



Transport
Roads & Maritime
Services



Katoomba to Lithgow
Great Western Highway Upgrade

Mount Victoria village safety upgrade

Review of Environmental Factors
Volume 3 Appendix I - J

November 2013

Appendix I

Landscape character and visual amenity technical report

FINAL

GREAT WESTERN HIGHWAY UPGRADE KATOOMBA TO LITHGOW MOUNT VICTORIA VILLAGE SAFETY UPGRADE

**Review of Environmental Factors
Technical Paper**

**Urban Design Report and Landscape Character &
Visual Impact Assessment Report**

NOVEMBER 2013



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**Great Western Highway Upgrade
Katoomba to Lithgow
Mount Victoria Village Safety Upgrade**

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**Urban Design Report and Landscape Character &
Visual Impact Assessment Report**

NOVEMBER 2013

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EXECUTIVE SUMMARY

Roads and Maritime Services is seeking approval for the Great Western Highway Upgrade at Mount Victoria village (the proposal). The proposal would include the upgrade of about 2.3 kilometres of the Great Western Highway from 400 metres west of Browntown Oval to just west of Mount York Road, including the upgrade of a number of intersections. This Landscape Character and Visual Impact Assessment Report has been prepared as part of the Review of Environmental Factors (REF) process to address the visual and landscape character issues associated with the proposal, to introduce measures to minimise its potential impact, and to provide direction for future detail design and documentation work.

The study area for the Mount Victoria village proposal adjoins a predominately village landscape with exotic vegetation and residential dwellings dominating. The eastern end of the study area travels through an area of native bushland prior to entering the outskirts of the village. The character of the road itself is relatively constant as a generally slightly winding and undulating two lane road.

Urban Design

An urban design strategy is provided in Chapter 4. A number of urban design objectives have been developed to guide the urban design strategy. The objectives reflect the most important goals to be achieved as a result of the proposal, taking into account not only the corridor itself but also its relationship with surrounding areas.

Urban design drawings are presented in Chapter 3, in plan and cross section format, and indicatively illustrate the urban design proposal which will be further developed in the detail design phase of the project.

Landscape Character

Landscape character impact assessments are provided in Chapter 5. Landscape character assessment determines the impact of the proposal on the aggregate of built, natural and cultural aspects that make up an area and provide its unique sense of place. Although the overall character of the study area is quite similar, the analysis in Chapter 2 identifies three landscape character zones. The landscape character impact assessment identifies that overall the proposal would have a moderate to low to high character impact. While the proposal is to take place in an established road corridor, it would impact on all Landscape Character Zones to some degree. The greatest impact on landscape character is the zone where the scale of the proposal is more substantial, for example, the new access road and extensive retaining walls in zone 2.

Visual Assessment

Visual impact assessment is provided in Chapter 6, defining the day to day visual effects of a proposal on people's views. It is based on the assessment of a number of selected key viewpoints that are rated according to the sensitivity of the view and the magnitude of the proposal within that view. The locations and directions of the chosen viewpoints are representative of the range of viewpoints both within and beyond the road corridor. A total of 16 key viewpoints form the basis of the visual impact assessment.

Out of the 16 selected viewpoints, visual impact ratings were determined as follows:

- One viewpoint has High visual impact.
- Two viewpoints have High to Moderate visual impact.
- Six viewpoints have Moderate visual impact.
- One viewpoint has Moderate to Low visual impact.
- Six viewpoints have Low visual impact.

Ratings of High and High to Moderate impact occur in areas where the magnitude of the proposal is the greatest, such as the construction of the six metre wide access road and two associated retaining walls opposite Harley Avenue and the road realignment and new retaining wall below the highway near Mount Piddington Road. The majority of impacts are rated between Moderate and Low and generally result from the relatively moderate extent of roadworks and improvements, both visual and to amenity of the highway, for example, the new street tree planting along the highway in LCZ 3.

Mitigation Strategy

A mitigation strategy is provided in Chapter 7. It has been developed during the road concept design to mitigate landscape character and visual impacts and may be refined in the ongoing development of the design. It also includes a summary of further mitigation measures to be further investigated during the subsequent detail design phase of the project.

I. INTRODUCTION

I.1 OVERVIEW

PURPOSE

This Landscape Character and Visual Impact Assessment Report has been prepared for Sinclair Knight Merz (SKM) on behalf of Roads and Maritime Services (Roads and Maritime), by Spackman Mossop Michaels (SMM) as part of the Review of Environmental Factors (REF) for the proposed upgrading of Great Western Highway at Mount Victoria village. The proposal has been divided into three sections and extends from 400 metres west of Browntown Oval (east of Mount Victoria village) to just west of Mount York Road, a distance of 2.3 kilometres, in the Blue Mountains Local Government area (refer to Figure I.1). This document is a technical paper that supports the REF being prepared by SKM. SMM has worked on this proposal in conjunction with members of SKM, the Roads and Maritime Centre for Urban Design and other Roads and Maritime specialist advisors.

The report documents the landscape character and visual impacts of the proposal and has been prepared as part of the planning approval process. It aims to facilitate an integrated urban design and engineering design outcome for the proposal at this section of the Great Western Highway, through the utilisation of visual impact assessment to identify and summarise the visual and landscape character opportunities and issues within the study area. This, in turn has guided the development of the road concept design process by avoiding or mitigating potential impacts wherever possible.

BACKGROUND

The Great Western Highway is the principal road transport link connecting the Central West region of New South Wales (NSW), the Blue Mountains and Sydney. The highway is an important freight transport corridor and is also used by thousands of commuters each day travelling between Sydney and the towns and villages along its length. The highway also provides a vital connection for tourists to many popular destinations within the region including various Blue Mountains tourist towns and villages, Greater Blue Mountains World Heritage Area, the Hartley Valley, Jenolan Caves and, further west, towns such as Mudgee, Orange and Bathurst.

Since May 2008, the Australian and NSW Governments have been investigating an area between Mount Victoria and Lithgow to determine the preferred route of an upgrade for the Great Western Highway. The Mount Victoria to Lithgow Great Western Highway upgrade is part of both governments' commitment to improve road safety and accessibility to communities in the Blue Mountains and Central West.



Figure I.1: Mount Victoria Village proposal

The Mount Victoria to Lithgow upgrade was announced in 2008 and forms part of the **Penrith to Orange Transport Strategy** (1998), the **Sydney – Dubbo Corridor Strategy** (2007) and the **Central West Transport Needs Study** (2009).

The objectives of the proposal, which have guided the development of the draft concept design, were to:

- Improve road safety.
- Improve road freight efficiency.
- Cater for the mix of through, local and tourist traffic.
- Be sensitive to the areas natural environment, heritage and local communities.

Following on from this work, in July 2012, the NSW and Australian Governments announced a \$250 million revised investment program for, amongst others works, the delivery of enhanced safety works packages between Katoomba and Lithgow. This decision addressed recommendations from an independent review of the proposed upgrades of the Great Western Highway west of Katoomba.

The revised package of upgrades will enhance safety outcomes and maximise benefits to the community by targeting specific deficiencies. Roads and Maritime Services (Roads and Maritime) will manage and deliver the following:

- Upgrading the highway at Forty Bends, east of Lithgow to three lanes on the current alignment (\$120 million).
- A number of enhanced safety upgrades between Mount Victoria and Lithgow. These include Forty Bends, River Lett Hill, Hartley Valley and Mount Victoria Village Safety Upgrades (\$83 million).
- Finalising the concept design and road boundaries for upgrading the highway from Mount Victoria to Lithgow and requesting councils to adopt these in their future planning.
- Using the remaining funds from the joint \$250 million Australian and NSW government commitment for upgrades of the Great Western Highway between Katoomba and Mount Victoria.

MOUNT VICTORIA VILLAGE SAFETY UPGRADE

Roads and Maritime is proposing to upgrade the Great Western Highway at Mount Victoria. The proposal would include the upgrade of about 2.3 kilometres of the Great Western Highway and is comprised of three sections, from 400 metres west of Browntown Oval (east of Mount Victoria village) to just west of Mount York Road (the proposal). An overview of the proposal is shown in Figure 1.1.

The proposal is needed to improve the road safety and traffic capacity along this section of road and would be consistent with other road improvement activities along the Great Western Highway.

Key features of the proposal are described in Section 3 of this report.

STUDY METHOD

The undertaking of the landscape character and visual impact assessment and the finalisation of the concept design has been an iterative process which has enabled the concepts to be refined as they were developed, thereby reducing and mitigating the potential visual impact wherever possible.

The method used to undertake this study follows the ‘Guideline for Landscape Character and Visual Impact Assessment’ (Roads and Maritime, 2013) and is summarised as follows:

- Undertaking an initial site visit and field investigation, reviewing relevant literature, analysing aerial photographs and topographic maps to understand the study area.
- Reviewing the engineering and urban design and landscape concept designs on a regular basis, and other supporting material to gain an appreciation of the project.
- Defining landscape character through a study area analysis, including a detailed site investigation.
- Identifying and describing landscape character zones and evaluating the proposal’s impact on them.
- Evaluating the impact of the project on these landscape character zones by combining the sensitivity of the zone and the magnitude of the works to provide an overall impact rating as indicated by the Impact Assessment Grading Matrix (Table 1.2).

- Identifying the visual catchment of the proposed works for the visual impact assessment.
- Selecting viewpoints within the visual catchment representing a range of different land uses.
- Evaluating the visual impact of the project by comparing the sensitivity of viewpoints and the magnitude of the impact of the project upon them to provide an overall impact rating as indicated by the Impact Assessment Grading Matrix.
- Identifying further urban design and landscape opportunities and methods of mitigating adverse visual impacts, both within and outside of the project scope, for consideration in the detail design phase of the project.

The methods used to assess landscape character impact and visual impact are described in Chapter 5 and Chapter 6.

		MAGNITUDE			
		High	Moderate	Low	Negligible
SENSITIVITY	High	High Impact	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-Low	Negligible
	Low	Moderate	Moderate-Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Figure 1.2: Impact Assessment Grading Matrix.

2. CONTEXTUAL ANALYSIS

2.1 LOCATION

The study area for this Landscape Character and Visual Impact Assessment Report is located on the Great Western Highway at Mount Victoria, on the western edge of the Blue Mountains, approximately 135 kilometres west of Sydney (Figure 2.1).

The Great Western Highway and the Main Western Railway Line form the primary transport corridors through the Blue Mountains, connecting Sydney to the Central West of New South Wales. Between Penrith and Lithgow, the highway is the major road freight, tourist and commercial link in the region. At the same time, it also provides the principal road access between the towns and villages along its route in the Blue Mountains. The Bells Line of Road is the only other regional road through the Blue Mountains, connecting Lithgow to Windsor.

The Great Western Highway traverses a landscape that has considerable natural, cultural, scenic and historical values. In general, the highway consists of a winding road travelling through discrete urban developments that are separated by rural lands and natural bushland. Located on the main east-west ridge through the Blue Mountains, the highway is situated between the northern and southern sections of the Blue Mountains National Park, which forms part of the Greater Blue Mountains World Heritage Area.

The Mount Victoria Village safety upgrade is approximately 2.3 kilometres in length, extending through bushland from just north west of Browntown Oval, then through the village to the Fairy Dell Road intersection (Figure 2.2).

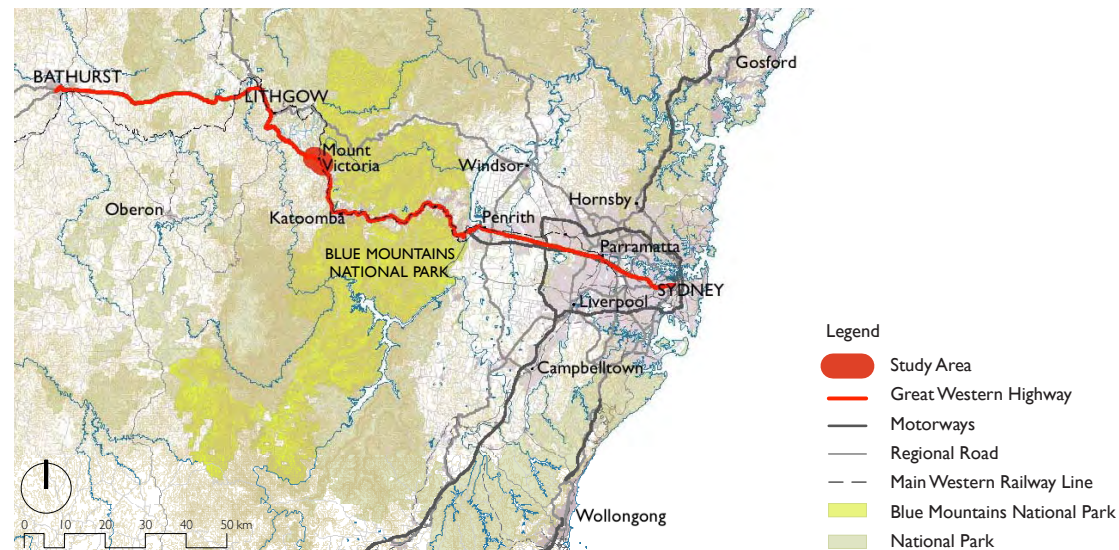


Figure 2.1: Regional context of the study area.

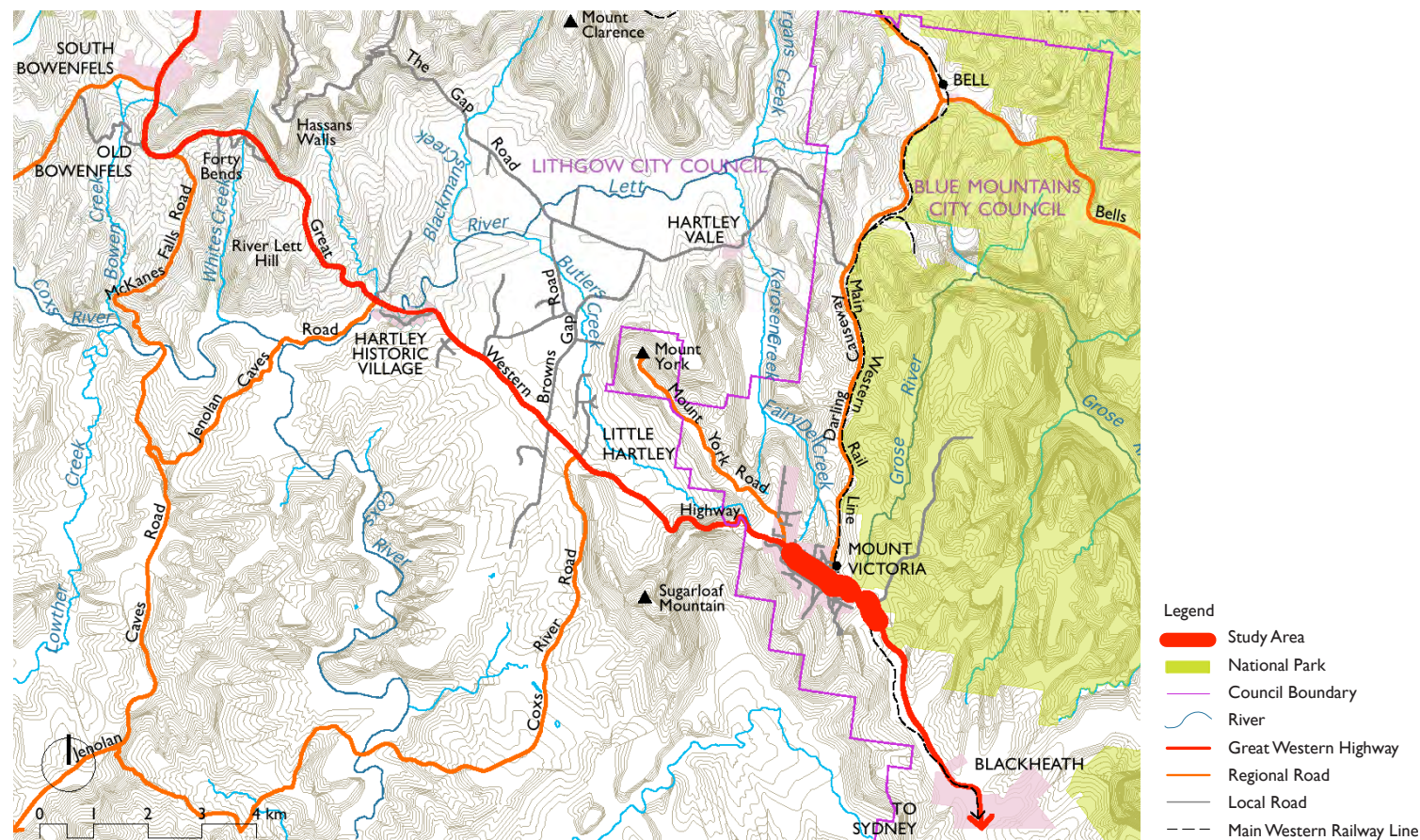


Figure 2.2: Local context of the study area.

2.2 LANDFORM AND TOPOGRAPHY

Mount Victoria is located on an escarpment plateau extension of the Mount York ridgeline where the terrain falls away steeply on all sides.

The Great Western Highway has been constructed to follow the gently undulating topography of the study area (refer to Figure 2.3). Even though there has been a moderate degree of modification to the landscape (in terms of cut and fill embankments) to the eastern end of the study area, the associated visual impact of the existing road on the surrounding countryside is relatively low. For the remainder of the study area, the highway travels through the highly modified village of Mount Victoria, generally along existing levels. The minor topographic changes are helped by the relatively narrow footprint of the existing carriageway, consisting of only one lane in each direction, with occasional overtaking or turning lanes and narrow shoulders.

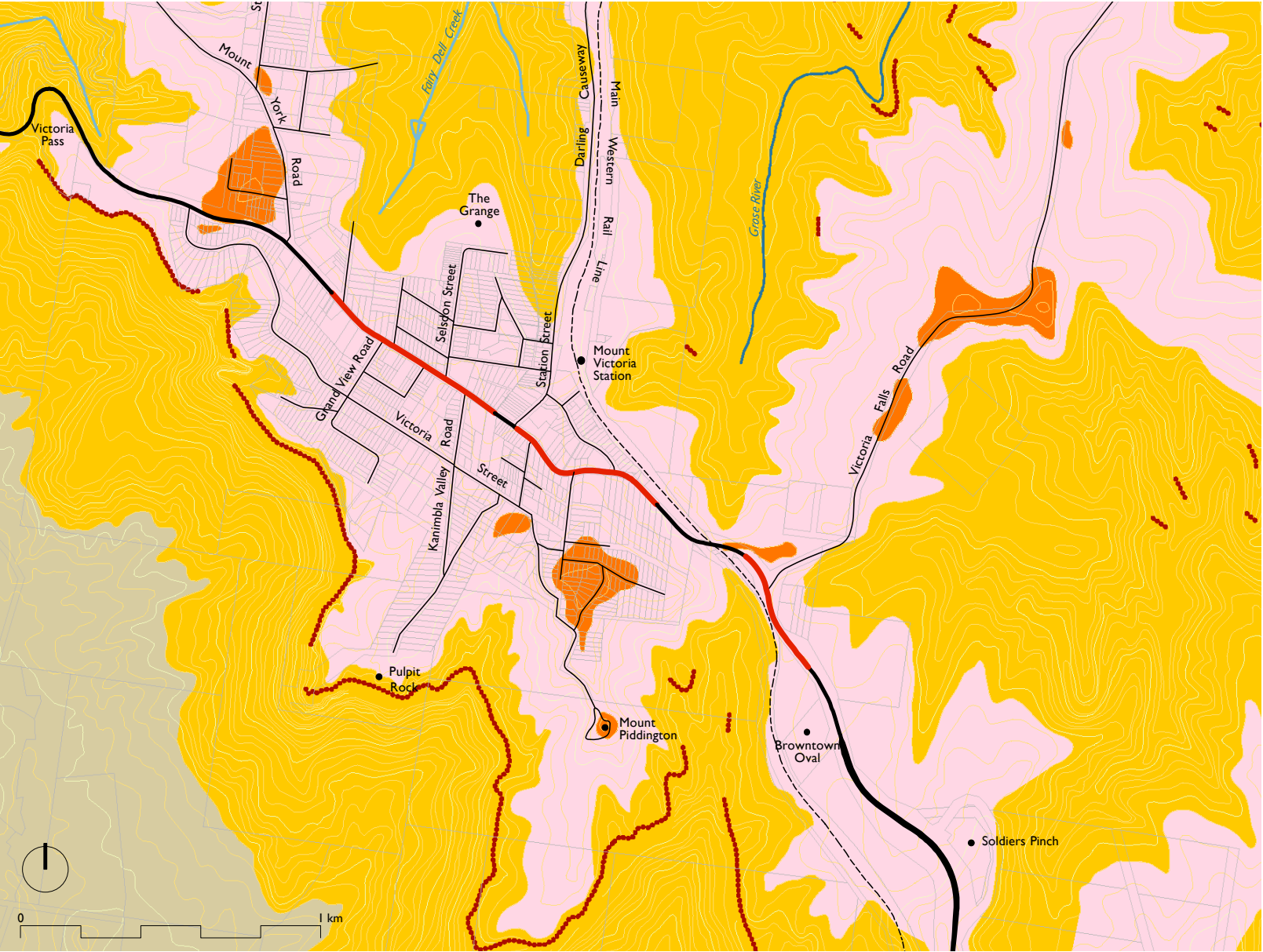
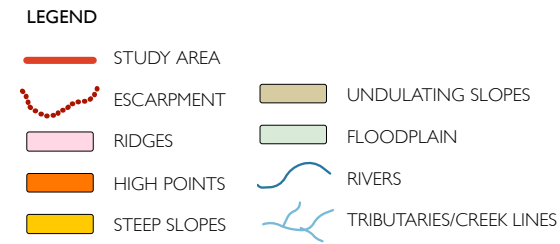


Figure 2.3: Landform and topography of the study area.

2.3 GEOLOGY

The underlying geology of the study area is a key contributor to its dramatically varying topography. Narrabeen Group sandstone and Illawarra Coal Measures (shale) underlie the distinctive escarpment and massive sandstone cliffs at Mount York (refer to Figure 2.4).

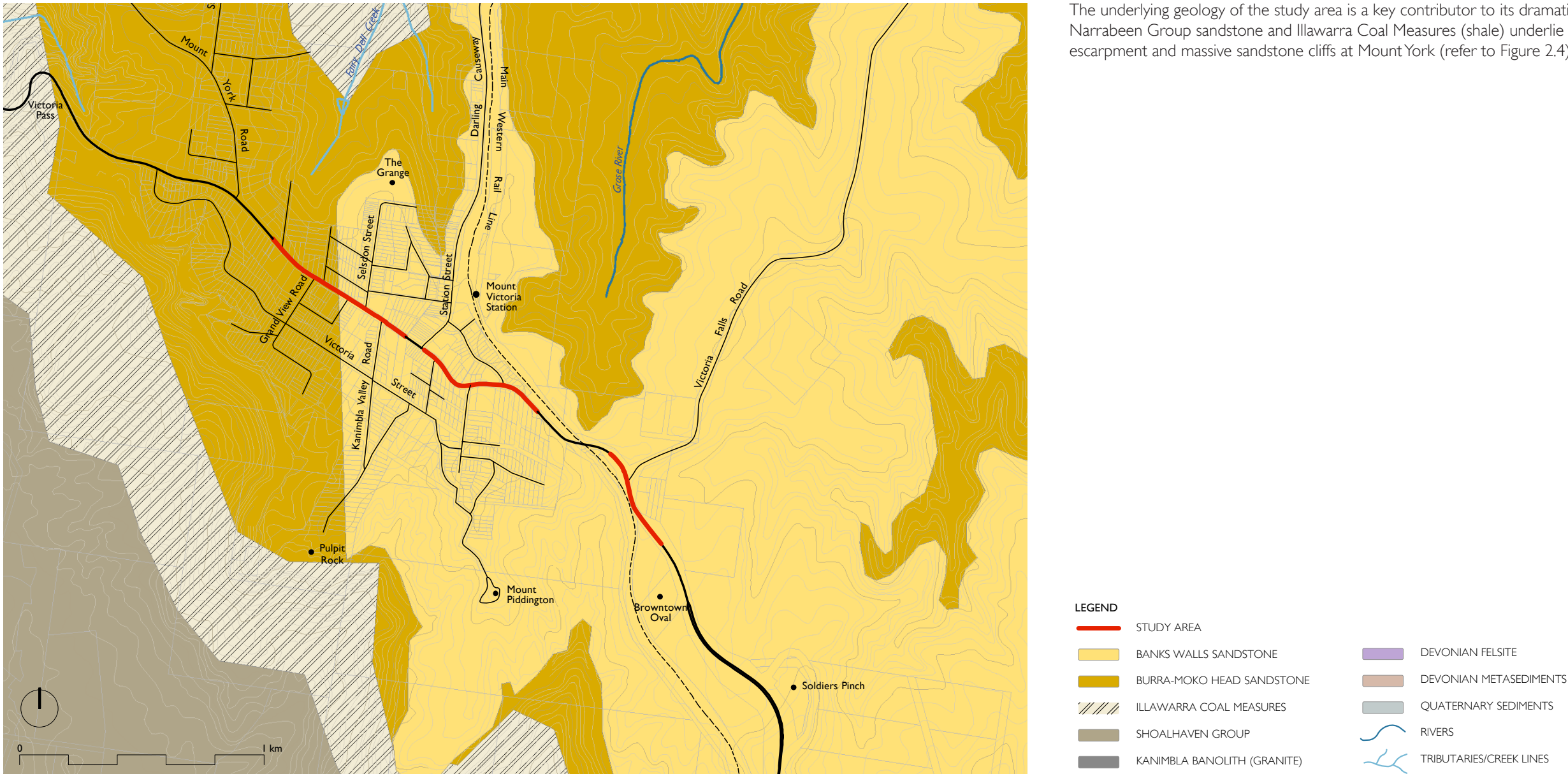


Figure 2.4: Geology.

2.4 HERITAGE

Mount Victoria is located on an escarpment plateau extension of Mount York, the site of a camp on the original Blaxland, Wentworth and Lawson 1813 crossing of the Blue Mountains. The area was originally marked as One Tree Hill on an early map dating from 1834 by the Surveyor General, Sir Thomas Mitchell. After the railway station was opened in 1869 the town became known as Mount Victoria. The town's name was officially changed after the first Post Office was built in 1876.

The township of Mount Victoria, and adjoining areas have many local and state significant historic buildings, structures and road alignments (Mount Victoria to Lithgow Alliance, 2012. Non-Aboriginal Heritage. Preferred Route Corridor, Great Western Highway Upgrade, Mount Victoria to Lithgow) as shown on Figure 2.5. These include, but are not limited to:

- Central Mount Victoria Urban Conservation Area (State significance).
- Gatekeepers Cottage (1868).
- Abutments of the Rail pedestrian bridge.
- Toll Bar House (1849 - State significance).
- Karawatha House.
- Weatherboard cottages, Exeter, Sunnihi and Acom.
- Imperial Hotel (1878).
- Victoria Cottage, Marthaville, Weatherboard shop and cottage.
- Post Office (1876).
- Mount Victoria Memorial Park.
- Mount Victoria Gallery, Cherished Belongings, Brick shop building.
- Selsdon, Larsens Cottage and St. Peter's Church of England (1874).
- High Lodge.
- Alignment of Lockyer's Pass and Mitchell's Pass (follows existing highway).
- Alignment of Cox's Pass (follows Mount York Road).

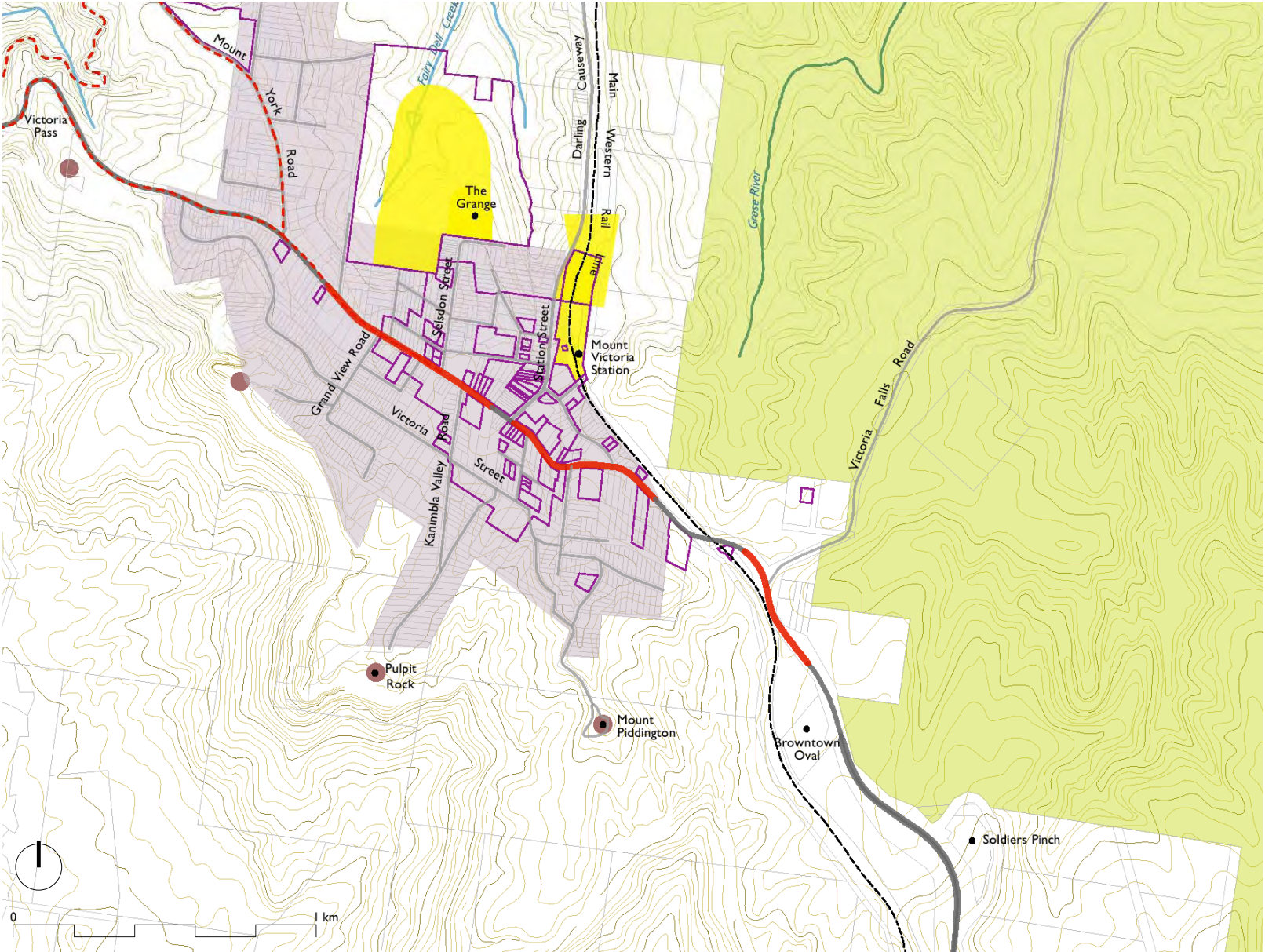
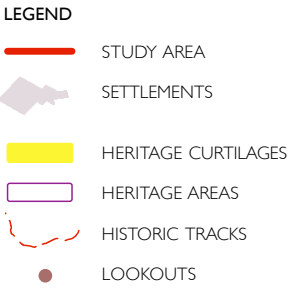


Figure 2.5: Heritage.

2.5 CULTURAL AND SCENIC VALUES

The township of Mount Victoria lies on a ridge that marks the eastern extent of the Blue Mountains National Park and the transition to the western plains of NSW to the west via Victoria Pass. The township is surrounded by densely vegetated slopes of Fairy Bower Reserve to the north, Mount York Reserve to the west, Fairy Dell Creek to the north and the Blue Mountains National Park to the east and north. There are a number of lookouts located on the escarpments south of the township including Mount Piddington, Pulpit Rock, Sunset Rock and Mitchell's Ridge which afford spectacular and panoramic views to the south and south west.

Mount Victoria has a number of important heritage listed buildings and properties which form landmarks along the highway, approach roads and in the local area. The railway station, with its heritage listed sandstone buildings, provides a key entry point for visitors to the township and is an important local landmark.

Mount Victoria Memorial Park and Browntown Oval provide for recreational and sporting opportunities.

The combination of natural and cultural scenic qualities with the abundant local heritage values establishes a unique identity to the area (refer to Figure 2.6). These values have a special meaning and provide a strong sense of place for the local residents as well as visitors and through traffic approaching and leaving the Blue Mountains National Park and beyond.

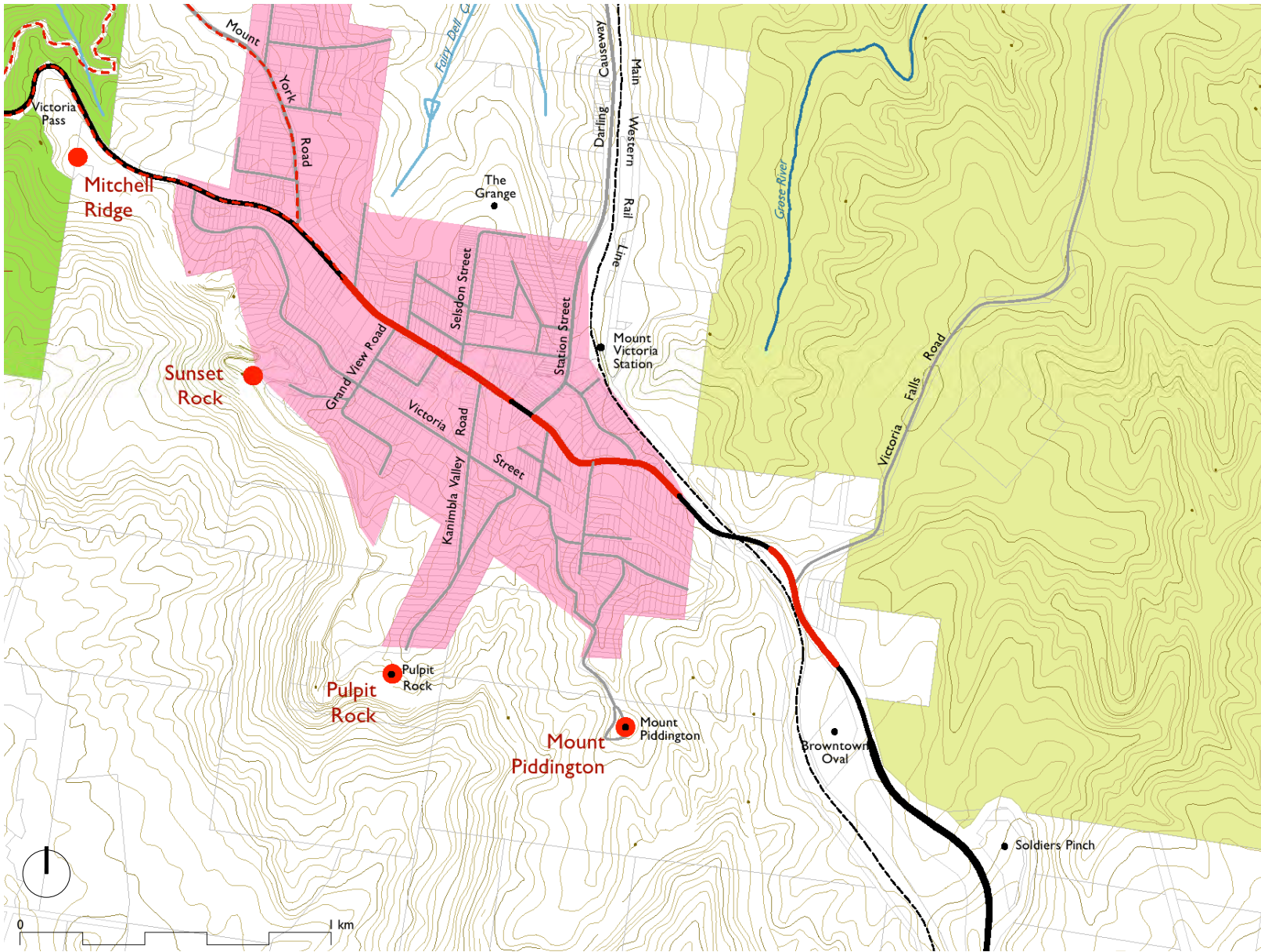


Figure 2.6: Cultural and scenic values.

2.6 LAND USE AND SETTLEMENT PATTERNS

The land use of the study area comprises a limited number of commercial based properties, along with educational and community facilities. The land use pattern generally reflects the historically central role of the Great Western Highway on the village of Mount Victoria. Residential properties comprise the remainder of the area, many lining the route of the highway (refer to Figure 2.7).

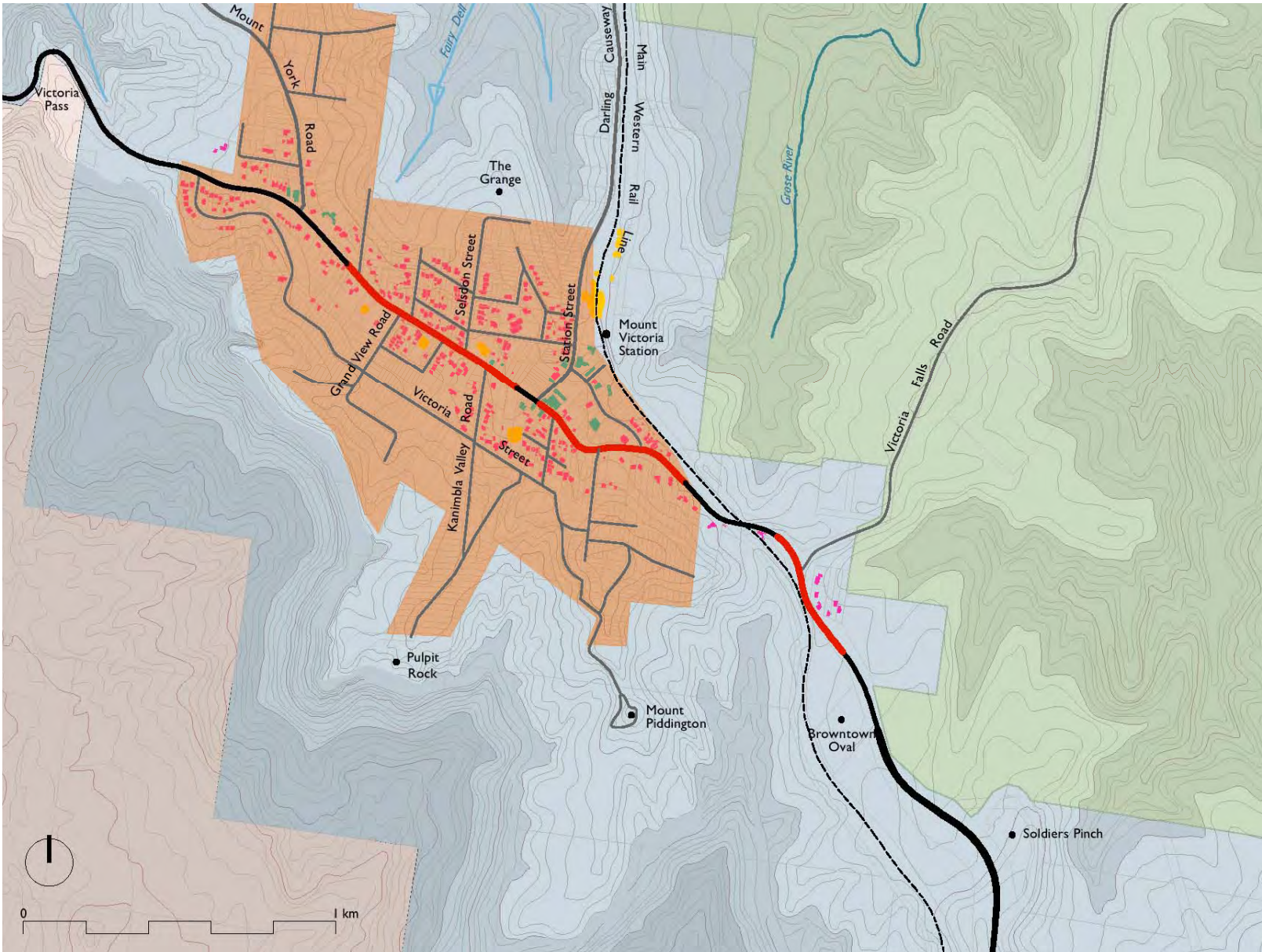


Figure 2.7: Settlement patterns.

2.7 TRANSPORT NETWORK

The existing transport infrastructure consists of the Great Western Highway and the Main Western Railway Line (refer to Figure 2.8). Traffic performance of the existing highway through the village is limited in some areas by tight curves, inconsistent grades, sub standard intersections and local traffic turning movements. Rail capacity is constrained by freight and passenger rail having to share the same track.

The Darling Causeway and Harley Avenue provide important connections to Bell and the The Bells Line of Road to the north which accommodate local and through traffic movements, but also a high proportion of heavy vehicles.

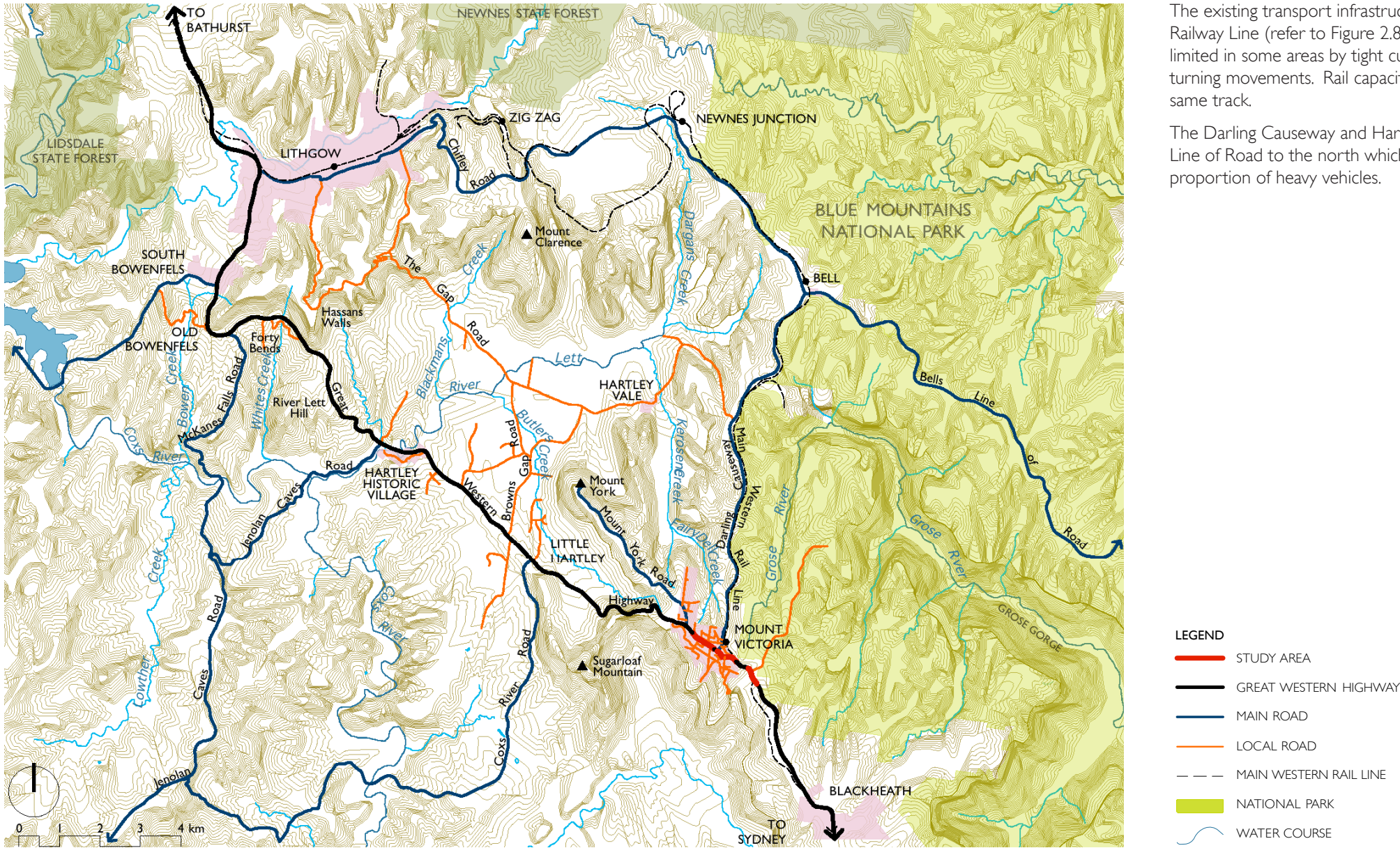


Figure 2.8: Transport network.

