sensitive design and screening vegetation, these impacts would be reduced.

Whilst the alignment does not generally impact upon areas of natural and cultural values, particularly the town centre of Buangor and Langi Ghiran State Park, there would be potential visual impacts upon Buangor Primary School. Option 1 and Option 2 result in a similar moderate visual impact upon the Primary School, which can be reduced through appropriate mitigation.

The majority of both alignments are 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 change and the project would not significantly diminish the landscape character of these areas. Those impacts occurring upon the Vegetated Highway landscape character can be mitigated through the retention of existing roadside vegetation wherever possible.

The key area where landscape character is impacted is around the 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 additional visual impact.

Due to this difference, Option 2 is preferred over Option 1 from a visual and landscape perspective.