CENTRAL HIGHLANDS COUNCILS

People. Places. Productivity.

CENTRAL HIGHLANDS REGIONAL TRANSPORT STRATEGY

December 2014

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EXECUTIVE SUMMARY

Context and Background

The Central Highlands Regional Transport Strategy is an evidence-based strategy that provides a tool for implementation of the transport frameworks established by the Central Highland's Regional Strategic Plan and Regional Growth Plan.

The strategy is owned by the Central Highlands Councils, comprising the municipalities of Ararat, Ballarat, Central Goldfields, Golden Plains, Hepburn, Moorabool, Northern Grampians and Pyrenees. It has been prepared with assistance and input from the Department of Transport, Planning and Local Infrastructure, VicRoads and Public Transport Victoria.

Priorities

The strategy's key priorities are:

- **Provision of enhanced rail connections between Melbourne, Ballarat and Ararat, with the extension of suburban services to peri-urban areas;**
- **Western Highway duplication to Stawell, including bypasses of Beaufort and Ararat, upgrade of the highway to freeway standard between Leigh Creek and Woodmans Hill, and removal of at-grade crossings between Deer Park and Melton;**
- **Development of north-south arterials through Bacchus Marsh, including upgraded connections to the Western Freeway;**
- **Provision of Ballarat Western Link Road Stages 2 and 3;**
- **Investigate upgrading the Western Highway from Ballarat (Ballarat Western Link Road) to the Port of Melbourne for High Productivity Freight Vehicles (Mass)**
- **Development of the Ballarat Freight Hub;**
- **Enhanced opportunities for rail freight movement through improvements to the Mildura – Geelong railway line; and**
- **Development of the Ballarat Airport Emergency Service Hub.**

Challenges

Given its variable urban and rural characteristics, the challenges for the Central Highlands region, as a result, are diverse. They can be summed up into four interconnected challenges:

- **Population and Economic Growth**, which places pressure on transport infrastructure that impacts on productivity and highlights gaps in transport connections in the region;
- **Congestion and Delay**, which restricts the opportunities for growth in some parts of the region. In particular, there are bottlenecks in the rapidly growing centres of Ballarat and Bacchus Marsh as well as in towns on the Western Highway;
- **Connections**, which are stretched or missing and force trips through congested areas, impacting productivity. This is particularly evident in the relatively constrained north-south connections through the region, where the current emphasis is on east-west connections to Ballarat and Melbourne;
- The region's **Safety and Well-being**, which is vulnerable to ageing and constrained infrastructure and ongoing threats associated with natural hazards.

The Strategy

The strategy aims to:

- **Support and accommodate population and economic growth** by:
  - Developing the transport network to accommodate future growth of transport demand;
  - Improving facilities for efficient freight transport to, from and through the region; and
  - Supporting tourism and the economic benefits it brings to the region. Apart from improvements to road, infrastructure and services, an important facet will be the improvement of opportunities for cycling and walking, such as through the development of rail trails.
- **Reduce congestion and delay** by:
  - Promoting alternative modes of travel;
  - Developing the road network around Ballarat to provide improved travel around the city;
  - Addressing traffic congestion in Bacchus Marsh by providing road links that provide routes that bypass the centre of the town.
- **Improve the connections between centres within the region and to areas of economic significance to the region** by:
  - Developing the transport network to accommodate future growth of transport demand;
  - Improving areas that constrain traffic speeds or cause delays;
  - Developing the freight transport network to provide transport to areas south of the region, particularly Geelong and Portland; and
  - Protecting the quality of the transport network asset from damage by improper use.
- **Protect the safety and well-being of transport network users and the broader community** through:
  - A program of reducing risk at level crossings;
  - A program of focussed upgrades of local roads to appropriate standards for accommodating the freight vehicles using them, especially to improve productivity in the first and last mile;
  - A program of improving safety at intersections that cause delays or where there are unacceptable crash risks; and
  - Improving emergency service access.

1 Introduction

1.1 Purpose

The Central Highlands Regional Transport Strategy is an evidence-based strategy which:

- Identifies priority transport projects of regional significance;
- Ensures the Central Highlands' transport directions are aligned with state, regional and local policy.

It provides a tool for:

- Implementation of the transport frameworks established by the Central Highlands Regional Strategic Plan and Regional Growth Plan;
- Future project planning and policy development;
- Advocacy to state and federal governments;
- Developing and prioritising funding applications.

1.2 Background and Strategic Context

There has been an increasing emphasis on regional planning over recent years. The *Central Highlands Regional Strategic Plan* (2010) provided an overarching vision and key directions for the region. This led to the development of the *Central Highlands Regional Transport Strategy* (2011) which sets out objectives, directions, actions and funding and policy priorities to meet the region's transport needs and challenges.

However since the development of these strategies, there has been a significant evolution in the state and regional transport and land use policy context with the development of:

- *Victoria – The Freight State 2013*: the Victorian Freight and Logistics Plan;
- Regional growth plans;
- *Plan Melbourne*: the Melbourne metropolitan planning strategy;
- *Network Development Plan – Metropolitan Rail*:
- *Victoria's Road Safety Strategy 2013 – 2022*;
- *Cycling into the Future 2013-23:* Victoria's cycling strategy.
- *Victoria's Trails Strategy 2014-24*

This strategy therefore builds on the strategic directions set by the Regional Strategic Plan and Regional Growth Plan and the detailed proposals of the 2011 Regional Transport Strategy to ensure the region's transport directions are aligned with current policy and can help meet identified challenges.

The strategic policy context and summary of key transport issues confronting the region are summarised in the background report which accompanies this strategy.

1.3 Ownership

The strategy is owned by the Central Highlands Councils, comprising the municipalities of Ararat, Ballarat, Central Goldfields, Golden Plains, Hepburn, Moorabool, Northern Grampians and Pyrenees. It has been prepared with assistance and input from the Department of Transport, Planning and Local Infrastructure, VicRoads and Public Transport Victoria.

1.4 Connections

The Central Highlands transport network does not operate in isolation of the wider state network. The Central Highlands is part of the wider Grampians region and has direct connections to the neighbouring Wimmera Southern Mallee, Barwon South West, Loddon Mallee South and broader state transport networks. A large component of the transport task within Central Highlands starts and finishes outside the direct area of the strategy, particularly at the ports of Melbourne and Geelong. The impacts these movements have on the transport network subject to this strategy need to be considered in the development of options and priorities.

1.5 Review

The Central Highlands Regional Transport Strategy will be reviewed in two years, or prior to the next Federal Election to ensure it reflects the goals and conditions of the communities of the Central Highlands region. Reviews will also take account of policy shifts, completed priorities, introduction of threats or challenges to the strategy, new opportunities for the region and identification of new projects.

1.6 Current Programs

This strategy strongly supports the retention and preservation of all current funding sources and programs. These programs are essential for the maintenance and development of the transport network in the region.

2 Vision

The vision for the Central Highlands is **to provide a productive, sustainable and liveable region for its people.**

This strategy shares its vision with the Central Highlands Regional Strategic Plan and Central Highlands Regional Growth Plan.

The objectives of the Central Highlands Regional Transport Strategy also match the transport future directions set out in the Regional Growth Plan. Its objectives are to:

1. **Improve the capacity and functioning of the region's transport networks**
2. **Ensure access and connectivity between settlements within and external to the region**
3. **Provide for a safe, reliable and resilient transport network**
4. **Consider technological advances in the transport provision mix**
5. **Ensure amenity and useability**
6. **Develop freight precincts as places to collect and distribute goods**
7. **Understand and ensure efficient ways to transport products between producers and markets**

3 About the Central Highlands

The Central Highlands region is located immediately to the west of Melbourne and primarily runs along the spine of the Western Highway corridor between Bacchus Marsh and Stawell. With a population of almost 200,000 people, the region comprises three distinct parts:

- The eastern area within Melbourne's peri-urban hinterland. This area is experiencing significant growth pressure, particularly in Bacchus Marsh, whilst also being home to significant landscape, agricultural and environmental assets.
- The western area, which provides a rural setting based largely around broad hectare farming and established settlements experiencing limited population growth. This area includes the Grampians National Park.
- Ballarat, which is the third largest city in Victoria and has a significant influence on towns in its hinterland, including Smythesdale, Beaufort, Creswick and Ballan.

The area included within this strategy comprises the municipalities of Ararat, Ballarat, Central Goldfields, Hepburn, Moorabool, Northern Grampians, Pyrenees and the northern parts of Golden Plains Shire (those areas north of Lethbridge). Whilst Ballarat is the dominant settlement in the region, there are a number of large towns which service their surrounding districts including Bacchus Marsh, Ararat, Maryborough, Stawell and Daylesford.

The Central Highlands has a strong heritage including Aboriginal culture and 19th century goldfields. It features major environmental assets such as the Grampians and Brisbane Ranges National Parks and notable tourism precincts such as the Daylesford-Hepburn spa country. It also has a relatively diverse economy featuring agriculture, manufacturing, mining and a range of higher order services. Ballarat includes specialisations in information technology, health services and higher education.

The central location of the region within Victoria means the Central Highlands has good connections to surrounding regions. This includes the major cities of Melbourne, Geelong and Bendigo, which are all within an hour and a half travel of Ballarat. There are also direct rail and road links to three major south coast ports at Melbourne, Geelong and Portland.

Regional snapshot

Largest towns (2011)	• Ballarat – 85,314 • Bacchus Marsh – 14,779 • Maryborough - 7139	• Ararat – 6,906 • Stawell – 5,655 • Daylesford – 3,294
Projected LGA population change 2011-2031 (including average annual change)	• Ararat – 1,885 (0.7%) • Ballarat – 31,037 (1.4%) • Central Goldfields – 1,196 (0.4%) • Golden Plains (north-west only) – 8,213 (1.1%)	• Hepburn – 3,551 (1.1%) • Moorabool – 14,028 (2.0%) • Northern Grampians – -51 (0%) • Pyrenees – 1,008 (0.7%)
Most significant economic sectors (Gross Value Added, 2012)	1. Health care and social assistance 2. Manufacturing 3. Construction	4. Education and training 5. Agriculture, fishing and forestry 6. Retail
Key tourism precincts and assets	• Grampians National Park • Daylesford Spa Country	• Pyrenees winery region • Goldfields heritage, including Ballarat
Largest commodities for Grampians region[1]	1. Grain 2. Forestry (logs) 3. Meat	4. Mineral sands 5. Livestock 6. Horticulture

[1] Includes Wimmera councils

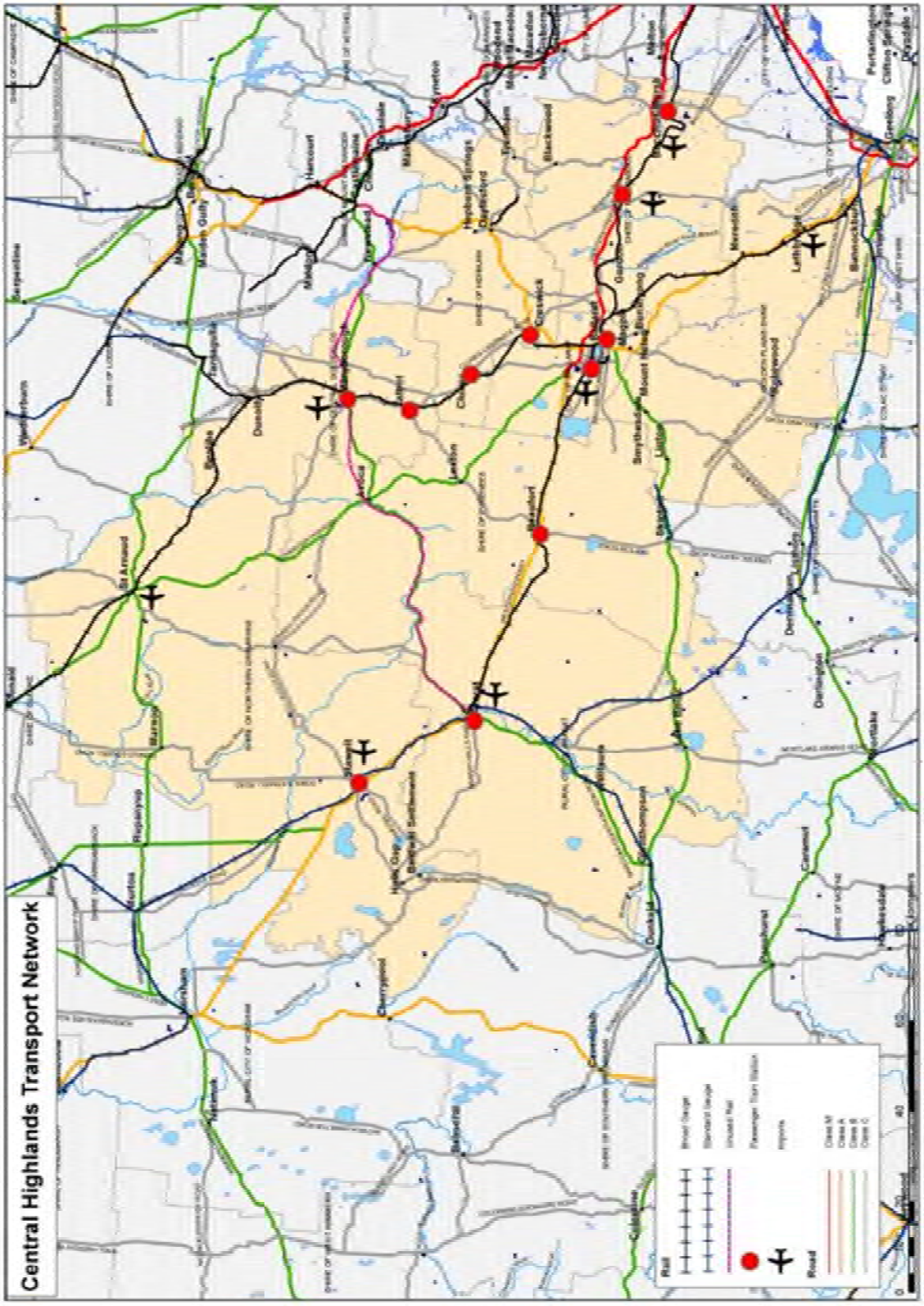

Figure 1: Existing Central Highlands transport network

4 Strategy Approach

Provision of transport infrastructure needs to be focussed on meeting the challenges in a way that is consistent with the *Central Highlands Regional Growth Plan*'s principles and, in particular, with the Transport Strategy objectives listed in Section 2. To achieve this focus, solutions will:

- Improve the capacity and functioning of the region's transport networks
- Ensure access and connectivity between settlements within and external to the region
- Provide for a safe, reliable and resilient transport network
- Consider technological advances in the transport provision mix
- Ensure amenity and useability
- Develop freight precincts as places to collect and distribute goods
- Understand and ensure efficient ways to transport products between producers and markets.

Given its variable urban and rural characteristics, the challenges for the Central Highlands Region, as a result, are diverse. They can be summed up into four interconnected challenges:

- **Population and Economic Growth**, which places pressure on transport infrastructure that impacts on productivity and highlights gaps in transport connections in the region;
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- **Connections**, which are stretched or missing and force trips through congested areas, impacting productivity. This is particularly evident in the relatively constrained north-south connections through the region, where the current emphasis is on east-west connections to Ballarat and Melbourne;
- The region's **Safety and Well-being**, which is vulnerable to ageing and constrained infrastructure and ongoing threats associated with natural hazards.

Managing these challenges is critical to the delivery of the *Central Highlands Regional Growth Plan*'s principles around supporting economic development and population growth, capitalising on the close links to surrounding regions and ensuring integrated planning of growth and infrastructure.

The following four pillars of action have been identified to form the strategy's approach. These actions are closely interconnected. For example, reducing delays on roads encourages growth by attracting settlement and business, improves connectivity by reducing travel times and helps with the well-being of the community by providing improved travel times to places of work and recreation.

4.1 Provide infrastructure to improve opportunity for growth

The Regional Growth Plan aims to encourage economic growth and support population growth. The population of the Central Highlands region has grown over the past decade by an annual average of 1.5% per year. The Background Report shows that most of this growth is occurring in Ballarat, Moorabool and Golden Plains municipal areas, which have been growing at more than 2% per year.

Additional population and the associated economy that accompanies it fuels growth in traffic. The growth in population will be accompanied by a growth in freight traffic due to increased employment activity and the growing demand from other regions for food and materials. To put the projected growth of the Central Highlands region into scale, based on the estimated population and household growth of 1.5% and an average trip generation of 10 daily trips per household, the region will generate an additional 7,500 new person trips per day, the equivalent of a new two lane road every two years and a new train service every year (assuming current mode splits are maintained). In addition, growth in through-traffic of up to 2% per year, especially freight, will need to be accommodated.

Transport infrastructure is also required to allow residents and visitors to engage in economic activity in various centres. This requires adequate transport facilities between home and work, home and places of study and good access to places of commercial activity.

Facilities for all modes of transport need to be provided, as well as opportunities to change modes where required. It is likely that the travel will continue to be focussed on Ballarat and Melbourne as destinations. The growth will increase pressure on roads and public transport services connecting the region to these centres. In addition, improved productivity at ports and new transport interchanges will support continued growth of freight traffic.

Without improved and additional transport infrastructure, the economic and demographic growth of the region will be stifled. Loss of growth will lose the region business to other areas of the state and country.

Passenger rail patronage has experienced strong growth in all areas of the region, even where services are limited. The region generates nearly 70,000 additional rail trips every year. The Background Report shows that some Melbourne bound peak services are almost at capacity before they reach Melton, while some services out of Melbourne in the afternoon peak are almost at capacity when they leave North Melbourne. The likely additional demand for travel to and from Melbourne will require additional services and upgrades in infrastructure.

The transport strategy will also support tourism by promoting improved transport access to key tourism precincts identified in the Regional Growth Plan. These precincts include the areas around Ballarat, around Ararat and Stawell, and around Daylesford and Hepburn Springs.

4.2 Improve capacity of infrastructure to reduce delays

The Regional Growth Plan identifies Ballarat and Bacchus Marsh as areas of major growth. Bacchus Marsh is also identified in *Plan Melbourne* as a growing peri-urban area for Melbourne. Ballarat and Bacchus Marsh already experience congestion and require improvements in the capacity of the transport network in order to meet the goals of the Regional Growth Plan. These areas form bottlenecks for travel within the urban areas and on inter-regional north-south routes. Consequently, the capacity of the transport network in these areas needs to be increased to accommodate current demand and to cope with growth.

The growth of population in Ballarat and Bacchus Marsh and the growth in employment in Melbourne and Ballarat will encourage growth in the commuter demand for travel between Ballarat and Melbourne and Bacchus Marsh and Melbourne. Additional public transport capacity on the Ballarat – Melbourne corridor will play an important part in limiting the growth of private vehicle travel and reducing congestion on roads. It will also help to enhance the links between Melbourne and Ballarat and help to bring business, students and tourists to the Central Highlands.

The travel demand in and through the region is strongly focussed on Melbourne in the east and Geelong to the south east of the region. In addition, the urban areas of Ballarat and Moorabool municipalities generate significant traffic volumes. As a result there are delays to traffic in the urban areas caused by congestion and in the more rural areas caused by road geometry and location of highways through towns.

4.2.1 Urban Areas

Car and freight traffic travelling through the region connecting to or from Geelong generally travels east-west on the Western Highway and then accesses routes to the south including through Ballarat and Bacchus Marsh. The combination of the traffic generated within Ballarat and Bacchus Marsh and traffic travelling through those centres results in delay and congestion.

The Background Report shows that the heaviest demands on roads is generally east of Ballarat, including the arterials of Ballarat and Bacchus Marsh and the north-south roads from Bacchus Marsh to Geelong and from Ballarat to Geelong through Buninyong and Mt Helen.

4.2.2 Rural Areas

Delays in the more rural areas in the western part of the region have their roots in the geometry and form of the roads. Freight traffic, which is an important component of the traffic using the network, is slowed down by grades and turns and, most significantly, by slow sections of highway through rural towns such as Beaufort, Ararat and Stawell. While these affect mainly heavy vehicles, other traffic is slowed by lack of opportunity to overtake.

The Background Report shows that the Glenelg Highway, Midland Highway and roads between Bacchus Marsh and Geelong carry relatively large volumes of heavy and light traffic. On some lengths along these roads, there is a lack of overtaking opportunities due to the vertical and horizontal geometry of the road that may result in delays and/or unsafe driving actions.

The strategy proposes various actions to improve freight efficiency across the network.

4.3 Improve connections within the region and to other regions

4.3.1 Key Corridors

The Regional Growth Plan identifies the Ballarat – Melbourne corridor as an area with key transport links to surrounding regions and as a major transport corridor. Public transport capacity in this corridor is limited by current peri-urban and regional demands on the existing rail network. The plan also identifies the link from the region (especially Ballarat) to Geelong as an area of key relationship and a major transport corridor. There are also key transport corridors identified to the west of the region to Ararat and beyond, and northwards to Maryborough and beyond, and to Daylesford and Castlemaine and beyond.

Because of the dominating influence of Melbourne, the east-west routes have developed with increasing demand. However, north-south links have not developed to the same extent. The transport network connecting the region to Geelong and the coast needs to be enhanced in order to provide efficient transport to the ports of Geelong and Portland and to encourage round trip tourist journeys from the coast through the designated tourism areas of the Central Highlands region.

The Western Highway is the backbone of the region's transport network and is the major road connecting the region with regions to the west and to Melbourne. It is a major facility contributing to the growth of the region's economy, supporting freight transport between producers and ports and between ports and consumers. In some areas, road geometry and the location of towns on the Western Highway constrain this travel and cause delays to the efficient transport of goods. Upgraded infrastructure in these areas will improve the efficiency and remove the delays.

4.3.2 Public Transport

Public transport connectivity is constrained by a limited number of services, especially for towns like Maryborough, where the time and frequency of services preclude a return day trip from Melbourne/Ballarat to Maryborough by rail. This also discourages tourist traffic. Additionally current rail passenger services do not provide for communities west of Ballarat to easily access employment, education and services in Melbourne. Connectivity of passenger rail services between the region and Melbourne are limited by the operation on a single line that relies on passing loops for services in both directions. Counter-peak services are severely constrained as a result. Some lines have no passing loops, limiting services, in effect, to a shuttle.

Connectivity of rail services for freight is constrained by the different gauges of rail lines. This problem affects passenger transport as well as freight transport.

Regional coaches supplement some rail services and connect most of the centres in the region. However the frequency of services is highly variable and some operate at only one service per day.

Local buses can be circuitous and the frequency of service is highly variable. While these services provide a social service, faster and more direct services would benefit commuters. Only in Ballarat is

there a comprehensive service, although new routes have also been implemented in Bacchus Marsh. Bus routes may need to be reviewed regularly to ensure that services are accommodating growth.

Approximately 42% of the population of the region comprises either school-going children or people of retirement age. This proportion is expected to increase to 46% by 2041. These cohorts of the population require good transport links to schools, sporting facilities, aged care facilities, health and community care facilities. In addition, vulnerable sections of the community require access to care facilities, government support facilities and community support facilities.

4.3.3 Walking and Cycling

Walking and cycling tend, by their nature, to be shorter trips and therefore more local than regional. However, these modes can play an important part in providing access around relatively compact regional towns and connecting to other modes, particularly rail and bus or coach. Provision of safe pedestrian and cycling paths to significant transport interchanges would improve connectivity and improve the health of the community. In addition, increasing walking and cycling trips often reduces car trips which assist in reducing congestion. Provision of recreational walking and cycling facilities such as rail trails, encourages tourism, thereby assisting local economies and encouraging growth.

4.3.4 Other Regional Connections

One of the important issues for the Central Highlands is that due to its location, it is not the start or the end point for many freight movements, but rather a region which freight travels through on its way to markets. This is particularly the case with some commodities originating from the Mallee and Wimmera such as grain, mineral sands and horticultural products. North-south routes through the Central Highlands therefore have some significance for bulk commodity movements (grain, mineral sands and timber). Improved connections to the ports at Port of Melbourne, Portland and Geelong would also promote improved economic growth. Changes in the freight task, with an increasing reliance on larger heavy vehicles, means that some C class arterial and local roads are not fit for purpose.

Both road and public transport connections to the coastal areas of Warrnambool, Colac Otway and Corangamite have not developed at the same rate as links to Melbourne. Improvements of these connections will promote the expansion of tourist travel on the route connecting Melbourne, the Coast and the Grampians.

4.4 Promote the Safety and Well-being of the Community

There are several aspects to promoting the safety and well-being of the community. The transport network plays an important role in protecting the well-being of the community and in promoting the community's safety. The importance of providing efficient safe access to places of work, community services and recreation should not be underestimated. The transport network also plays an important role in emergency services for the region. It is especially important in the event of large scale bushfires or flooding, during which emergency access is critical and alternative modes of connection for affected communities need to be maintained.

Within the region, residents and industry need to be able to access key services. In some areas, the transport network may need enhancement to facilitate access to educational, welfare and health services, especially for disabled and disadvantaged members of the community.

In some rural towns, the heavy vehicle content of the traffic is out of scale with the town and represents a real or perceived threat to safety. Semitrailers or B-Doubles in small towns, even travelling at the speed limit, demand large swathes of road space, dwarf roadside developments and detract from the liveability of the area. They are also associated with noise and pollution.

5 Priorities

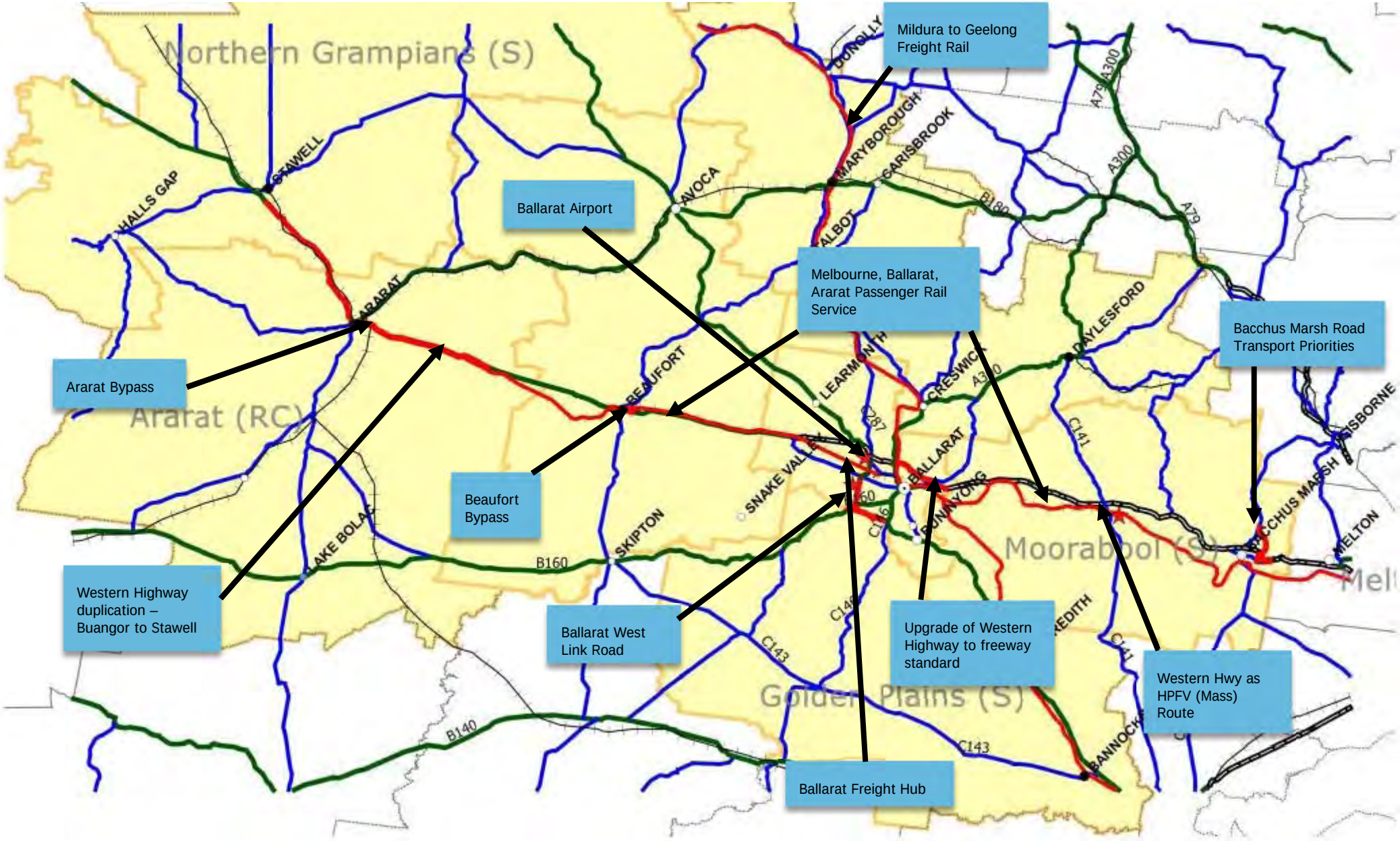
A range of projects across all modes of transport has been identified and assessed in the development of this strategy (see Appendix A). The region's priorities for developing the transport network and supporting state and regional strategies and policies are presented in this section. The priorities are based on the impact that each project will make on supporting the growth and development of the region, particularly in relation to the principles outlined in the *Central Highlands Regional Growth Plan.*

The priorities have been based on a robust assessment undertaken in the development of this strategy. The assessment has examined the economic, social and transport network impact of projects, their regional significance, their links to regional strategies and the levels of commitment and planning. A full description of the ranking methodology is contained in the Background Report. Sensitivities of the rankings were tested and projects that ranked consistently in the top group were assigned to this strategy's priorities. Other projects are also identified in this strategy in Appendix A and although not included in the priorities, all the projects listed will help deliver this strategy's objectives. The ranking does not indicate a preferred order of timing or implementation of the various projects, but rather the overall expected regional impact.

Priority projects are:

- **Provision of enhanced rail connections between Melbourne, Ballarat and Ararat, with the extension of suburban services to peri-urban areas;**
- **Western Highway duplication to Stawell, including bypasses of Beaufort and Ararat, upgrade of the highway to freeway standard between Leigh Creek and Woodmans Hill, and removal of at-grade crossings between Deer Park and Melton;**
- **Development of north-south arterials through Bacchus Marsh, including upgraded connections to the Western Freeway;**
- **Provision of Ballarat Western Link Road Stages 2 and 3;**
- **Investigate upgrading the Western Highway from Ballarat (Ballarat Western Link Road) to the Port of Melbourne for High Productivity Freight Vehicles (Mass)**
- **Development of the Ballarat Freight Hub;**
- **Enhanced opportunities for rail freight movement through improvements to the Mildura – Geelong railway line; and**
- **Development of the Ballarat Airport Emergency Service Hub.**

These projects are described in more detail in the following sections. **Figure 2** shows the locations of these in the region.


Mildura to Geelong Freight Rail
Ballarat Airport
Melbourne, Ballarat, Ararat Passenger Rail Service
Bacchus Marsh Road Transport Priorities
Ararat Bypass
Beaufort Bypass
Western Highway duplication – Buangor to Stawell
Ballarat West Link Road
Upgrade of Western Highway to freeway standard
Western Hwy as HPFV (Mass) Route
Ballarat Freight Hub
Northern Grampians (S)
Ararat (RC)
Moorabool (S)
Golden Plains (S)
HALLS GAP
STAWELL
ARARAT
BEAUFORT
AVOCA
MARYBOROUGH
CARISBROOK
DUNOLLY
TALBOT
LEARMONTH
CRESWICK
DAYLESFORD
BALLARAT
SNAKE VALLEY
BUNNINGONG
LAKE BOLAC
SKIPTON
B160
B140
C143
C141
A300
A79
B180
287
MELTON

5.1 Enhanced Rail Connection between Melbourne, Ballarat and Ararat

There has been a significant growth in rail travel in the region over recent years. Forecasts suggest that rail patronage will grow by around 2% per year to 2041. Ongoing improvements to the Melbourne-Ballarat line will be necessary to provide the capacity and reliability to accommodate the anticipated growth.

Specific improvements identified for the rail line and services between Ararat and Melbourne include:

- Separation of regional and metropolitan rail services to provide reliability and frequency improvements through delivery of the Regional Rail Link;
- Additional frequency improvements through the staged delivery of Melton duplication and subsequent electrification;
- Station upgrades and increased parking capacity;
- Additional capacity between Ballarat and Melton, such as through the provision of additional passing loops and. in the long term, duplication on the Ballarat corridor;
- Increased rail passenger services from Ararat for commuters to more easily access employment, education and services in Ballarat and Melbourne.

The project will benefit commuters in the region travelling to Melbourne from the Central Highlands region by providing a more competitive travel mode with improved reliability. In addition, an opportunity exists to improve services in the opposite direction to provide commuter opportunities for Melbourne based workers and students to access work places in the Central Highlands. This will also allow for tourists to more easily undertake day trips by public transport into the Central Highlands to destinations such as Daylesford, Clunes and Maryborough.

5.2 Western Highway Improvements Package

The Western Highway serves as the principle interstate route between Victoria and South Australia and is the key transport corridor for Western Victoria. Currently, more than 5,500 vehicles travel the highway west of Ballarat each day including 1,500 trucks. This traffic is expected to double by 2025 necessitating a highway capable of safely carrying 780,000 trucks per annum. West of Stawell, the Western Highway carries lower volumes, around 4000 vehicles per day of which 1,200 are trucks. These volumes have grown at an average of 3.5% since 2003.

The 110km stretch of highway between Ballarat and Stawell has claimed 7 lives and more than 80 casualty crashes in the five years to the end of June 2013. The stretch of highway east and west of Beaufort is worse than the state average for road crashes.

Heavy vehicle volumes travelling through towns also reduce the amenity and liveability of those towns. Consequently, there are economic and social pressures to reduce the impact of traffic volumes on towns as well as to provide opportunities for safe and efficient transport of goods and people.

This priority package includes:

- The duplication of the Western Highway between Buangor and Stawell;
- Provision of a bypass of Beaufort;
- Provision of a bypass of Ararat;
- Upgrading the Western Highway to freeway standard between Leigh Creek and Woodmans Hill;
- Removal of at-grade crossings between Deer Park and Melton.

The duplication of the highway between Buangor and Stawell will improve the safety and efficiency of the highway, it will remove the incidence of head on collisions, which tend to be more severe than other crashes, and therefore improve the safety and well-being of the users of the road.

The bypasses of Beaufort and Ararat will also reduce delays in travelling through towns. In addition, the well-being of the residents of Ararat and Beaufort will be improved.

The section of the Western Highway from Leigh Creek to Woodmans Hill does not have freeway status and has a reduced speed limit of 80km/hr in sections. This section of road has at-grade intersections, direct frontage on the highway, lower reduced speed limits, poor construction and maintenance standards and a history of severe crashes.

Removal of at grade crossings between Deer Park and Melton will improve safety and also remove the need for reduced speed limits, impacting on freight efficiency.

The Central Highlands region will benefit from the reduced delays for travel along the Western Highway, improved efficiency of transport and improved amenity in towns.

5.3 Road Transport Priorities around Bacchus Marsh

Bacchus Marsh is a regional centre experiencing rapid population growth. Its arterial road network is however significantly constrained outside of the Western Freeway, with much of the town's local traffic and north-south regional traffic funnelled through a single intersection in the town centre that is experiencing significant congestion and queuing.

An eastern bypass of Bacchus Marsh from Geelong Road to Gisborne Road with a freeway interchange (possibly via the extension of Woolpack Road) would alleviate congestion at the Bacchus Marsh-Gisborne Road interchange and service the sand quarries on Gisborne Road that generate in excess of 250,000 heavy vehicle movements annually. The establishment of a road corridor for this link is critical so that alignments can be set and land use determined into the future. Improvements to Woolpack Road will also support the development of a new employment precinct at Parwan.

Similarly, a western route road needs to be established with freeway connection to support the substantial residential growth expected in Bacchus Marsh. The extension of Halletts Way at the north and south ends would provide this link and help cater for growth and alleviate congestion on Grant Street and Gisborne Road currently experiencing congestion and queuing.

Forecasts of traffic through the Bacchus Marsh area indicate severe congestion and delays through the Bacchus Marsh town centre. These delays can only be ameliorated by significant upgrades of the road network and effective traffic management. The impact would be principally on the Gisborne Road/Grant Street corridor, which would require duplication to accommodate forecast volumes and signalisation of some of its intersections to adequately control delays in the town centre.

The proposed project includes:

- Planning for and construction of an eastern bypass of Bacchus Marsh from Geelong-Bacchus Marsh Road to Gisborne Road with a freeway interchange (possibly via the extension of Woolpack Road) and reserving the land;
- Upgrading Woolpack Road between the Geelong-Bacchus Marsh Road and Bacchus Marsh Road to 'C' class road standard;
- Extension of Halletts Way at north and south ends and providing east facing freeway ramps;
- Development of north-south arterials in Bacchus Marsh, including:
    - signalisation of intersections;
    - duplication of carriageways;
    - safety upgrades to the Gisborne Road/Grant Street.

The region will benefit from these improvements in the road network because they will relieve the Bacchus Marsh bottleneck and support the development of one of its key designated growth settlements. In particular, transport of freight to and from the centres and ports of Melbourne and Geelong are often held up by intermediate pickups and drop-offs in Bacchus Marsh. In addition, safety of travellers on the roads will be improved. It will also help provide for additional employment growth which will reduce the need for residents to commute for work, thus enhancing the sustainability of the region.

5.4 Ballarat Western Link Road – Stages 2 and 3

The Midland Highway is the strategic road link connecting the four largest regional centres in Victoria being Geelong, Ballarat, Bendigo and Shepparton. It passes through the centre of Ballarat including the CBD. There are 11 sets of traffic lights which restrict the efficient movement of freight.

The Ballarat West Growth Area is the region's major focus for population growth for at least the next 20 years. High forecast growth of traffic volumes through western Ballarat indicates severe congestion and delays, especially around the junction of Gillies and Sturt Street. In addition, the indirect connection between Cuthberts Road, Sturt Street and Gillies Street exacerbates the delays.

This project involves extending the Ballarat Western Link Road southwards to Greenhaighs Road, the Glenelg Highway in western Ballarat and south west to the Midland Highway. It is a major proposed link that will accommodate the future travel demand generated by Ballarat West with its significant forecast population growth and provide an alternative access to the Midland Highway through Ballarat for cross-regional traffic.

The City of Ballarat Review of Future Industrial Areas (2009) identifies the Ballarat West Employment Zone (BWEZ) area as the central location for the future industrial growth of Ballarat. With close proximity to infrastructure and established industry uses, BWEZ has inherent locational strengths which are strengthened by the provision of the Western Link Road.

The project will:

- Provide an important road link between the City of Ballarat and its surrounding areas;
- Serve new developments in the Ballarat Employment Zone and Airport precinct and residential developments in Ballarat West

5.5 Freight Transport

The region's central location within Victoria means it is to service the needs of freight transport both emanating from and travelling through the region to external markets. With demand for transport between Adelaide and Melbourne and the need for producers in the region and neighbouring regions to transport their produce to markets and ports, including Geelong and Portland, freight transport facilities are an important requirement for an integrated transport strategy. The priority freight projects involve:

- Improvements to the Mildura to Geelong rail line;
- Provision the Ballarat Freight Hub; and
- Investigating upgrades to the Western Highway for High Performance Freight Vehicles (Mass).

5.5.1 Enhanced opportunities for Rail Freight by Improvement of Mildura-Geelong Rail Line

There is a strong need for the transport of agricultural goods from the Central Highlands region and neighbouring Victorian regions to ports at Melbourne, Geelong and Portland. The improvements to the Mildura to Geelong rail line will result in:

- Conversion of the broad gauge rail to standard gauge (along a route to be determined);
- Increasing the strength of the rail track to allow higher axle loads;
- Some rail construction.

5.5.2 Development of Ballarat Freight Hub

The proposed Ballarat Freight Hub is a 16 hectare road freight handling facility designed to reduce business costs by improving transport productivity, while servicing current and future freight demands for the City of Ballarat and the surrounding region. It will be located in the Ballarat West Employment Zone (BWEZ) to take advantage of all modes of transport. It will accommodate High Productivity Freight Vehicles (HPFV) with access from the new Western Link Road and will deliver freight

efficiently to Melbourne via the Western Highway. It has been designed to avoid "last mile" impediments for freight operators.

Construction of the new Freight Hub removes an identified barrier to growth for existing businesses, and creates a competitive advantage to attract new industry and new jobs. Further, relocation of the Freight Hub to Ballarat's West will also remove heavy vehicles from the city's CBD area, improve productivity for industry and create a safer local environment.

5.5.3 Investigate upgrading the Western Highway from Ballarat Western Link Road to the Port of Melbourne for HPFV (Mass)

The Port of Melbourne is an important destination for goods from Ballarat and the surrounding region. The increasingly competitive markets need continuous improvement in the efficiency of transport of goods. The larger and more efficient HPFV (High Productivity Freight Vehicles) provide one way for the increasing efficiency of transport.

Whilst the other ongoing upgrades of the Western Highway west of Ballarat have been designed for HPFVs, the accommodation of these vehicles in the Western Highway between Ballarat Western Link Road and the Port of Melbourne needs to be investigated. This will provide benefits to the whole region in terms of freight access along the Western Highway.

5.6 Ballarat Airport – Aviation Emergency Services Hub

The 18/36 North South runway at the Ballarat Airport cannot accommodate Multi Engine Air Tankers (MEAT'S), national air freight operations or Regular Passenger Transport (RPT). A runway extension is imperative to achieve optimum utilisation of the Ballarat Airport as a community and infrastructure asset for the Central Highlands region.

A key catalyst for runway extension is the provision of transport and connectivity of critical emergency services to the Central Highlands and wider Victoria region. The capacity to accommodate MEATS is integral to the future provision of state wide all hazards multi-agency emergency services from the Ballarat Airport.

The project will improve community safety, improve efficiency in emergency service provision, provide economic and performance efficiency benefits resulting from consolidated multi agency assets, relieve pressure on road and rail freight transport systems, help to relieve congestion at metropolitan airports and develop alternatives for express transport and promote industry around the airport associated with air transport infrastructure.

6 Future Strategies

The preparation of this strategy has identified a number of further strategies and investigations which will have broad benefits for the region and further develop the case for future network improvements.

6.1 First and Last Mile Freight Strategy

Many local and arterial roads play a key role in transporting goods both around and through the Central Highlands region. A number of these routes are not an appropriate standard for the current freight task, due in part to issues such as width, construction standard, bridges, culverts and alignment. In some instances these routes are unavoidable for users as they are the first and/or last mile of the freight journey.

The use of routes not fit for purpose has cost implications for both the freight companies using the routes in loss of productivity, safety and efficiency and the road controlling authority in increased construction and maintenance costs.

Through the development of this strategy, a number of routes have been identified that should be improved or upgraded to accommodate B-double and/or HPFV to improve efficiency and safety for freight movements and other users. However, it is critical that investment is prioritised and directed to areas of the network to serve the freight task in the most efficient and effective manner.

A First and Last Mile Regional Freight Strategy incorporating local road routes should be prepared and would consider the freight task for the region, including that freight that travels through the region. It would examine type and quantity of freight being moved, the mode and route it takes, factors that generate demand for freight and other relevant data. The strategy would consider both arterial and local roads and in particular address the routes that have been raised in the development of this strategy, as outlined in Appendix A.

6.2 Public Transport

Councils have identified the need for new, improved and/or expanded public transport services within the region, including public transport access to other parts of the state. In particular additional rail services between Ballarat and Maryborough, Ballarat and Ararat are high on the region's priority for public transport, along with extension of town bus services for Bacchus Marsh and Ballarat.

The opportunity for rail shuttle services between Ararat and Horsham and Ararat and Hamilton through to Portland are also on the region's agenda and will need a sound business case to be developed to progress further.

It will be important for the region to continue to work closely with Public Transport Victoria in the development of any regional public transport network development plans to ensure that the region's public transport needs are taken into consideration in all future public transport service reviews and planning with early implementation of bus services in growth areas.

6.3 Midland Highway

Capacity and safety improvements – south to Geelong, north to Daylesford

The Background Report notes that the Midland Highway carries relatively large volumes of traffic, heavy and light, in areas where the cross-section of the highway is less than optimal and that the highway has higher than average casualty crash rates. This highway is a key regional north-south connector from Geelong in the south, through Ballarat onto Daylesford and through to Castlemaine, Bendigo, Shepparton and Benalla before terminating at Mansfield.

There has been a number of generic highway improvements identified through the development of this strategy such as improving safety and efficiency at intersections, provision of additional overtaking lanes, and other Midland Highway enhancements. There is also a proposal for the duplication of Creswick Road (Midland Highway) from Howitt Street to the Western Highway.

VicRoads has a process in place for identifying road safety improvements along road sections of high risk and that have a crash history which meets eligibility requirements under a Safer Roads Infrastructure Program (SRIP).

Given the large volume of traffic and higher than average casualty crashes on parts of the Midland Highway and the importance of the route for tourist access to places such as Daylesford and Hepburn Springs and the south coast, and the general traffic and freight movements on the highway, it is suggested that a specific Midland Highway Action Committee be established to lobby for ongoing improvements to the highway.

6.4 Central Highlands Tracks and Trails

Most Central Highlands councils have various strategies that address tracks and trails within their boundaries such as bicycle or active transport strategies. These strategies identify a range of urban cycling opportunities and cycling tracks and trails across the region and are an important component of the transport needs. In the urban areas Principle Bike Networks are being identified to provide for increased cycling capacity.

There is an opportunity to develop a cross regional strategy that builds on the local plans and strategies to identify projects that have a wider regional focus, such as the potential for a Maryborough to Ararat rail trail, or extensions of the Ballarat-Skipton Rail Trail through to Golden Plains Shire Council area.

The development of a regional Tracks and Trails strategy, building on previous work undertaken by councils, DTPLI Transport and Sport and Recreation Victoria will be able to confirm and prioritise shovel-ready projects, determine a strategic approach to progressing projects through the project development cycle. It will also address barriers and bottlenecks to maximise investment for the region and spread across all municipalities while encouraging a collaborative approach to delivering cycling projects across the region. The strategy may also lead to the development of a Community of Practice to build capacity and share learning across the region and develop case studies to contribute to a state and national agenda.

6.5 Rail Crossing Upgrade / Removal Program

VicTrack's Rail Crossing Upgrade / Removal Program will guide the identified project for the development of a program of upgrade and/or removal of level crossings. This program identifies Lake Road in Stawell, Heinz Lane in Ballarat, Griffith Street in Stawell, Maryborough-Dunolly Road at Bet Bet, Andrews Lane in Maroona, Burnside Road in Bannockburn and Eurambeen Streatham Road as amongst the highest priorities for attention. This strategy supports the ongoing implementation of this program.

Appendix A: Full List of Projects

This appendix lists projects put forward by councils for inclusion in the Central Highlands Regional Transport Strategy. The projects were assessed for their regional impact and from this a list of regional priorities was identified, as discussed in Section 6. Some projects listed are 'shovel ready', whilst others require further planning or development to ascertain their feasibility. Regardless of their position, all projects will contribute to the implementation of the strategy and should be given further consideration as opportunities to further enhance the region's transport network arise.

NOTE

Estimated costs contained in this Appendix have been based on previous planning and design planning costings where available. Where these were not available, a best estimate based on current expectations and average costs of similar projects was made.

Actual costs may be significantly different when further information from investigative studies becomes available.

ROAD

Project title	Indicative Cost of Works	Project description
Duplication of Western Highway, Buangor to Stawell	$450m	Duplication of Western Highway, Buangor to Stawell to reduce delays caused by location of towns on the Western Highway and to improve road safety.
Development of Bacchus Marsh north-south arterials	$4m	Signalisation of intersections, duplication of carriageways and safety upgrades to the Gisborne Road/Grant Street.
Bacchus Marsh Eastern Bypass Cost quoted for Studies only	$200k	Planning for and construction of an eastern bypass of Bacchus Marsh from Geelong Bacchus Marsh Road to Gisborne Road with a freeway interchange (possibly via the extension of Woolpack Road) and reserving the land. Upgrade of Woolpack Road between the Geelong-Bacchus Marsh Road and Bacchus Marsh Road to 'C' class road standard.
Beaufort Bypass	$120m	The proposed works would involve the construction of a bypass around Beaufort, completing the duplication of the Western Highway between Stawell and Melbourne. As part of this, all at-grade rail crossings will be separated.
Ararat Bypass	$180m	The proposed works would involve the construction of a bypass around Ararat, completing the duplication of the Western Highway between Stawell and Melbourne. As part of this, all at-grade rail crossings will be separated.
Ballarat Western Link Road - Stages 2 & 3	$58m	This project involves extending the Ballarat Western Link road southwards to Greenhaighs Road, the Glenelg Highway in western Ballarat and south west to the Midland Highway.
Upgrade Western Highway to freeway between Leigh Creek and Woodmans Hill	$100m	Upgrade of the Western Highway to freeway standard between Leigh Creek and Woodmans Hill, including removal of at-grade crossings.
Improve safety and efficiency at intersections on major highways in the region **Investigate and identify intersections with safety problems** Quoted cost for investigations only – scope of works unknown at this stage	$200k	Investigate and identify intersections with safety problems. At intersections where there is a reduced safety of vehicles, especially with the interaction of cars and fast moving heavy vehicles, investigate the provision of channelisation for turning vehicles to protect the safety of road users.
Provision of additional overtaking lanes on major roads	$250k per OT lane	Identify suitable locations for the provision of frequent overtaking lanes and provide them on highways to lower the occurrence of severe injury overtaking crashes.

Project title	Indicative Cost of Works	Project description
Halletts Way extension, Bacchus Marsh	$14m	Hallets Way extension involves the construction of three main components: • easterly orientated freeway ramps where Halletts Way crosses the Western Freeway; • the extension of the existing Halletts Way north to Links Road; • the extension of the existing Halletts Way south to Griffith Street with a bridge across Werribee River and an intersection at Werribee Vale Road.
Mair Street Upgrade, Ballarat CBD	$11m	In order to enhance vehicle movements and provide for greater pedestrian amenity in the region's key activity centre, undertake significant upgrade to the Mair St route (Princes St North - Mair St - Doveton Street) to address traffic and pedestrian constraints associated with: • alignment, • capacity, • accessibility, and • safety. Also provides for the downgrade of Sturt Street to improve pedestrian movements.
Parwan – Exford Road and Greigs Road Corridor Quoted cost for studies only	$200k	The proposed project involves planning of the Parwan Exford Road / Greigs Road corridor as a route for regional freight transport. The project is proposed to support economic development in the area and potentially reduce the existing and forecast future traffic congestion experienced on existing road links and intersections within the Bacchus Marsh township.
Develop a rail crossing removal program Quoted cost includes only program development	$200k	Develop and implement a program of removal of level crossings to remove the potential for severe injury crashes.
Improved transport links to serve Ballarat West growth areas	$41m	Group of projects to improve access to and around Ballarat West and wider Ballarat areas for movement of goods and people, including: • Inner West Link Road (Learmonth Street - Wiltshire Lane and link to Midland Highway); • Increasing capacity of existing intersections at Gillies/Sturt and Gilles/Learmonth Road; • Improving access and cross sections of four feeder roads (Ballarat-Maryborough Road, Ballarat-Burrumbeet Road, Ballarat-Carngham Road & Glenelg Highway).

Project title	Indicative Cost of Works	Project description
Ballarat Eastern Bypass - Yankee Flat Road	$5m	An investigation into the upgrade of Yankee Flat Road, extension of Yankee Flat Road to both the Western & Midland Highways and a connection between Yankee Flat Road and Mt Clear to provide an eastern bypass of Ballarat city.
Diggers Rest - Coimadai Road corridor Quoted cost for studies only	$150k	Investigate opportunities to upgrade the Diggers Rest – Coimadai Road corridor to accommodate high productivity vehicles.
Stawell Bypass	$110m	The proposed works would involve the construction of a highway bypass around Stawell.
Duplication of Creswick Road (Midland Hwy from Howitt Street to Western Freeway)	15m	Duplication of Creswick Road (Midland Hwy from Howitt Street to Western Freeway) is proposed to accommodate increasing traffic volumes in the future and to provide a more desirable entrance to Ballarat.
Sunraysia Highway improvements	$10m	Improve pavement to eliminate roughness and implement measures to run-off road crashes, create overtaking lanes between Stuart Mill and Tanwood and between Lexton and Waubra.
Midland Highway enhancements Quoted cost for studies only	$120k	Midland Highway carries a large volume of traffic and has higher than average casualty crashes. The Midland Highway is an important route for tourist access to places such as Daylesford and Hepburn Springs and the south coast. Given these attributes it is suggested that a specific Midland Highway Action Committee be established to lobby for ongoing improvements to the highway.
Improve road links to Great Ocean Road Quoted cost for studies only	$200k	Investigate options for improving connections from Great Ocean Road to the Grampians Region.
Upgrade Warrayatkin Road, Ararat	$1m	The expansion of the Hopkins Correctional Centre at Ararat has made this an increasingly significant regional employment facility and destination for regional travel. There is a need to formalise Warrayatkin Road, which links the Western Highway to the prison, by widening and sealing the carriageway to cater for regional journeys to work.
Wind farm access	$1.5m per windfarm	Investigate potential access arrangements to the proposed wind farms in the Central Highlands region.
Western Freeway/Bungaree-Creswick Road interchange	$18m	Provision of an interchange on the Western Freeway with Bungaree-Creswick Road.

PUBLIC TRANSPORT

Project title	Indicative Cost of Works	Project description
Enhanced rail connection Melbourne, Ballarat and Ararat, including implementation of suburban rail services for peri-urban areas	±$440m in infrastructure $1.6m per year	Increased frequency and capacity on the Ararat / Ballarat - Melbourne rail line, including the duplication and electrification of the metropolitan rail line to the peri-urban areas of Melton & Bacchus Marsh and increased services between Ararat and Ballarat.
Bendigo-Ballarat-Geelong Public Transport Improvements	$760m - $935m + 12m-16m per year	Improved public transport along the Bendigo-Ballarat-Geelong corridor to further the outcomes of the Rail Revival Study. This could include enhanced coach services and improved rail service frequency between Ballarat and Maryborough to allow convenient day trips in both directions.
Enable day travel to Maryborough and goldfields towns by passenger rail from Melbourne	±$1m per year	The current passenger rail timetable for the Ballarat –Maryborough rail line provides for an early morning trip from Maryborough to Ballarat, connecting with Melbourne trains and an early evening departure from Ballarat back to Maryborough seven days a week. The provision of journeys which leave Ballarat in the morning to Maryborough and returning early evening would enable day travel to Maryborough and goldfields towns along the route by passenger rail from Melbourne.
Extension of town bus services	$50k studies + $550k to $960k per year	Extend town bus services as areas develop to supplement capacity on trains and ameliorate frequency constraints and access limitations at stations, in particular Bacchus Marsh and Ballarat West. The delivery of town bus services as residents move into new subdivisions helps the early establishment of sustainable transport patterns.
Public transport improvements west of Ballarat including links from Ararat to Horsham and Portland Quoted cost for studies only	$100k	Identify upgrades to Ararat-Ballarat public transport services and a possible shuttle service from Ararat and Stawell to Portland and Horsham to maximise opportunities of travel by public transport.
Improved public transport services between Ballarat and Buninyong Quoted cost for studies only	$50k	Enhance the frequency of the Ballarat – Buninyong public transport service to improve accessibility by bus and rail transport modes.
Snake Valley to Ballarat bus service investigation Quoted cost for studies only	$10k	This project would investigate the potential for a bus service to be provided between Snake Valley and Ballarat to enable access to Snake Valley via public transport.
Gordon Railway Station Quoted cost for studies only	$20k	Investigate the feasibility of reopening Gordon Station on the Melbourne - Ballarat/Wendouree rail line.

FREIGHT

Project title	Indicative Cost of Works	Project description
Investigate upgrading the Western Highway from Ballarat (Ballarat Western Link Road) to the Port of Melbourne for HPFV (Mass) Quote for Study Only	$200k	The Port of Melbourne is an important destination for freight from Ballarat and surrounding areas. Continuous improvement in the cost of transport between these locations is sought and increasing the size of freight vehicles will help drive efficiency. The accommodation of these vehicles on the Western Highway needs to be investigated.
Ballarat Freight Hub	$17M Stage 1 $87M Stage 2	This comprises a 16 hectare road freight handling facility designed to reduce business costs by improving transport productivity, while servicing current and future freight demands for the City of Ballarat and the surrounding region. Stage 1 proposes a 7 hectare road-based facility. HPFV (High Performance Freight Vehicle) access via the new Western Link Road and will deliver freight efficiently to Melbourne via the Western Highway. It has been designed to avoid "last mile" impediments for freight operators. The Ballarat Freight Hub will deliver the central piece of infrastructure for the HPFV network between Western Victoria and the Port of Melbourne. The establishment of an integrated freight handling facility is central to having a globally competitive transport capability to link the economic growth in the region.
Improve rail freight opportunities, in particular rail line maintenance of the Mildura to Geelong Line	$261m	Improve the capacity of the Mildura to Geelong Rail Line, while investigating the standardisation of the rail network between Mildura and Geelong.
Upgrade of routes connecting Dunnstown Quarry to Western Freeway and Midland Highway	$15m	The road network connections to the Western Highway and the Midland Highway from Dunnstown Quarry are local roads and are substandard to safely meet the large number of heavy vehicles movements to and from the quarry each day. The quarry generates in the order of 70,000 to 80,000 heavy vehicles trips annually. Significant upgrades of the route are required to meet the future demands of the quarries that will come from continued growth in the region and the building and construction industry.
Lake Bolac Parking Area on Glenelg Highway	$500k	Provide a rest area for drivers at the Lake Bolac Parking Area to help reduce driver fatigue on the Glenelg Highway.

Project title	Indicative Cost of Works	Project description
Lexton – Beaufort – Skipton – Werneth - Cressy route upgrade Quoted cost for studies only	30k	Investigate opportunities to designate the road network along the Lexton – Beaufort – Skipton – Werneth – Cressy route as a route for HML and B-double routes to improve access for timber and grain trucks.
North south route Moolort upgrade	$2.2m	Improve the North South Route Moolort road to HML and B-Double standard. This would involve road widening and pavement testing works.
Farm gate access investigation Quoted cost for studies only	$50k	This project would involve investigating the potential for approving travel to Farm Gate by HML and B-Double vehicles.
Ararat Transport Interchange Quoted cost for studies only	$95k	An Intermodal Freight Terminal in Ararat to allow freight to be stored and transferred between modes - rail, road and air – for transport around the country.
East Street, Daylesford Industrial Estate Access improvements Quoted cost for studies only	$80k	Access to the East Street Industrial Estate in Daylesford is restricted for large vehicles at the East Street Railway Bridge. This project would involve investigating opportunities to improve access to the East Street Industrial Estate. Options may include investigating the feasibility of undertaking works to remove the height restriction at the East Street Railway bridge and/or identifying alternative access to the East Street industrial area.
Avoca Road upgrade	$2.2m	Improve Avoca Road to HML and B-Double standard. This would involve road widening and pavement testing works.
Heavy vehicle bypass of Maryborough Quoted cost for studies only	$50k	Designate Tullaroop Road as a bypass of Maryborough centre for heavy vehicles.
Clunes-Creswick Road upgrade Quoted cost for studies only	$150k	Investigations into the strength of the Service Street Bridge, flood levels in Creswick Street and bypass of Clunes along Ligar and Service Streets.
Landsborough-Elmshurst bridgeworks Quoted cost for studies only	$1.1m	Repair and upgrade to raise load limit on current bridges.
Addington-Creswick Road upgrade Quoted cost for studies only	$50k	Investigate the potential for upgrading Addington-Creswick Road for use by heavy vehicles between Creswick and Clunes.
Gillies Road upgrade Quoted cost for studies only	$50k	Investigate the potential of Gillies Road to be used as a B-Double route.
West Berry Road upgrade	$1.5m	Improve West Berry Road to HML and B-Double standard for access of grain trucks to Smeaton.

Project title	Indicative Cost of Works	Project description
		This would involve road widening and pavement testing works.
Creswick-Bald Hills Road upgrade	$700k	Improve Creswick-Bald Hills Road to HML and B-Double standard. This would involve road widening and pavement testing works.
Avoca-Bealiba Road upgrade	$2.6m	Improve Avoca-Bealiba Road Upgrade to HML and B-Double standard. This would involve road widening and pavement testing works.
Carisbrook-Havelock Road upgrade	$1.5m	Improve Carisbrook-Havelock Road to HML and B-Double standard. This would involve road widening and pavement testing works.

AIR

Project title	Indicative Cost of Works	Project description
Ballarat Airport – Aviation Emergency Services Hub	$16m	Develop Ballarat Airport to improve regional Emergency Services, including: • Recommissioning of the southerly extension of Runway 18/36 at the Ballarat Airport to an optimal length; • Surface hardening to allow for Multi Engine Air Tankers (e.g. Convair CV-580 & AvroRJ185), Air Freight, and Regular Passenger Aircraft (e.g. Dash 8 Q400 & SAAB 340); • Construction of an all-hazards, multi-agency emergency services facility onsite at the Ballarat Airport.
Stawell Aerodrome Development Quoted for safety works (excluding extension of runway) Quoted for additional development Feasibility study	$1.2m $0.3m $60k	Stawell Aerodrome is currently the most used in the Grampians. It houses aircraft restoration and sales businesses as well as pilot training and joy flights. Crucially, it is the major DEPI fire base for western Victoria. To enhance the safety of western Victoria and the service that Stawell Aerodrome provides, the following works are needed for the upgrade of existing DEPI firebase: • Additional taxiway; • Helicopter parking area upgrade; • Apron extensions; • Relocation of powerlines underground; • Extension of main runway in the longer term. Opportunities exist, with these improvements, to increase development at the aerodrome, creating growth of employment. To help with this, the following are required: • Additional security / vermin fencing; • Small carpark; • Additional airside road access. A study is needed to: • Examine opportunities to increase airport capacity and allow a safe increase in flight activity; • Identify economic development opportunities for an expanded airport
Improvements at Bacchus Marsh Airport and Parwan Area Quoted cost for investigative studies only	$150k	The Bacchus Marsh Aerodrome is currently leased to a local club. The airport has limited development at present but significant opportunities exist to increase development and employment at airport. In particular, a study is needed to: • Remove existing airport capacity issues that limit a safe increase in flight activity;

Project title	Indicative Cost of Works	Project description
		• Identify economic development opportunities for an expanded airport; • Identify employment opportunities for the growing peri-urban area.
Improvements at Ararat Airport Quoted cost for studies only	$60k	Ararat Aerodrome is currently used only for gliding but opportunities exist to increase development and employment at airport. A study is needed to: • Examine opportunities to increase airport capacity and allow a safe increase in flight activity; • Identify economic development opportunities for an expanded airport including pilot training and aircraft repair.

ACTIVE TRANSPORT

Project title	Indicative Cost of Works	Project description
Daylesford – Macedon Ranges Rail Trail	$4m	The Daylesford- Macedon Ranges Rail trail follows a 44km route between Daylesford and Woodend. It passes through Tylden, Trentham, Lyonville, Bullarto and Musk, bringing potential for economic development benefits for each of these centres.
Ararat to Maryborough Rail Trail	$1m	Development of a shared trail for hiking and cycling aimed at developing tourist opportunities in Ararat and the Central Goldfields. Currently this rail line is used infrequently (storage of grain trains) and may be closed, providing the opportunity to develop the route into a rail trail connecting Maryborough with Ararat through Avoca. However, this project will not be able to be progressed until the outcomes of the Mildura to Geelong Standardisation project are finalised. This project should be considered in the development of the proposed Central Highlands Tracks and Trails project.
Grampians Peak Trail	$27m	The Grampians Peak Trail proposal is for a 144 kilometre, multi-day walk, showcasing the beauty and majesty of Gariwerd's natural and cultural landscapes with an estimated visitation of 23,000 people per year by 2020.
Northern Grampians Walk/ Cycle improvements	$80k	Develop the region's tourism potential with walking and cycling opportunities in the Northern Grampians, including the provision of the Moyston to Halls Gap Rail Trail shared path for use by walkers and cyclists.

Appendix B: Priorities and Achievement of Goals

Project title	Regional Growth Plan Principles					Transport Strategy Objectives						Challenges			
	Support population growth	Support economic growth	Capitalise on the links with other regions and cities	Enhance the level of access to key services	Provide transport infrastructure to areas of growth	Improve the capacity and functioning of the transport networks	Ensure access and connectivity between settlements within and external to the region	Provide for a safe, reliable and resilient transport network	Consider technological advances in the transport provision mix	Ensure amenity and useability	Develop freight precincts	Ensure efficient ways to transport products	Congestion and Delay	Growth	Connectivity	Safety and Well-being
Enhanced Rail connection Ballarat to Melbourne, including implementation of suburban rail services for peri-urban areas	√	√	√	√	√	√	√	√		√		√	√	√	√	√
Duplication of Western Highway, Buangor to Stawell	√	√	√	√	√	√	√	√		√		√	√	√	√	√
Woolpack Road extension to Bacchus Marsh Bypass	√	√	√	√	√	√	√	√		√		√	√	√	√	√
Development of Bacchus Marsh north-south arterials	√	√	√		√	√	√	√		√		√	√	√	√	√
Beaufort Bypass	√	√				√	√	√		√		√	√	√	√	√
Ararat Bypass	√	√			√	√	√	√		√		√	√	√	√	√
Bacchus Marsh Eastern Bypass: extension of Woolpack Road north to Gisborne Road	√	√	√		√	√	√	√		√		√	√	√	√	√
Ballarat Western Link Road - Stages 2 & 3	√	√	√	√	√	√	√	√		√	√	√	√	√	√	
Investigate upgrading the Western Highway from Ballarat (Ballarat Western Link Road) to the Port of Melbourne for HPFV (Mass)	√	√	√	√	√	√	√		√		√	√	√	√	√	
Upgrade Western Highway to freeway between Leigh Creek and Woodmans Hill	√	√		√	√	√	√			√		√	√		√	
Ballarat Freight Hub		√	√	√	√	√	√		√	√	√	√		√	√	
Improve rail freight opportunities, in particular rail line maintenance of the Mildura to		√		√	√	√	√	√		√		√		√	√	√
Ballarat Airport - Aviation Emergency Services Hub		√		√			√	√	√	√		√		√	√	√
Improve safety and efficiency at intersections on major highways in the region		√					√	√		√		√		√	√	√
Upgrade of routes connecting Dunnstown Quarry to Western Freeway and Midland Highway		√			√	√	√			√		√	√	√	√	
Provision of additional overtaking lanes on major roads							√	√		√		√			√	√
Hallets Way Extension	√	√		√	√	√	√	√		√		√	√	√	√	√
Daylesford – Macedon Ranges Rail Trail	√	√	√	√		√	√			√		√		√	√	√
Bendigo-Ballarat-Geelong-Rail	√	√	√	√	√	√	√	√		√		√	√	√	√	√
Mair Street Upgrade	√	√		√		√	√	√		√		√	√	√	√	√
Parwan – Exford Road and Greigs Road Corridor	√			√		√	√			√		√		√	√	
Lake Bolac Parking Area on Glenelg Highway								√	√	√		√			√	√
Extension of town bus services	√			√		√	√			√		√		√	√	√
Develop a rail crossing removal program								√		√		√		√	√	√
Ararat to Maryborough Rail Trail			√							√		√		√	√	√
Improved transport links to serve Ballarat West growth areas	√	√		√		√	√	√		√		√		√	√	√
Enable day travel to Maryborough and goldfields towns by passenger rail from Melbourne		√	√	√		√	√	√		√		√		√	√	√
Ballarat Eastern Bypass - Yankee Flat Road	√	√	√		√	√	√	√		√		√	√	√	√	√
Diggers Rest – Coimadai Road corridor						√						√		√	√	
Stawell Aerodrome Development				√		√		√	√			√		√	√	√
Stawell Bypass		√				√	√					√	√	√	√	
Duplication of Creswick Road (Midland Hwy from Howitt Street to Western Freeway)			√		√	√	√					√		√	√	
Capacity Improvements along Geelong Road					√	√	√					√		√	√	
Improvements at Bacchus Marsh Airport and Parwan Area		√				√						√		√	√	
Improvements at Ararat Airport		√				√			√			√		√	√	
Implement Grampians Peak Trail Proposal		√				√				√		√		√	√	√
Sunraysia Highway Improvements						√	√					√		√	√	
Investigate possible shuttle Service Ararat and Stawell to Portland and Horsham		√	√			√	√					√		√	√	√
Improve train/bus connections between Ararat and the Grampians		√				√	√					√		√	√	
Develop the Lexton – Beaufort – Skipton – Wemeth - Cressy route as a preferred route for		√				√	√					√		√	√	
Improve Road Link to Great Ocean Road		√				√	√					√		√	√	
Enhance the frequency of the Ballarat – Buninyong public transport service		√				√	√					√		√	√	
North South Route Moolort - Upgrade to B-Double Standard		√				√	√					√		√	√	
Investigate Farm Gate access for HPFV		√				√	√					√		√	√	
Investigate bus access to Snake Valley from Ballarat		√				√	√					√		√	√	
Formal Transport Interchange in Ararat		√				√	√				√	√		√	√	
Improve access to East Street Industrial Estate, Daylesford		√				√	√				√	√		√	√	
Upgrade Warrayatkin Road to cater to regional journeys to work		√				√	√					√		√	√	
Develop the Region's Tourism potential with Walking and Cycling opportunities in the Northern		√				√	√					√		√	√	
Transport to Proposed new Windfarms		√				√	√	√	√			√		√	√	√
Avoca Road upgrade to B-double standard		√				√	√					√		√	√	
Tullaroop Road - Heavy vehicle bypass of Maryborough		√				√	√					√		√	√	
Investigate the feasibility of reopening Gordon Station		√				√	√					√		√	√	
Investigate feasibility of Upgrading Clunes-Creswick Road to HML vehicle standard.		√				√	√					√		√	√	
Landsborough-Elmhurst Bridgeworks		√				√	√					√		√	√	
Investigate feasibilty ot upgrading Addigrton to Creswick Road as alternative HML route		√				√	√					√		√	√	
Investigate feasibility of Gillies Road as a B-double route		√				√	√					√		√	√	
Upgrade West Berry Road to B-Double and HML route standarad		√				√	√					√		√	√	
Upgrade Creswick-Bald Hills Road to B-double and HML route standard		√				√	√					√		√	√	
Avoca - Bealiba Road - Upgrade to B-Double Standard		√				√	√					√		√	√	
Carisbrook Havelock Road - Upgrade to B-Double Standard		√				√	√					√		√	√	
Provide Interchange on Western Freeway with Bungaree-Creswick Road		√			√	√	√					√		√	√	

CENTRAL HIGHLANDS COUNCILS