regional roads victoria

15 Landscape and visual amenity

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Tables

Figures

15.1 Overview

This chapter provides an assessment of the landscape and visual impacts associated with the construction and operation of the project. It has been informed by EES Appendix F: *Landscape and visual impact assessment*.

The landscape and visual impact assessment evaluated the potential for visual effects of the project based on numerous factors including sites with cultural, community or natural value, rural open spaces, and proximity to dwellings and the Beaufort township. The understanding of the magnitude of effects was influenced by factors such as distance to dwellings, scale of physical impact, amount of vegetation to be removed and topography. These factors have the potential to impact the landscape character and visual amenity of the area. The impact assessment process informed the proposed mitigation measures and identified potential residual impacts of the project construction and operation following the implementation of mitigation measures.

15.2 EES objectives

The evaluation objective set in the scoping requirements relevant to the landscape and visual values assessment is:

> ***Landscape and visual:*** *To minimise adverse effects on visual and landscape values as far as practicable, during construction and operation.*

To breakdown the above EES objective, the following sub-objectives were determined and taken into account for the assessment:

- **Sub-objective 1**: To minimise impact upon existing landscape character
- **Sub-objective 2**: To minimise impact upon locally sensitive places
- **Sub-objective 3**: To minimise impact upon key views and viewsheds
- **Sub-objective 4**: To minimise the impact upon residential dwellings adjacent to the project.

This chapter discusses the key issues identified in the scoping requirements as relevant to landscape and visual and outlined in Table 15.1 below.

Table 15.1 EES key issues – Landscape and visual

Key issues
The potential for adverse effects on landscape and visual values, particularly the sensitive landscape areas of local or regional significance including; Camp Hill State Forest, Snowgums Bushland Reserve, Beaufort Trotting Track, Beaufort Main Lead Common and Beaufort Motorcycle Track, and waterway crossings including culturally significant watercourses in the landscape.
Consider the adverse effects on landscape and visual values associated with potential impacts to 'treed roadsides' and in general, the impacts associated with loss of trees and other vegetation.
Consideration of the interaction of the proposed alignment alternatives with view sheds to the wider landscape and significant landscapes in the area.

Specific aspects to be addressed were also detailed in the scoping requirements. These are detailed in Table 15.2 below.

Table 15.2 EES requirements – Landscape and visual

EES requirements
Priorities for characterising the existing environment
Identify landscape character types and values and their sensitivity to change for each relevant alignment alternative, including the preparation of a photomontage to scale for each alignment alternative.
View sheds to the areas of works for relevant alignment alternatives from Beaufort and other settlements.
Design and mitigation measures
Identify potential and proposed design alternatives and measures to protect landscape values which could be affected by relevant alignment alternatives. Provide design solutions to enhance the visual amenity of the immediate environs of each alignment alternative.
Assessment of likely effects
Assess the likely effects of relevant alignment alternative on landscape and visual amenity values including impacts from vegetation removal and any loss of landscape connectivity.
Assess the likely effects of relevant alignment alternatives on landscape and visual amenity values to the sensitive landscape areas of local or regional significance.
Approach to manage performance
Identify proposed principles for managing residual effects on landscape and visual amenity, including enhancement of the visual amenity for residents and farmers living in the vicinity of the project as part of the Environmental Management Framework.

15.3 Legislation and policy

The relevant legislation and government policies related to landscape and visual values are outlined in Table 15.3.

Table 15.3 Relevant legislation and government policies

Legislation/ policy	Description		Relevance to project
State			
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 the *Planning and Environment Act 1987*, a Planning Permit is required to remove/disturb native vegetation and for other specified purposes within the study area. Planning schemes are prepared, approved and implemented under the *Planning and Environment Act 1987*. These are statutory documents that set out objectives, policies and provisions relating to the use, development, protection and conservation of land in the area to which it applies.		The Pyrenees Planning Scheme applies to the project.
	Planning Policy Framework	The Planning Policy Framework comprises planning policies that apply to all land in Victoria and are to be taken into account in the assessment of applications for the use and development of land. Clauses of the Pyrenees Planning Scheme relevant to landscape and visual values of the project include: • 11.03–5S Distinctive areas and landscapes • 12.03–1s River corridors, waterways, lakes and wetlands • 12.05–2S Landscapes • 15.01–6S Design for rural areas.	*11.03-5S* provides guidance to protect and enhance the valued attributes of identified distinctive areas and landscapes. *12.03-1S* aims to protect and enhance river corridors, waterways, lakes and wetlands. *12.05-2S* provides guidance to protect landscapes and significant open spaces that contribute to character, identity and sustainable environments. *15.01-1S* focuses on the provision of environments that are safe and functional and which reinforce sense of place and cultural identity. *15.01-5S* provides guidance to recognise, support and protect neighbourhood character, cultural identity and sense of place. *15.01-6S* ensures developments in rural areas protect and enhance rural character.

Legislation/ policy	Description		Relevance to project
	Planning zones	Planning zones heavily influence land use and can affect land parcel sizes, which have an impact on landscape character. Planning zones have been referenced later in this chapter when identifying key landscape characters, and landscape character sensitivities.	The zones applicable to the project include: • Rural Living Zone • Low Density Residential Zone • Public Use Zone Schedule 1 – Service and Utility • Public Use Zone Schedule 4 – Transport • Public Use Zone Schedule 7 – Other Public Use • Farming Zone • Road Zone – Category 1 • Rural Conservation Zone • Public Conservation and Resource Zone.
	Planning overlays	**Bushfire Management Overlay** The Bushfire Management Overlay identifies bushfire prone areas and seeks to ensure the implementation of bushfire protection measures.	This overlay is present across a large extent of the study area.
		Vegetation Protection Overlay The Vegetation Protection Overlay seeks to protect significant vegetation for its natural beauty, special significance, interest and importance. The Vegetation Protection Overlay identifies areas of vegetation that contributes to the scenic and visual quality of the area.	This overlay covers an area along the Melbourne-Ararat rail line that is inside the study area to the east of the Beaufort township.
	In 2013, the South West Victoria Landscape Assessment Study was undertaken for the then Department of Planning and Community Development. The South West Victoria Landscape Assessment Study provides a comprehensive understanding of landscape values, their location and their spatial extent. This was prepared to assist regional planning to support economic growth and development investment in the right locations into the future through the Great South Coast, Central Highlands, and Loddon Mallee South Regional Growth Plans.		No landscapes of State significance were identified in the study area.

Legislation/ policy	Description	Relevance to project
Urban Design Guidelines for Victoria, August 2017	The Urban Design Guidelines for Victoria are policy guidelines within the Planning Policy Framework of the Victoria Planning Provisions.	Relevant guidelines include those relating to: • locating major infrastructure corridors and installations to minimise their potential to be a barrier to cross movement • providing conveniently located grade-separated pedestrian and bicycle crossings across rail corridors, motorways and other natural barriers to connect neighbourhoods and key destinations • establishing a continuous system of pedestrian paths connecting neighbourhoods, along all streets, continuing through public spaces, and to activity centres and public transport nodes.
Aboriginal Heritage Act 2006	The *Aboriginal Heritage Act 2006* provides for the protection and management of Victoria's Aboriginal cultural heritage.	While a separate assessment of Aboriginal cultural heritage impact has been completed for this EES (see EES Appendix A: *Aboriginal cultural heritage impact assessment*), it is important to highlight where key publicly known registered Aboriginal cultural heritage places are located within the study area, as these are of direct relevance to cultural value.

15.4 Methodology

The landscape and visual assessment identifies landscape character areas and their associated values. The assessment also identifies the main sites of visual sensitivity, and assesses the impacts of the project on these areas and sites.

15.4.1 Existing conditions

The description of landscape and visual existing conditions within the study area included:

- a review of relevant strategic documents
- a review of maps and reports prepared by various consultants that identify values important to the assessment
- site investigation and photography from public land
- identification of existing physical features
- identification of natural and cultural values
- identification of the landscape character areas
- identification of key views and places of public significance and value.

The following landscape assessment criteria were identified in the existing conditions assessment. Further detail on the assessment methodology for the landscape assessment criteria is provided in EES Appendix F: *Landscape and visual impact assessment*.

Landscape character type

The landscape character provides a picture or sense of the landscape and is defined by the area of visually distinct common features. Landscape characters are identified through a combination of multiple elements including geomorphology, waterways, vegetation, land uses, visual and sensory aspects, and the experience to and from key spaces. Through defining landscape character types, the value of the landscape can be identified to help determine the capacity for the landscape to accommodate the project.

Landscape character value

Landscape character value provides an indication of whether the landscape, or elements within the landscape, is of significance to the local or wider community, residents and other parties. The values assigned to the landscape character areas depend in part on their prominence as well as on the extent to which they are present within the landscape context.

A landscape may have value in terms of its usability and usefulness to society, ecological and hydrological importance and functionality, social and wellbeing benefits, and economic worth. Different layers contribute to making an accurate characterisation of landscape and its associated value.

Level of sensitivity and ability to absorb change

Landscape sensitivity provides an indication of the landscape's ability to absorb change without dramatically altering its character. This is typically dependent on the anticipated level of physical and visual impact (magnitude of change) the development proposal has on the existing qualities of the landscape character area.

Magnitude of change

The magnitude of change to the landscape depends on the scale and duration of the proposed change. Roads at grade, roads that are elevated and overpasses all affect the surrounding landscapes and views in different ways and magnitudes. Typically, the taller the change, the more visible it may be to surrounding areas.

The landscape and visual assessment identifies the level of change to the landscape in terms of loss or addition of existing landscape features or elements being impacted (e.g. vegetation), as well as the size, scale and mass. For example, changes to the area of the existing landscape character or large changes in topography may impact key functions of the character of the landscape. Moderate changes to topography are considered to be approximately 2.5 m of either cut or fill, while significant changes are considered to be more than 5 m of either cut or fill.

15.4.2 Impact assessment

The purpose of the landscape and visual impact assessment was to undertake an evaluation of the anticipated landscape and visual impacts for the project, based on a series of evaluation criteria. The assessment was informed by:

- 3D modelling of the project alignment on 3D topography
- photomontages of the project from key viewpoints
- cross sections
- viewshed analysis.

Segments assessment

The assessment of potential landscape and visual impacts was undertaken by segments, the following of which apply to the preferred project alignment, C2:

- Western Highway, eastern entrance and exit (Segment 1)
- Western Highway to Beaufort-Lexton Road through eastern valley (Segment 3)
- Racecourse Road to Beaufort-Lexton Road (Segment 4)
- Camp Hill to Martins Lane (Segment 6)
- Western Highway, proposed western entrance and exit (Segment 9).

Figure 15.1 shows the segments that were used in the landscape and visual impact assessment for the project.

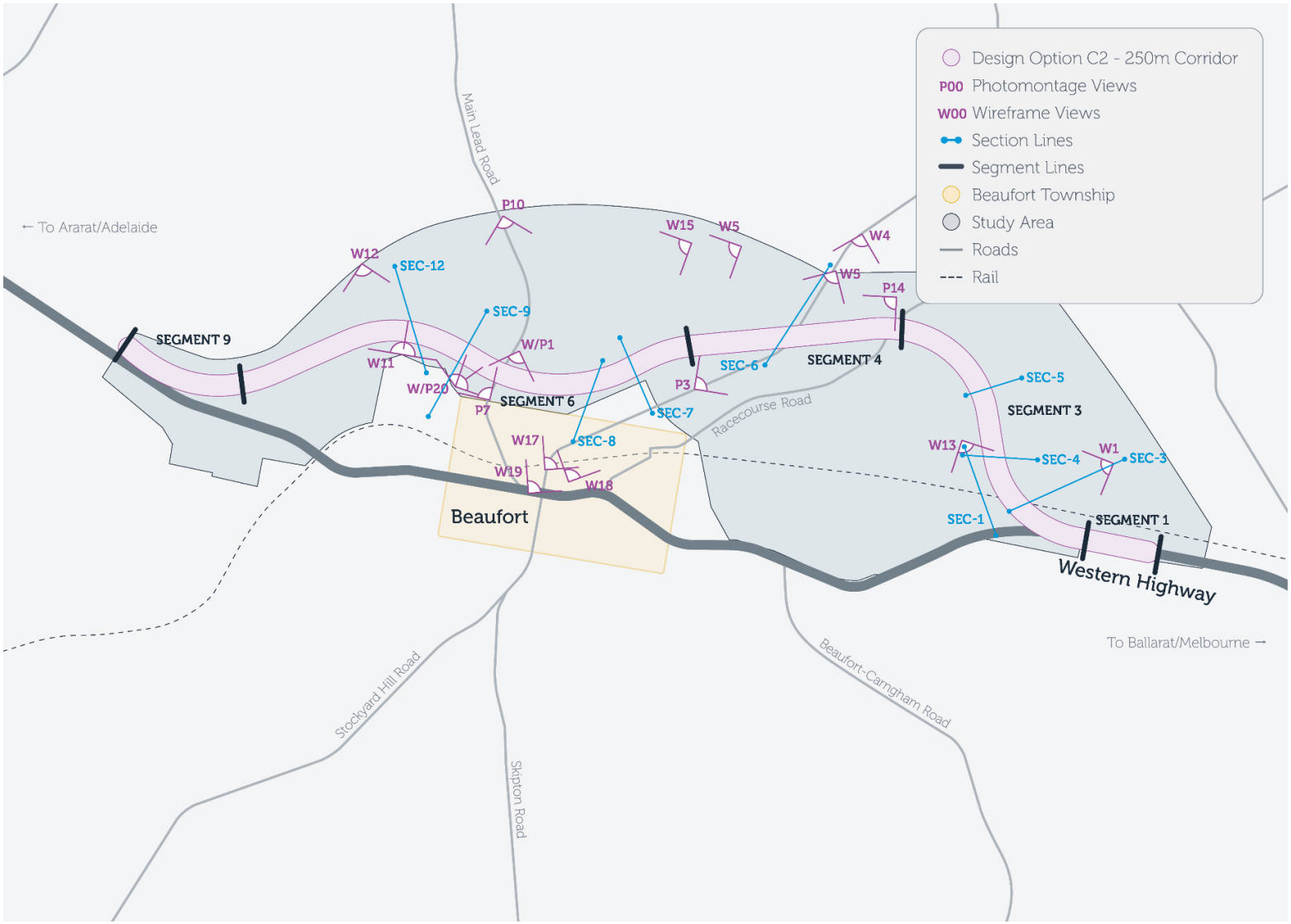


Figure 15.1 Landscape and visual impact assessment segments

Landscape impact score

Landscape impacts for each segment were assessed using the framework illustrated in Table 15.4 and Table 15.5. Table 15.4 shows the matrix that was used to determine the overall impact assessment of the project on the landscape, based on sensitivity of the site and the magnitude of change. It should be viewed in conjunction with Table 15.5, which serves as a key to the colours representing the scales of landscape impact.

Assessment of a site's **sensitivity** considers:

- the level of government policy protection
- its value to the community for its history, scenic amenity, character, nature or cultural connections
- its ability to absorb physical change
- the extent of the landscape
- its typicalness.

Magnitude of change is determined through professional judgement and incorporates assessment of the views to and from the site before and after construction from key locations, as well as landscape features such as vegetation character and landform.

The landscape **impact score** is the overall evaluation of the likely effects of the project on the landscape character of an area. An area of high value landscape character is more likely to be highly impacted than an area of low value. **Value** is determined by professional judgement and incorporates the value the landscape character has in the community through statutory protection, policy or strategic local government studies, and through community perceptions.

Table 15.4 Landscape character areas impact rating table

Sensitivity of site	Magnitude of change						
	Very high	High	Moderate	Moderately low	Low	Very low	Negligible
Very high							
High							
Moderate							
Moderately low							
Low							
Very low							
Negligible							

Table 15.5 Landscape impact score and associated qualities

Landscape Impact score	Evaluation
Very high	• The landscape character is of very high value and is unable to absorb development without significant detrimental effect upon it. • The proposed project will result in a very high level of change to the existing landscape character. • There is limited ability for mitigation measures to reduce impact.
High	• The landscape character is of high value and is unable to absorb development without significant detrimental effect upon it. • The proposed project will result in a high level of change to the existing landscape character. • There is limited ability for mitigation measures to reduce impact.

Landscape Impact score	Evaluation
Moderate	• The landscape character is of moderate to high value and able to absorb some of the development without detrimental effect upon it. • The proposed project will result in a moderate level of change to the existing landscape character. • There is ability for mitigation measures to reduce impact.
Moderately low	• The landscape character is of moderate to low value and able to absorb some of the development without detrimental effect upon it. • The proposed project will result in a Moderately low level of change to the existing landscape character. • There is ability for mitigation measures to reduce impact.
Low	• The landscape character is of moderate to low value and able to absorb development without detrimental effect upon it. • The proposed project will result in a low level of change to the existing landscape character qualities. • There is high ability for mitigation measures to reduce impact.
Very low	• The landscape character is of low value and able to absorb development without detrimental effect upon it. • The proposed project will result in a negligible change upon the landscape character. • There is high ability for mitigation measures to reduce impact
Negligible	• The landscape character is of low value and able to absorb development without detrimental effect upon it. • The proposed project will result in a negligible change upon the landscape character. • No mitigation measures will be required.

Sensitive sites visual impacts assessment

The assessment involves analysis of visual change, in views or in the visual amenity, experienced by individuals and groups of people in identified sensitive public places and private residential areas.

Visual impacts of private residential areas were assessed by landscape consultants from publicly accessible land. Private land was not accessed for the assessment.

The extent of the visual impact at sensitive public sites was determined through an assessment of:

- the degree of significance the site is considered to have, determined by community engagement and analysis of policy documents at the local, State and Commonwealth levels
- the level of sensitivity of the visual audience (see Section 15.5.2)
- the ability of the sensitive site to absorb change
- an understanding of the types of change that the sensitive site is most impacted by and, conversely, those types of change which can be accommodated
- the distance of the site from the project
- the viewshed of the site, as determined through viewshed mapping (this consists of a general 3D terrain or topography to assess the visual impact from sensitive locations)
- photomontages and modelling showing the proposed changes from key viewpoints (which digitally introduce the proposed project into an existing view or photograph the 3D modelling to assist in the assessment of visual impact)
- reference to industry guidelines.

15.4.3 Mitigation

Specific design, construction and operational mitigation measures were developed to manage the potential landscape and visual impacts of the project. All identified mitigations have been informed by technical specialist experience, with proven feasible control measures for major civil infrastructure projects, industry best practice measures and regulatory measures defined by State, Commonwealth and International Government agencies.

The landscape and visual assessment also detailed the residual impacts that will remain following the implementation of the recommended mitigation measures and standard controls. These residual impacts were determined through the reassessment of initial landscape impact rating/score matrices with the inclusion of the identified mitigation measures.

15.5 Study area

The study area for the project includes approximately 1,800 ha of land north of the Beaufort township, which contains the preferred project alignment, C2, assessed in the EES process to determine potential environmental impacts and constraints of the project. This area, as well as the Beaufort township area, was used as the investigation area for the landscape and visual impact assessment (Figure 15.2).

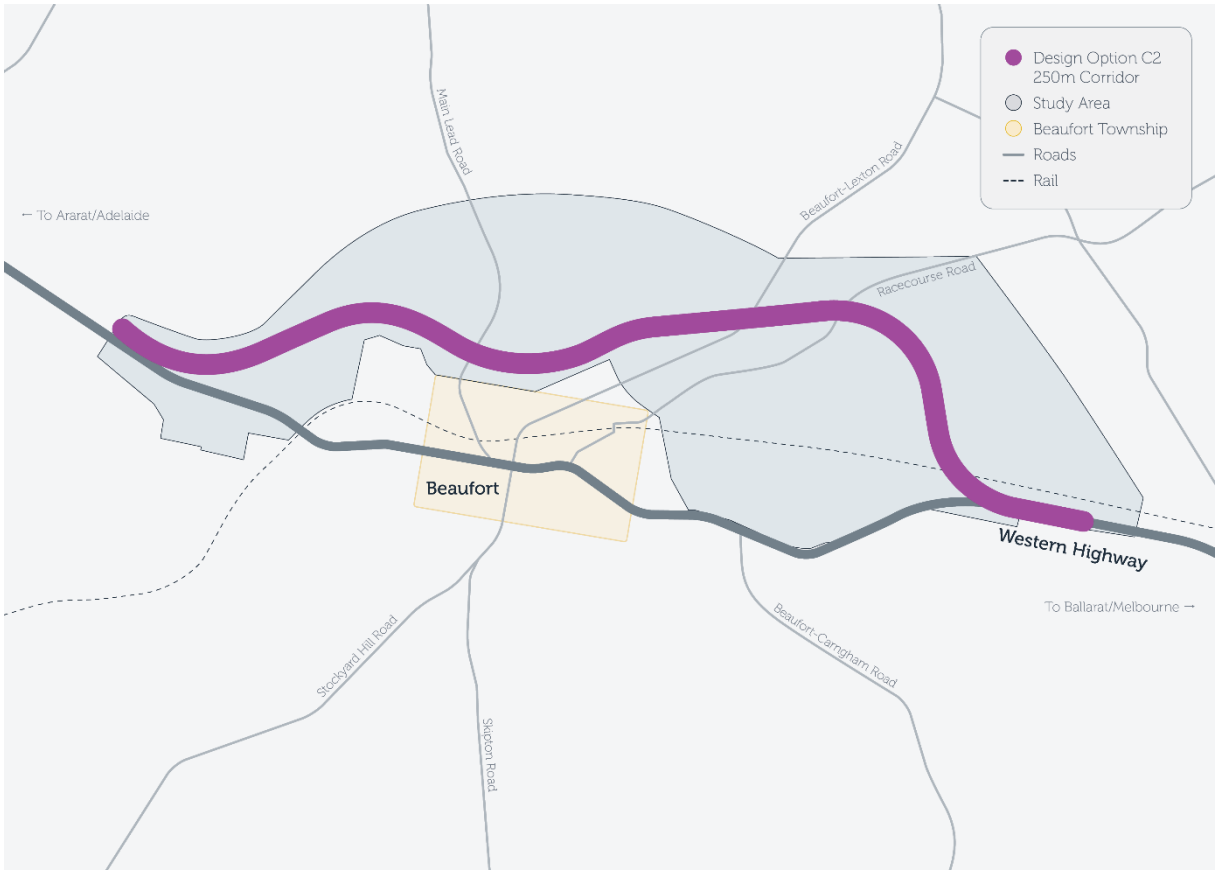


Figure 15.2 Beaufort Bypass study area

15.5.1 Landscape and visual impact investigation area

The landscape and visual assessment investigation area (shown in Figure 15.3) is broader than the project study area described in EES Chapter 4: *Project description* as the assessment required consideration of broader views and landscape character areas that the project may impact. For example, views to the Island Uplands have been included as they have landscape significance.

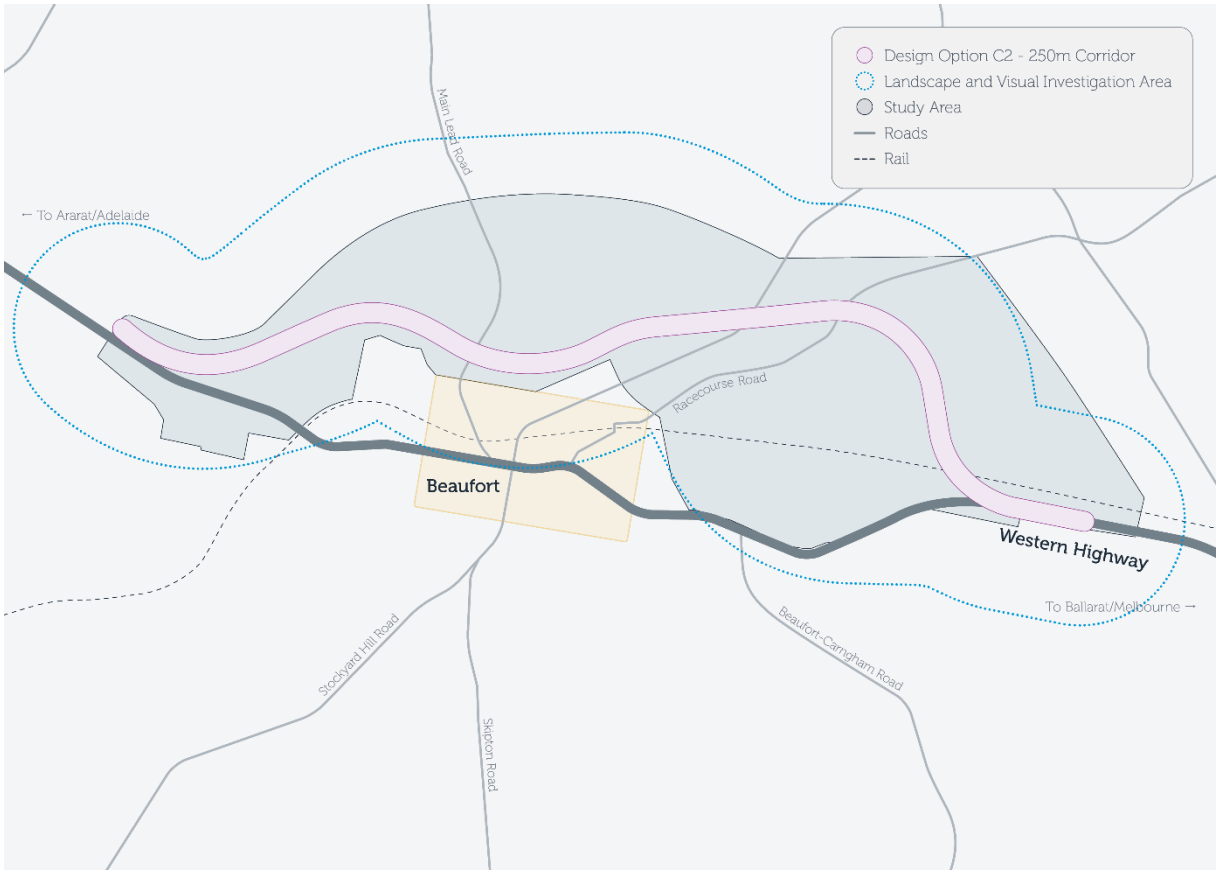


Figure 15.3 Landscape and visual impact investigation area and Beaufort township

15.5.2 Visual audience and amenity

The visual audience were assessed as people within the investigation area who have the potential for their views to be impacted by the project. Visual audiences were identified based on:

- proximity of the audience to the project
- type of audience (e.g. residents, those passing through the area by vehicle, visitors/tourists, pedestrians or workers) as different viewer types would have different levels of impact to their experience of the study area and Beaufort township and concern about the change
- expectations of an experience in a given setting (e.g. expectation of a high level of visual amenity in a national park or from a scenic lookout).

15.6 Existing conditions

15.6.1 Landscape features

The Beaufort township sits within the low point of four surrounding hillsides that range in height from 420 m to 450 m above sea level. Yam Holes Creek is a key watercourse that runs north-east and into Mount Emu Creek to the east.

Several key views and viewsheds have been identified across the investigation area, informed by policy, local landscape character and dominant landscape features:

- **Camp Hill Lookout view**: the view from Camp Hill Lookout is broad and offers views of the south-eastern to south-western landscape, including the township, township fringe and distant treed ridgelines.
- **Camp Hill**: Camp Hill is an important landscape feature in the township and can be seen throughout the township (refer to Figure 15.5).
- **Island Uplands viewshed**: the area called Island Uplands Unit is a series of hills to the north-east of Beaufort. This area is also referred to as the Eastern Ranges and includes Mount Ercildoune, Mount Misery, Mount Bolton, Mount Beckworth, which are approximately 14 km from the eastern end of the project area and approximately 19 km from central Beaufort.

Figure 15.4 shows the location of the key viewsheds and landforms in the investigation area.

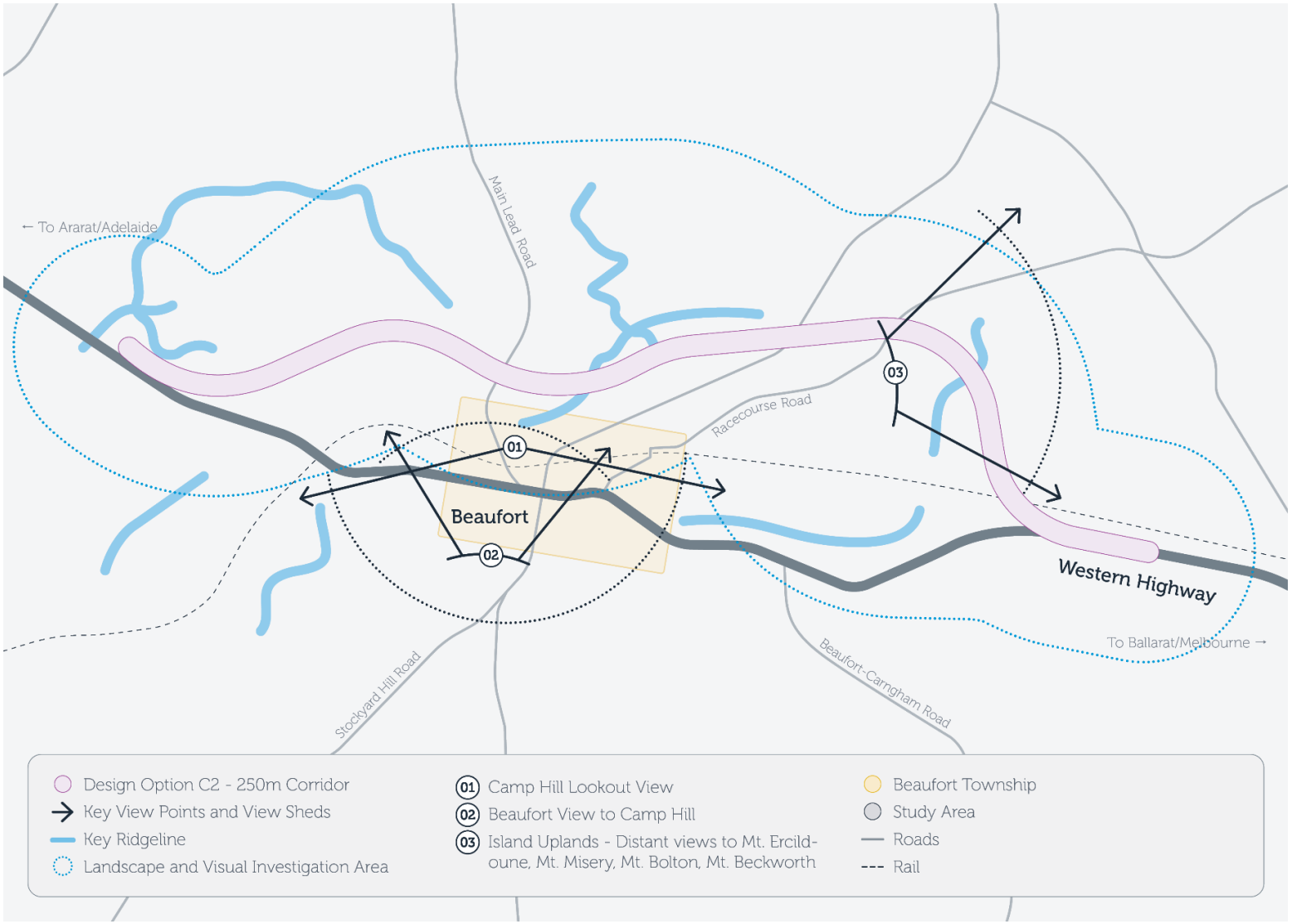


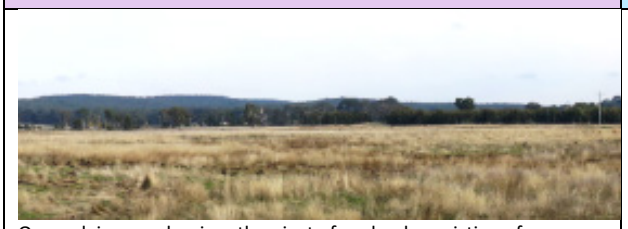
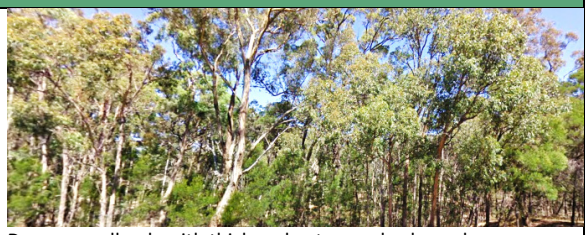
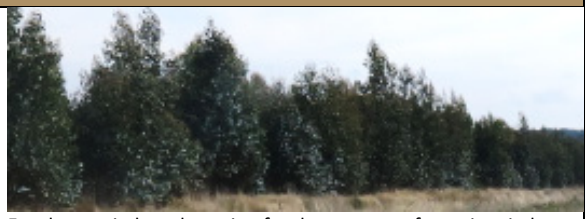
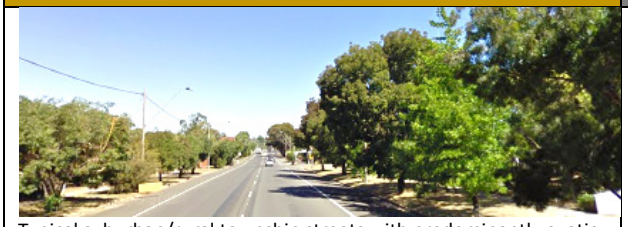
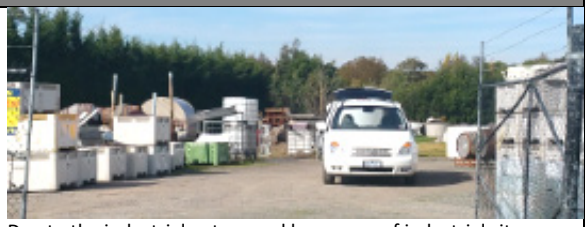
Figure 15.4 Viewsheds and landform in the investigation area and Beaufort township

Figure 15.5 View of Camp Hill from Apex Park, Beaufort

15.6.2 Vegetation character types

The diverse range of vegetation across Beaufort and the study area has been divided into eight vegetation character types, ranging from open grassy plains to dense bushland, as detailed in Table 15.6.

Table 15.6 Vegetation character descriptions

1. Open Grassy Plains	2. Open Grassy Plains and Scattered Trees
 Open plains, predominantly private farmland consisting of open pasture.	 Open plains, predominantly farmland consisting of grasses with some patches of scattered trees and shrubs.
3. Grassy Woodlands	**4. Dense Bushland**
 Woodlands, majority being indigenous, with grassy understorey.	 Dense woodlands with thick understorey, shrubs and grasses.
5. Riparian Zones	**6. Industrial Plantation**
 Creek-style watercourses run through diverse landscape characters. However, the consistent element in this area is the creek which creates a wetland planting typology around it.	 Eucalyptus timber plantation for the purpose of creating timber for industrial uses, typically planted in strict and formal rows. These trees are regularly cleared and re-planted.
7. Rural Township Vegetation	**8. Industrial Land Use**
 Typical suburban/rural township streets with predominantly exotic trees and grasses in nature strips and private planting on residential properties.	 Due to the industrial nature and heavy use of industrial sites, there is typically not very much vegetation besides patches of short grasses and potentially some exotic fast-growing trees for screening purposes.

15.6.3 Landscape character areas

There are nine distinctive landscape character types in the study area. A landscape character type can be defined as '*a broad scale area of land with common distinguishing visual characteristics*.' The location of the landscape character types is mapped in Figure 15.6.

Landscape value: the value the landscape character has in the community through statutory protection, policy or strategic local government studies (e.g. through the Planning Scheme), and through community perceptions.

Sensitivity: is the landscape character's sensitivity to change by the introduction of the project. This is influenced primarily by proximity to the project and the influence of views of the project from the site, as well as the anticipated level of physical and visual impact on the existing landscape character (i.e. magnitude of change).

A description of each landscape character type and the sensitivity to change to the introduction of the project is provided in Table 15.7.

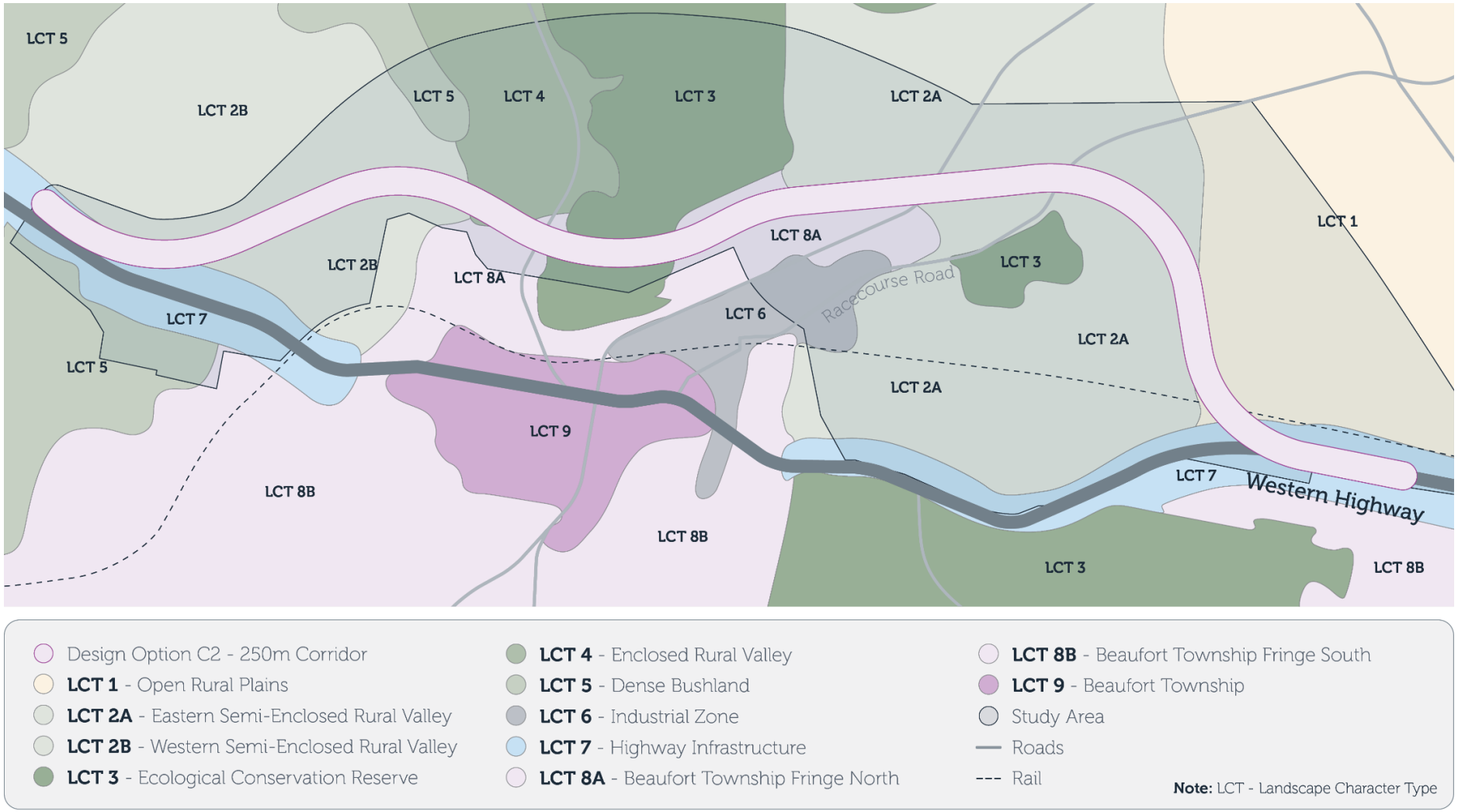


Figure 15.6 **Location of landscape character types in the study area**

Table 15.7 Landscape character types – description and sensitivity to change rating, and assessment value

Landscape character description and sensitivity rating	
1. Open Rural Plains	
	
• Relatively flat topography of typical rural farmland character with open pasture. • Occasional dispersed trees or tree clumps, predominantly indigenous, typically along roadsides and property boundaries. • Open views in three or more directions uninhibited by topography higher than 10 m within 2 km radius • Low density large (5–40 ha) private parcels of land with scattered rural infrastructure, including dams and low scale rural sheds and residences. • Flat plain reduces potential views to at grade road infrastructure. • Open character makes the proposed highway more visible from distant high ground vantage points.	
Landscape Value:	**Ability to absorb change:**
Moderately low – There is extensive open pasture with only occasional tree clumps. Open Rural Plains is a common character seen throughout western rural Victoria.	Moderate – Open pasture appears homogenous and little landscape variety would be lost.
2A. Eastern Semi-Enclosed Rural Valley	
	
• Undulating and enclosed environment created by surrounding hillside topography. • Dispersed trees and limited hectares of dense bushland occur across the character. • Three or more directional views are inhibited by topography higher than 10 m within 2 km radius. • Low density large (5–40 ha) private parcels of land with scattered rural infrastructure, including dams and low scale rural sheds and residences. • Undulating topography will emphasise structural support for grade road infrastructure. • Rural residential properties scattered around the site.	
Landscape Value:	**Ability to absorb change:**
Moderate – Typical of around Beaufort, but the overall valley scale and scattered trees and waterway creates a more intimate and scenic experience.	Moderately Low – Due to the small scale of the open spaces and scattered vegetation, there is a moderately low ability to absorb change.

Landscape character description and sensitivity rating

2B. Western Semi-Enclosed Rural Valley

- Semi-enclosed environment created by surrounding hillside topography.
- Dispersed trees and hectares of dense bushland occur on hillsides.
- Three directional views are inhibited by topography higher than 10 m within 2 km radius.
- Multiple creeks run through low topographical points of valleys in area.
- Low density large (5–40 ha) private parcels of land with scattered rural infrastructure, including dams and low scale rural sheds and residences.
- Creek catchment and run off require careful management.
- Rural residential properties scattered around the site.

Landscape Value:	**Ability to absorb change:**
Moderate – Typical of around Beaufort, but the overall valley scale and scattered trees and various small waterways create a more intimate and scenic experience.	Moderately Low – Due to the small scale of the open spaces and scattered vegetation, there is a moderately low ability to absorb change.

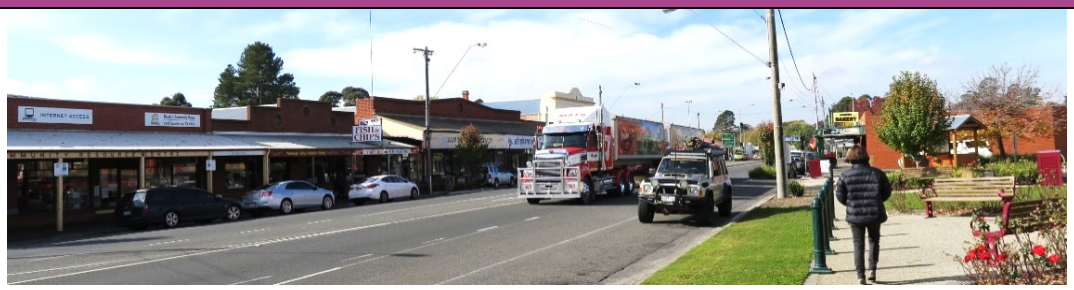
3. Vegetation / Conservation Reserve

- Rural bushland character, comprising of densely packed trees and grasslands.
- Topography is generally high and undulating
- Of significant cultural and natural value due to its conservation status. This also signifies it has been less impacted by pasture animals and westernised agriculture than other areas.
- Has local regional significance.
- Dense vegetation is sensitive to disturbance.
- Distant visibility is low due to dense tree screening.

Landscape Value:	**Ability to absorb change:**
Very High – Forest has State level policy protection for its ecological value and is used for recreation.	Very Low – Change in forest will be highly visible and fundamentally change or reduce character of area.

Landscape character description and sensitivity rating	
4. Enclosed Rural Valley	
	
• Undulating and enclosed environment created by close proximity surrounding hillside topography. • Dense bushland covers surrounding hillsides with tree clumps frequently dispersed across the area. • Three or more directional views inhibited by topography higher than 10 m within 1 km radius. • Residential properties scattered throughout this landscape character area.	
Landscape Value:	**Ability to absorb change:**
High – An enclosed valley, highly treed and edged on both sides by dense bushland, creating an overall scenic experience. Significant creeks run throughout this character and alongside Main Lead Road which adds scenic value.	Low – Change within small scale valley will be highly visible and change or reduce character of area.
5. Dense Bushland	
	
• Privately owned dense bushland of tightly packed trees with dense understorey, shrubs and grasses. • The topography is generally high and undulating.	
Landscape Value:	**Ability to absorb change:**
High – Consists of distinct indigenous vegetation of a high density. Vegetation is valued by the community for its perceived naturalness and ecological benefits.	Low – High landscape area has low ability to absorb change.

Landscape character description and sensitivity rating	
6. Industrial Zone	
	
• Industrial land use area, with large sheds, trucks, storage units and other industrial infrastructures prevalent throughout the area. • A water processing plant is also associated within the area.	
Landscape Value:	**Ability to absorb change:**
Very Low – Little to no vegetation, and character is heavily modified for industrial purposes.	High – Highly modified industrial landscape with limited vegetation and no dwellings is susceptible to change.
7. Highway Infrastructure	
	
• Comprises the existing Western Highway alignment and character with patches of roadside vegetation.	
Landscape Value:	**Ability to absorb change:**
Low – Little to no vegetation in the zone and is already utilised as a highway corridor.	Very High – Existing highway character is able to absorb change without detrimentally affecting existing landscape character.
8. Beaufort Township Fringe (North and South)	
	
• Characterised as a transition zone between rural land and rural town centre, containing an increase in density of low scale residential, industrial land parcels (0.2–2 ha), open spaces and community infrastructure. • Linear bands of canopy vegetation (both indigenous and exotic line property boundaries and road reserves). • These areas are generally gently undulating.	
Landscape Value:	**Ability to absorb change:**
Moderate – Beaufort fringe is a combination of open landscape and closed internal gardens, with broad views across away from Beaufort into the surrounding landscape.	Moderately Low – Density of residential dwellings, many with scenic views, combined with open and closed landscape spaces, has moderately low ability to absorb change.

Landscape character description and sensitivity rating	
9. Beaufort Township	
 • Rural township character comprises main street shops and community spaces, suburban residential housing, open spaces, schools and a hospital. • Streets are typically wide of suburban residential character, have sealed roads, and scattered lines of mature native and exotic planted trees. • Typically residential allotments are small on detached single storey dwellings 400–1,000 m² sized blocks with varying architectural styles. • The topography is generally flat near main township streets and railway, transitioning to gently undulating topography toward southern areas of the township.	
Landscape Value:	**Ability to absorb change:**
Very High – Offers central location for goods and services, open spaces, heritage and culturally valued sites, and is the main meeting place of the local community. There is also a significantly increased number of dwellings within Beaufort compared with Beaufort fringe and rural living areas.	Low – Significantly increased number of dwellings has low ability to absorb change.

The sensitivity of each landscape character type to change is depicted in Figure 15.7. The assessed landscape values for each landscape character type are shown in Figure 15.8.

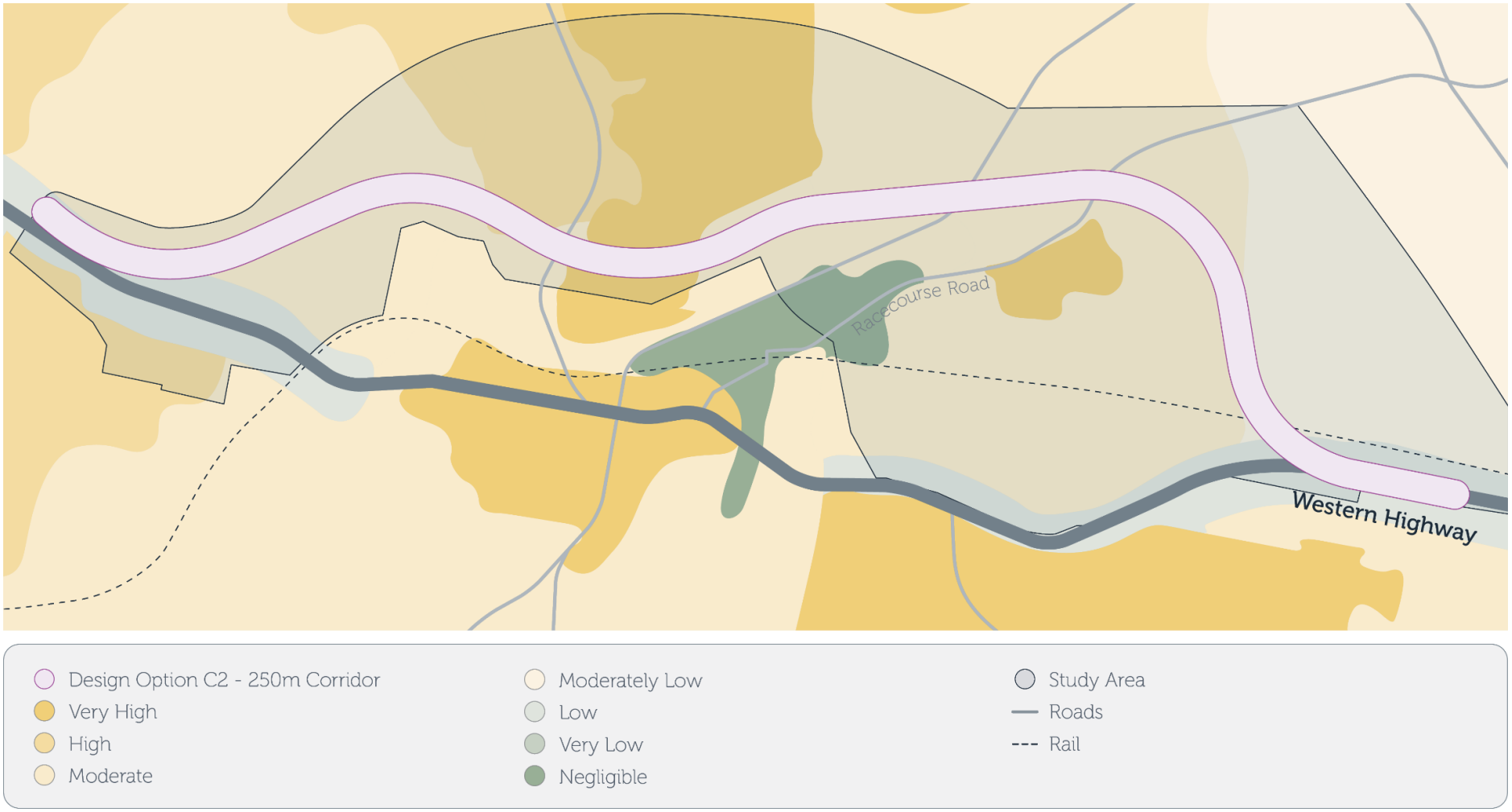


Figure 15.7 **Level of sensitivity to change rating of landscape character types in the study area**

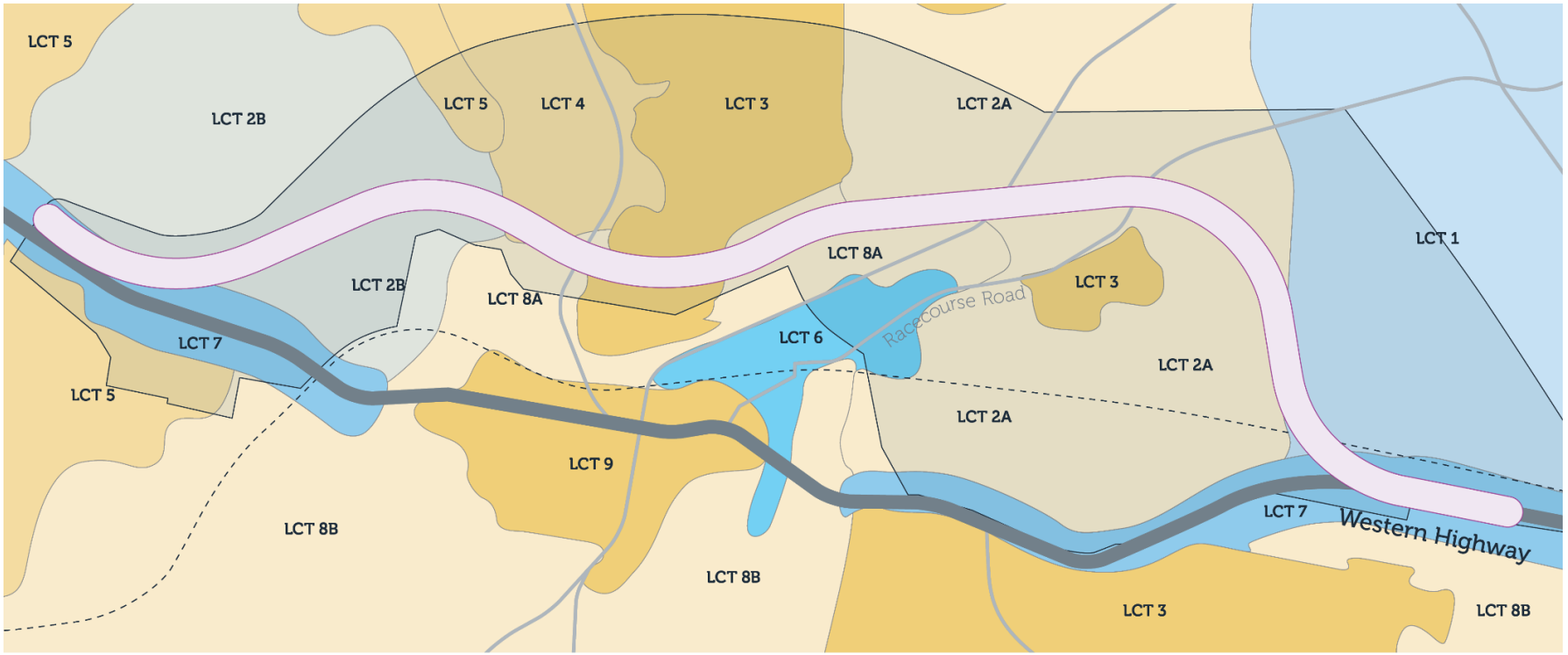


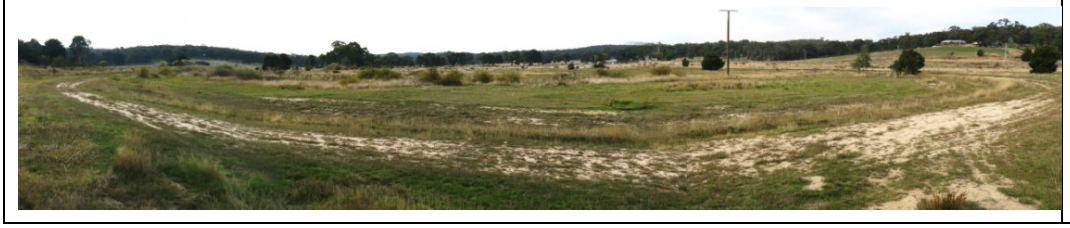
Figure 15.8 **Landscape values for each character type within the study area**

15.6.4 Identified sensitive sites

Local sensitive places

The EES scoping requirements identifies several local sensitive places to be assessed for adverse landscape and visual impact. Additional sites have also been identified through the assessment process (all sites are listed in Table 15.8 and shown in Figure 15.9 below).

Table 15.8 Summary of identified places of sensitivity

Identified sensitive sites	Level of sensitivity
EES scoping requirements identified sites	
1A: Main Lead Road Waterway (Main Leads Common) A highly valued site by local policy and community, predominantly for its water management and ecological functions. 	High
1B: Yam Holes Creek A highly valued site by local policy and the community for its water management and ecological functions, but also for its cultural history. 	High
2: Beaufort Trotting Track Beaufort Trotting Track has been identified through community engagement to not be used by the local community. 	Low

Identified sensitive sites	Level of sensitivity
4: Camp Hill State Forest Camp Hill State Forest is of significance for its ecological value and general natural character. It is also utilised as a place of recreation. 	Very High
7: Snowgums Bushland Reserve The Snowgums Bushland Reserve is of State significance for its high ecological value. It is also utilised as a place of recreation. 	Very High
6: Beaufort Motorcycle Track A local motorcycle track, highly modified for recreational driving and riding of vehicles. In community engagement, the project was not seen to significantly impact on this site. 	Low

Identified sensitive sites	Level of sensitivity
Additional sites identified	
3: Camp Hill Picnic Area A local and regional park used for picnicking and barbeques, it is of moderate value as it has outlooks across the existing arterial road infrastructure. The entire reserve is highlighted as a location to visit on travelvictoria.com.au/beaufort. It is also recognised in the local planning scheme. 	Moderate
4: Camp Hill Lookout A local and regional lookout point with scenic views across the broader Beaufort township and region. As it is specifically highlighted on the Travel Victoria website, it is of high value to the local community and visitors. 	High
9: Beaufort Train Station and Hotel The only public train connection for Beaufort, which brings new visitors and commuters into the area. The station is adjacent to the local hotel, which is utilised by local community day and night. The area has views to Camp Hill. 	High

Identified sensitive sites	Level of sensitivity
10, 12: Beaufort Town Centre and Bicentennial Park The highly valued town centre and main street of Beaufort, this strip provides goods and services to the broader Beaufort community, and therefore is heavily utilised. Views to Camp Hill are glimpsed along the main street and associated open spaces. Bicentennial Park is a valued local park and historical memorial location in the centre of the township.  *View of Beaufort town centre*  *View of Bicentennial Park.*	High
13: Apex Park and skatepark Locally valued skate park and open space link utilised by the local community for recreation and leisure. Views from the open space to Camp Hill in the north. 	High
17: Northern Hope Company H7523-0052 (large mullock heap) A mullock heap from gold digging history is a highly modified and unusual feature in the landscape. It is locally valued lookout and a historical location of gold digging history in Beaufort. 	Moderate

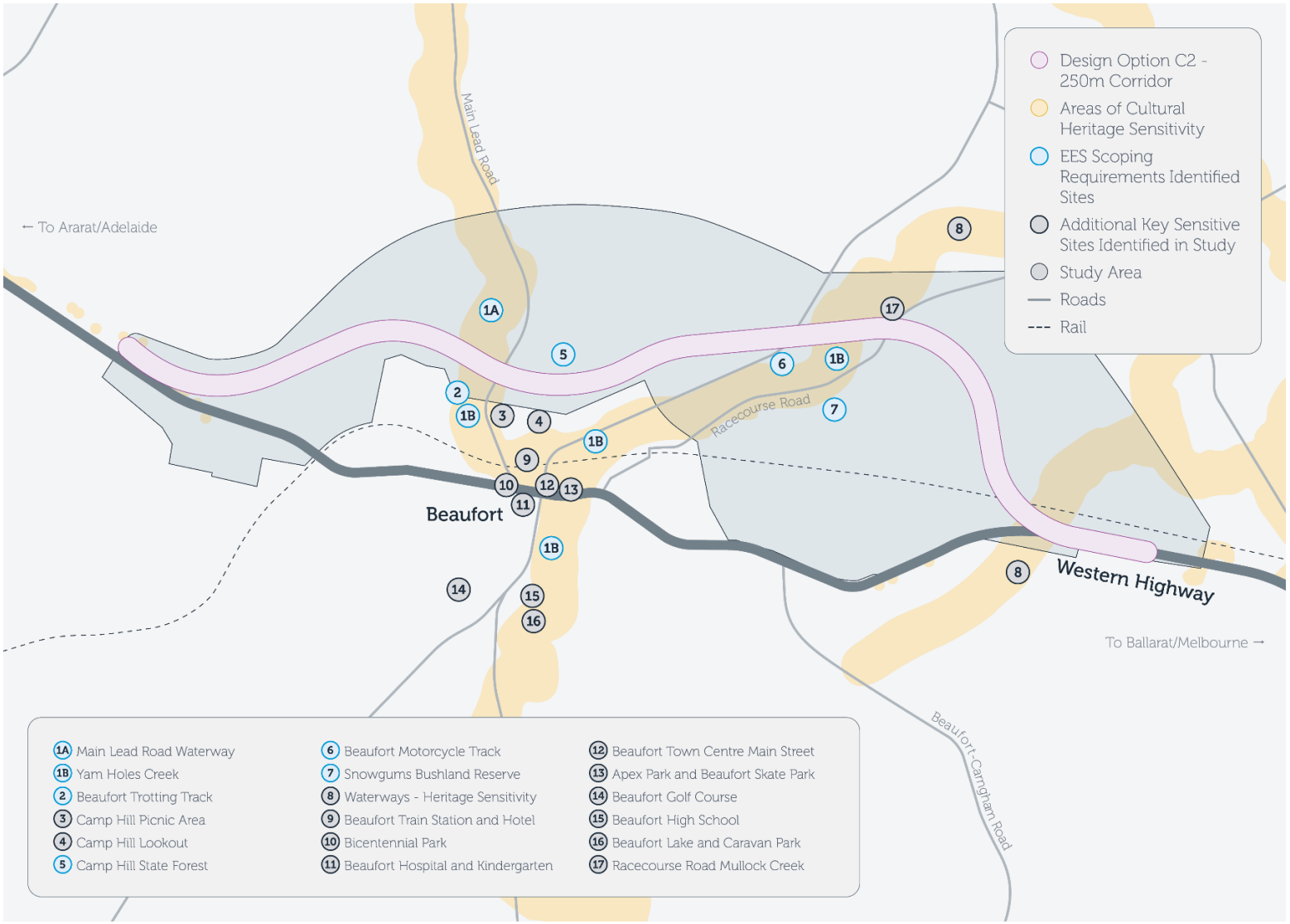


Figure 15.9 Map of identified places of sensitivity

Nearby dwellings

Dwellings within the investigation area are located within the landscape character types of:

- Enclosed Rural Valley
- Highway Infrastructure (few dwellings within this character area)
- Beaufort Fringe (north and south), many with scenic views across existing valleys
- Beaufort Township (greatest number of dwellings in comparison to the other landscape character types).

15.7 Impact assessment

15.7.1 Construction

Assessment of construction impacts, like operational impacts, are dependent on the existing character, sensitive sites, key views and adjacent dwellings. These are all location specific and rely on existing values to assess how the project will impact these values. For this reason, construction-related impacts are assessed with the operational impacts under Section 15.7.2. A brief description of the typical construction-related impacts are detailed below.

Lighting

Construction lighting will be required for discrete periods when night-time works are required, where deemed 'unavoidable'. Impacts will be limited to three interchange and overpass locations, and restricted to the duration of unavoidable works. Lighting of site offices at night will not be required.

Visual impacts

During construction and commissioning there would be works that cause temporary disruption and impacts to surrounding areas, especially at construction compounds, areas of high fill, embankment areas and large cuts. These works may have a high visual impact temporarily, but after the completion of construction the impacts will only be that of the designed landscape.

15.7.2 Operation

The preferred project alignment, C2, is made up of five segments (see Section 15.4.2). Each segment was assessed for impact on landscape character and then assessed against the landscape and visual impact assessment objectives (rating).

The sections below provide a summary of the landscape character assessment, sensitive local sites, key views and number of adjacent residential dwellings associated with each segment, as well as an assessment of the impact rating.

Landscape character

Impacts to landscape character within each alignment segment are assessed in Table 15.9 and illustrated in Figure 15.10 to Figure 15.14 below. The images following the table provide an example of the landscape character type impacts through the use of wireframe or photomontage renders.

Photomontages: digitally introduce the proposed project into an existing view or photograph to assist in the assessment of visual impact. These renders utilise the 3D model and add textured surfaces to depict different materials of the project within the existing photos. These models are positioned within the existing landscape and are placed behind existing objects within the view to give a representation of what the project may be hidden or covered by that is existing within the landscape and associated view.

Wireframes: basic geometries of the 3D model outlined and overlaid on the photo. This aids in highlighting potential impacts and an understanding of the project.

Overall the project rates **moderate–poor** in minimising impact on landscape character. Key impacts include:

- significant cut into the Camp Hill hillside with visibility of this for some distance and from within Beaufort
- lengths of elevated embankment and bridge structures within low, wide waterway areas.

Table 15.9 Landscape character type impact assessment

Segment	Landscape character	Value	Ability to absorb change	Level of change in landscape by project	Final landscape character impact score	Summary
Segment 1: Western Highway, eastern entrance and exit	Highway Infrastructure	Low	Very high	Low	Very low	Segment 1 is located within the 'Highway Infrastructure' landscape character type. Potential for impacts on landscape character are considered **very low**.
Segment 3: Western Highway to Beaufort-Lexton Road	Highway Infrastructure	Low	Very high	Moderate	Moderately low	Segment 3 is within the 'Highway Infrastructure', 'Open Rural Plains' and 'Eastern Semi-enclosed Rural Valley' landscape character types. Direct vegetation loss would occur mainly within the Eastern Semi-Enclosed Rural Valley that has dispersed trees areas. Some direct vegetation loss could occur within the Open Rural Plains (mostly planted vegetation). Potential for impacts on landscape character are considered **moderate**.
	Open Rural Plains (see Figure 15.10)	Moderately low	Moderate	High	Moderately low	
	Eastern Semi-Enclosed Rural Valley (see Figure 15.11)	Moderate	Moderately low	Moderate	Moderate	
Segment 4: Racecourse Road to Beaufort-Lexton Road	Beaufort Fringe (see Figure 15.12)	Moderately low	Moderate	High	Moderate	Segment 4 is located within the 'Eastern Semi-enclosed Rural Valley' and Beaufort Township Fringe' landscape character types. Potential for impacts on landscape character are considered **moderate**.
	Eastern Semi-Enclosed Rural Valley	Moderate	Moderately low	Very high	High	

Segment	Landscape character	Value	Ability to absorb change	Level of change in landscape by project	Final landscape character impact score	Summary
Segment 6: Camp Hill to Martins Lane	Western Semi-Enclosed Rural Valley (see Figure 15.13)	Moderate	Moderately low	Moderate	Moderate	Segment 6 is located within the 'Western Semi-enclosed Rural Valley', 'Enclosed Rural Valley', Beaufort Township Fringe North West', 'Ecological Conservation Reserve' and Beaufort Township Fringe – North East' landscape character types. Potential for impacts on landscape character are considered **moderate-high**.
	Enclosed Rural Valley (see Figure 15.14)	High	Low	High	High	
	Beaufort Fringe north-west	Moderate	Moderately low	High	Moderate	
	Ecological Conservation Reserve	Very high	Very low	Very high	Very high	
	Beaufort Fringe north-east	Moderate	Moderately low	Very high	High	
Segment 9: Western Highway, proposed western entrance and exit	Highway Infrastructure	Low	Very high	Moderate	Moderately low	Segment 9 is located within the 'Western Semi-Enclosed Valley' and 'Highway Infrastructure' landscape character types. Potential for impacts on landscape character are considered **moderately low**.
	Western Semi-Enclosed Rural Valley	Moderate	Moderately low	Moderately low	Moderately low	

Figure 15.10 **Open rural plain landscape character – Wireframe render from Smiths Lane looking south-west to the project area**

Figure 15.11 **Eastern semi-enclosed rural valley landscape character – Wireframe render from Packhams Lane looking south-west to the project area**

Figure 15.12 **Beaufort fringe landscape character – Wireframe render along Beaufort–Lexton Road looking north-west to the project area**

Figure 15.13 Western semi-enclosed rural valley landscape character – Wireframe render along Back Raglan Road looking west to the project area

Figure 15.14 Enclosed rural valley landscape character – Photomontage render from Main Lead Road looking south to the project area

Sensitive local sites

The project area has five sites with moderate to very high level of sensitivity within 500 m of the alignment outer carriageway. These are:

- Snowgums Bushland Reserve
- Yam Holes Creek
- Racecourse Road Mullock Heap
- Camp Hill picnic area
- Camp Hill State Forest.

Impacts to sensitive local sites within each segment are assessed in Table 15.10 below. Figure 15.15 provides an example of the impact of the project on a sensitive local site, the Beaufort Trotting Track, through a photomontage render.

Table 15.10 Sensitive local sites impact assessment

Segment	Sensitive local site within 500 m of the project area	Level of sensitivity	Impact score	Summary
Segment 1: Western Highway, eastern entrance and exit	N/A	N/A	N/A	Not considered to be any potential impacts on sensitive local sites (**not applicable**).
Segment 3: Western Highway to Beaufort-Lexton Road	Snowgums Bushland Reserve	Very high	Moderately low	Overall visual impact considered to be **moderate**.
	Racecourse Road Mullock Heap	Moderate	Moderate	
Segment 4: Racecourse Road to Beaufort-Lexton Road	Beaufort Motorcycle Track	Low	Very low	Overall impact considered to be **moderate**.
	Snowgums Bushland Reserve	Very high	Moderately low	
	Yam Holes Creek	High	Moderate	
	Racecourse Road Mullock Heap	Moderate	Moderate	
Segment 6: Camp Hill to Martins Lane	Beaufort Trotting Track (see Figure 15.15)	Low	Moderate	Overall impact considered **moderate-high**.
	Camp Hill picnic area	Moderate	Moderately low	
	Camp Hill State Forest	Very high	Very high	
Segment 9: Western Highway, proposed western entrance and exit	N/A	N/A	N/A	Not considered to be any potential impacts on sensitive local sites (**not applicable**).

The sites most affected include Camp Hill State Forest, Yam Holes Creek and Main Lead Road waterway. Camp Hill is affected due to its high level of sensitivity and the significant reduction in its overall extent. Yam Holes Creek and Main Lead Road waterway are also affected primarily because the project will be quite visible from these sites.

Figure 15.15 Photomontage render of Beaufort Trotting Track looking north to the project area

Key views

The project is close to three sensitive viewsheds, primarily the Camp Hill area and the Island Uplands. The Island Uplands are quite some distance from the project area and as such, will not detrimentally affect the significance of the site. The Camp Hill viewshed is both to and from the hill. Camp Hill and the overall mountain range will be affected by large-scale cut on its southern side and overall disturbance by the project.

Impacts to key views within each alignment segment are assessed in Table 15.11 below.

Table 15.11 Key views impact assessment

Segment	Key view and viewshed	Level of sensitivity	Impact score	Summary
Segment 1: Western Highway, eastern entrance and exit	Island Uplands	High	Very low	'Island Uplands' are located over 12 km away to the north-east. Will not be impacted by the project (**not applicable**).
Segment 3: Western Highway to Beaufort-Lexton Road	Island Uplands	High	Very low	'Island Uplands' are located over 12 km away to the north-east. The fill embankment and noise walls may obscure a small number of resident's views from the vicinity of Packhams Lane. Overall key views and viewsheds impact considered to be **very low**.
Segment 4: Racecourse Road to Beaufort-Lexton Road	Camp Hill Lookout	High	Very low	The project will be most visible to the east from Camp Hill Lookout. To the west, it is highly likely that there will be no view of the project. Overall key views and viewsheds impact is **very low**.
Segment 6: Camp Hill to Martins Lane	Camp Hill Lookout	High	Very low	Key views and viewsheds potentially impacted by the project within this section are views from the Camp Hill lookout and views to Camp Hill from Beaufort. Views from Beaufort to Camp Hill may be impacted by visible cut to the north-east of Camp Hill in the north-eastern parts of Beaufort. Overall key views and viewsheds impact is **very low**.
	Beaufort to Camp Hill	High	Very low – Low	
Segment 9: Western Highway, proposed western entrance and exit	N/A	N/A	N/A	No key views or viewsheds would be impacted within this segment (**not applicable**).

Adjacent residential dwellings

Impacts to adjacent residential dwellings within 500 m of the outer carriageway of the project area within each segment are outlined in Table 15.12 below. Figure 15.10 above provides an example of the impact of the project at a residential dwelling location, Smiths Lane east (within Segment 3), though a wireframe render.

Table 15.12 Adjacent residential dwellings (within 500 m) impact assessment

Segment	Adjacent residential dwellings	Summary
Segment 1: Western Highway, eastern entrance and exit	10	As the works within this segment are similar to the existing highway features, the impact will be **low**.
Segment 3: Western Highway to Beaufort-Lexton Road	11	Three dwellings located on the eastern side of Packhams Lane are within 250 m of the project. Overall adjacent residential dwellings impact is **low**.
Segment 4: Racecourse Road to Beaufort-Lexton Road	7	Seven residential dwellings within 500 m of the project within this segment. Two houses within 100 m and would have significant views of the project. Overall adjacent residential dwellings impact is **high**.
Segment 6: Camp Hill to Martins Lane	29	There are a number of residential dwellings within 500 m of the project. Residents will have some views of the project, particularly through the deep cuts and hillside that will be visible from dwellings along Beaufort-Lexton Road. Residential dwellings on Main Lead Road within 100 m of the project area would have significant views to the south and west, as would some on the northern side of Back Raglan Road near the trotting track. Overall impact is considered **moderately high**.
Segment 9: Western Highway, proposed western entrance and exit	6	A number of residential dwellings within 500 m of the project. Overall adjacent residential dwellings impact is **low**.

There were 63 dwellings identified within 500 m of the project area (as measured from the outer carriageway), with five of these dwellings located within 100 m and nine within 250 m of the project area.

Overall the project rates **very poor** in minimising impact on existing dwellings. The majority of the dwellings (49 out of the 63) are within 251–500 m of the project area and as such, there is opportunity for design mitigation of the project to reduce the visual impact to the residents of the dwellings through earth mounding, vegetation and well-designed noise walls, bridges and other large-scale visible elements.

Lighting

There is currently no lighting design for the project. However, it is understood that there will be typical road lighting at the three interchanges along the project. These interchanges are located outside of the main town area in more regional landscapes and will change the overall night-time character of these areas.

15.8 Mitigation

The project will be undertaken in accordance with relevant RRV standard specification including, but not limited to the *VicRoads Contract Shell DC1: Design and Construct* (April 2012). These have been developed by RRV and provide a level of mitigation appropriate to minimise typical physical impacts on the environment and the community.

The mitigations proposed to manage potential impacts to landscape and visual are summarised in Table 15.13 below. The mitigations apply to the design, construction and operation phases of the project.

Table 15.13 Mitigation measures for landscape and visual impacts

Impacts	Mitigation measures	Mitigation number
Design		

Landscape character
Nearby dwellings
Sensitive sites
Sensitive views
	A Landscape Management Strategy must be developed and implemented, to the satisfaction of MRPV and in consultation with the Registered Aboriginal Party. The strategy will include:
	• weed management measures
	• fauna sensitive road design principles
	• planting schedule for reinstatement, including:
	  – focus on ecological appropriate species and local endemic/native species
	  – local planting themes where possible to identify 'gateways' within interchange reservation boundaries, in the design of rest areas or to identify other significant landscape elements
	  – planting of trees and vegetation to screen elevated carriageway from key viewpoints in landscape
	  – strategies for integration of habitat corridors and culverts into freeway design to reduce impact upon flora and fauna connections and increase public access
	• screening of adjacent access roads and dwellings using plant and/or landform between the freeway and the right-of-way boundary
	• implementation of the relevant lighting standards, including the AS 4282-1997 *Control of the obtrusive effects of outdoor lighting*, and the UK *Guidance Note 1 for the reduction of obtrusive light 2020.*
	The removal of mature trees, particularly large amenity trees and significant trees as identified should be minimised.
		LV01

Construction		
Landscape character Nearby dwellings Sensitive sites Sensitive views	The construction contractor will be required as a condition of the contract to prepare a project-specific Construction Environmental Management Plan. The Construction Environmental Management Plan will be required to address the range of environmental impacts and proposed management measures identified in the EES. Measures to be contained in the Construction Environmental Management Plan should be consistent with LV01 and include: • visual impact of construction compounds is to be mitigated through specially designed hoardings that improve appearance • to mimimise light spillage and protect the amenity of adjacent land uses to the extent practicable, lighting should meet the typical recommendations (e.g. use of diffusers, shields) identified in the relevant VicRoads and Austroads guidelines and policies and AS/NZS 1158 *Lighting of Roads and Public Spaces* • tree removal, to minimise the removal of mature trees, particularly large amenity trees and significant trees as identified • site management, in accordance with RRV's *Roadside Management Strategy* • trees and vegetation planting.	LV02

Impacts	Mitigation measures	Mitigation number
	Landscape design plans aligned with LV01 must protect and, where practicable, improve access to, and amenity for, potentially affected residents, open spaces, pedestrian and cyclist networks, social and community infrastructure, and commercial facilities. The landscape design should: • utilise colours and materials for structural elements which blend in with or complement surrounding landscape character, avoid reflective and bright colours • where possible, retain natural material/geology/earth in cuttings • where noise attenuation is required, consider noise attenuation mounds as a first option, followed by noise walls and other attenuation techniques • minimise visual impact and overshadowing of bridges, noise walls and associated fill • enhance usability in bridge underpasses for recreation and leisure to encourage use and increase safety under bridges • locate and design watercourse crossings to minimise loss of riparian vegetation and to accommodate erosion control methods • ensure bridge design minimises visual and landscape impacts and enhance amenity, public use, passive surveillance levels and recreational offer to the extents practicable. This includes all aspects of the bridge design including, materials, noise walls, abutments and embankments. Landscape and architectural elements should be developed in consultation with the Registered Aboriginal Party and consider the application of Indigenous design elements to the project.	LV03
Operation		
Landscape character Nearby dwellings Sensitive sites Sensitive views	To ensure effectiveness of landscape treatments MRPV will manage and monitor landscape works through their performance requirements within VicRoads standard specifications: • *Section 720 – Landscape Works*, which includes regular revegetation auditing to ensure contractors meet specified revegetation targets within the defects liability period. Trees not meeting the growth performance requirements will be replaced annually by the contractor to achieve the specified planting numbers.	LV04

15.9 Residual impacts

Following incorporation of mitigations outlined in Section 15.8, the residual impacts outlined in Table 15.14 will apply for the project.

Table 15.14 Landscape and visual residual impacts

Impacts	Residual impacts	Residual rating
Landscape character	Following implementation of mitigations to segments 1, 3, 4, 6 and 9, residual impacts to landscape character will be moderate immediately after construction until landscape mitigations have established. The residual impact for landscape character will then transition to low after approximately five years of growth.	Moderate – Low
Nearby dwellings	Residual impacts to nearby dwellings will be moderate as identified mitigations will not completely negate the following permanent visual aspects of the project: • noise walls will remain permanently visible and while vegetation planting in front of them will reduce their impact, they will remain a long-term physical presence in the landscape • the project bridges, raised elevated lengths and interchanges will remain permanently visible and have ongoing residual impact, primarily due to their height and location in flat areas or their proximity to township areas • the significant cut into Camp Hill will remain partially visible for some time and, even with significant tree growth, would still be permanently visible from certain viewpoints.	Moderate
Sensitive sites	Residual impacts to sensitive sites immediately after construction will be moderate until vegetation mitigations are established. The residual impacts to sensitive sites will then transition to low due to: • vegetation and earth mound screening adjacent to the project that will reduce the visual impacts over time. For the initial five years the infrastructure and landscape forms will be highly visible and bare • general planting within the road right-of-way may take up to five years to start having a considerable impact on reducing visibility or direct views of the elevated embankment or freeway itself.	Moderate – Low
Sensitive views	Residual impacts to sensitive views immediately after construction will be moderate until vegetation mitigations are established. The residual impacts to sensitive views will then transition to low due to: • vegetation and earth mound screening adjacent to the project that will reduce the visual impacts over time. For the initial five years the infrastructure and landscape forms will be highly visible and bare • general planting within the road right-of-way may take up to five years to start having a considerable impact on reducing visibility or direct views of the elevated embankment or freeway itself.	Moderate – Low

15.10 Conclusion

The landscape and visual impact assessment has been undertaken in order to determine the potential impacts of the project on surrounding areas.

In terms of reviewing overall landscape and visual effects, the key project features that generate landscape and visual impacts are as follows:

- the interchanges at the eastern and western tie-ins
- an interchange on the north-east fringe of Beaufort on the Beaufort-Lexton Road
- the large-scale cut resulting in changes to Camp Hill (because of the visibility of the project as it moves across Camp Hill)
- the length of noise walls.

In relation to the above features and the EES objective to *minimise adverse effects on visual and landscape values as far as practicable during construction and operation*, prior to mitigation the project rates very poor in minimising impact on existing dwellings and moderate-poor in minimising impact on landscape character. However, additional measures beyond the standard controls are available to reduce these impacts, including planting outside of the project area to further reduce impacts, and planting of trees and vegetation to screen elevated elements. Where practicable, elevated carriageway infrastructure is to be of quality design and to blend in with existing context and colours of the surrounding landscape. The development of the landscape design will include measures to conceal the freeway from the township and residential viewpoints.

The impact on significant local areas (e.g. Camp Hill State Forest, Snowgums Bushland Reserve) and views of the wider landscape has been determined as moderately low.

With the implementation of proposed mitigation measures, the following residual impacts will apply for the project:

- moderate residual impacts to landscape character, sensitive sites and sensitive views immediately after construction until vegetation mitigations have established, reducing to a low residual impact after approximately five years of vegetation growth
- moderate residual impacts to nearby dwellings due to permanent visual aspects of the project including noise walls, bridges, raised elevated lengths, interchanges and significant areas of cut through Camp Hill.