

LODDON MALLEE SOUTH REGIONAL GROWTH PLAN



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EXECUTIVE SUMMARY

The Loddon Mallee South region is the geographic centre of Victoria, making it highly accessible to and from Melbourne and surrounding regional areas. The region extends from the floodplains of the mid-Loddon River in the north west to the Macedon Ranges in the south east. At its closest point, the region is 50 kilometres from central Melbourne and offers a variety of high level services that provide an attractive alternative to Melbourne and other regions. It has a rich natural and built heritage, attractive towns, a pleasant climate and social and economic diversity. Its central location and excellent transport links allow safe and efficient travel to Melbourne and other centres.

The Loddon Mallee South Regional Growth Plan is the strategic land use plan for the region to guide growth and change for the next 30 years. The plan covers the local government areas of the Central Goldfields Shire, the City of Greater Bendigo, Loddon Shire, Macedon Ranges Shire and Mount Alexander Shire. It is one of eight regional growth plans being prepared in Victoria.

The Loddon Mallee South region has many important physical and lifestyle assets, which are the foundation of its economy and communities. The region's rich goldfields history, rural production areas, earth resources industries, forests and natural landscapes surround a diverse network of settlements. These assets have and will continue to attract people to the region to live, work and visit.

Over the past decade, the region has outpaced the rest of regional Victoria for economic growth. Gross Regional Product (GRP) increased from \$4.62 billion in 2001 to \$6.63 billion in 2011 (Regional Development Victoria, 2013). The key sectors contributing to this growth are financial, health and insurance services, manufacturing and mining.

Agriculture continues to be a significant employer in the region particularly horticulture, viticulture, poultry and swine. Population-driven sectors such as healthcare, construction, education and retail trade are also significant to the regional economy. Earth resource industries include diverse mining and quarrying operations and will continue to contribute to the economy of the region.

The City of Greater Bendigo is a vibrant, growing regional city with an urban and rural population of over 100,000 people, providing quality education and healthcare facilities, a strong economy and thriving cultural life. The growth and wellbeing of the region as a whole depends heavily on the success of this regional city. A prosperous Bendigo that continues to grow in economic strength can offer an attractive alternative to Melbourne and other regions.

EXECUTIVE SUMMARY

The network of larger and smaller towns in the Loddon Mallee South region, most of which connect closely to Bendigo, are central to the region's unique character. Larger centres such as Gisborne, Kyneton, Castlemaine and Maryborough act as hubs to smaller surrounding settlements and rural areas both inside and beyond the regional boundaries. These larger centres offer a diversity of retail and community services and recreational and cultural opportunities, which complement those in Bendigo and Melbourne.

The majority of the region is made up of non-urban land, a significant portion of which is used for agricultural production. The region is agriculturally diverse, with irrigated dairying, cropping and grazing in the north east and large-scale productive cropping, dry land and mixed farming in the north-west (predominantly Loddon Shire). Wineries, orchards and olive groves are located throughout the region, with clusters in the Macedon Ranges, Harcourt Valley and Bendigo areas. One of the world's largest single estate olive groves is located near Boort.

The Loddon Mallee South region has experienced, and continues to experience, strong population and economic growth. This plan provides guidance to help achieve sustainable growth across the region, while maintaining its highly attractive, liveable and accessible characteristics, which offer a range of lifestyle and work opportunities for existing and future residents and visitors.

The plan identifies where future growth is promoted and supported in the region. It identifies environmental, economic, community and infrastructure resources of regional importance that should be preserved, maintained or developed. It also outlines key planning considerations, such as natural hazards that may influence growth, and seeks to guide future land use planning to ensure the region continues to thrive.

Map 1 – Future growth framework highlights the key directions for growth of the region, directing population and economic growth to the regional city of Bendigo, managing and supporting growth in key regional centres and fostering growth in some key hinterland towns around Bendigo.

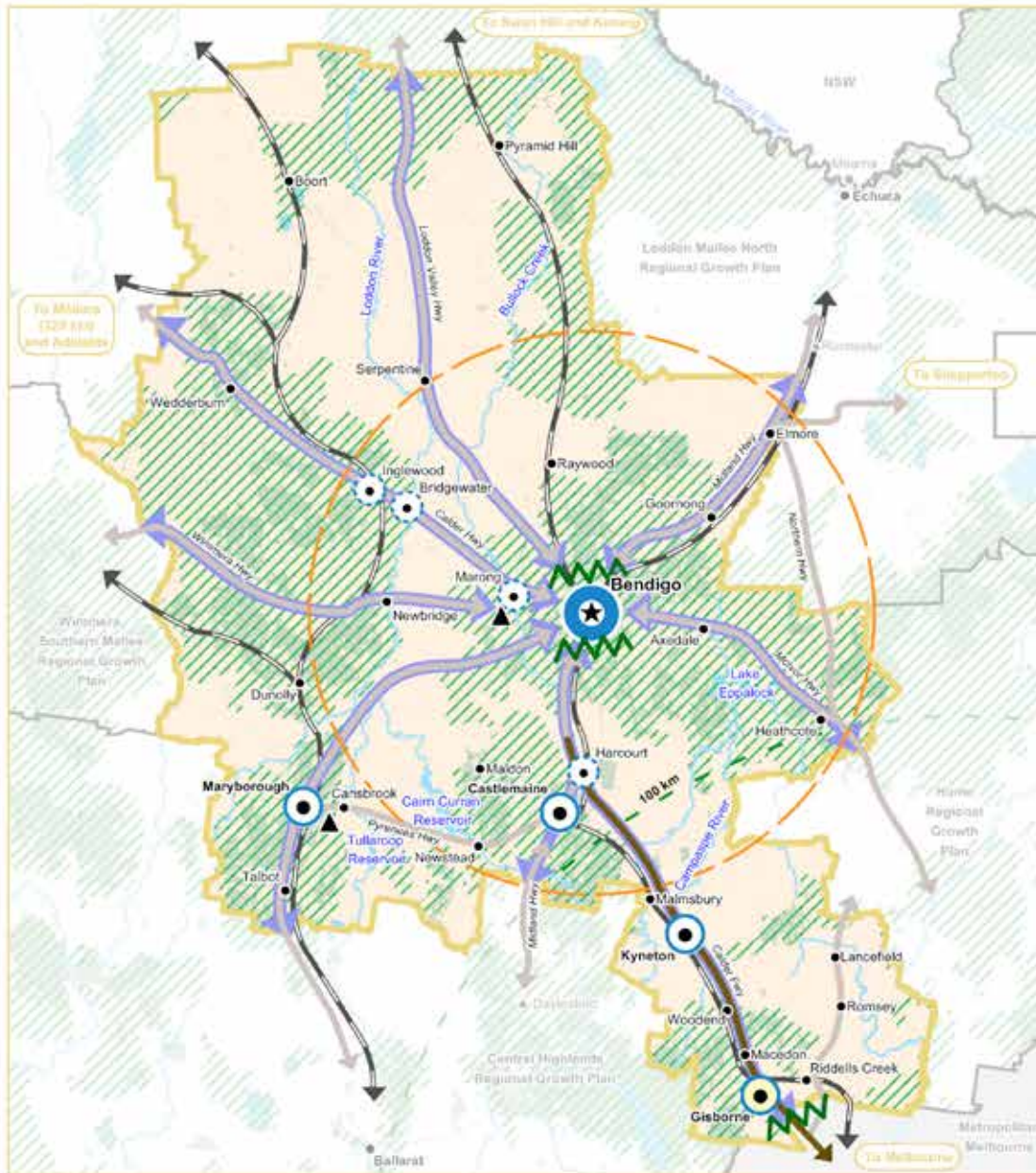
The region can build on its economic strengths in a variety of sectors, such as health and finance, as well as emerging industries such as the tourism and equine sectors. The plan aims to facilitate ongoing agricultural productivity and new opportunities that respond to climate change. Opportunities for manufacturing and building on supply chain linkages are supported. Important environmental assets will be protected and improved.

Vision for Loddon Mallee South region

In 2041 our communities continue to enjoy regional liveability with urban accessibility. We are a region with vibrant, innovative, sustainable and connected communities offering a diversity of lifestyles, building on our heritage, natural environment and agricultural landscapes.

The region is home to some 300,000 people by 2041, with access to employment, infrastructure, educational opportunities, healthcare and other services. The region continues to attract new investment and a diverse range of jobs, anchored within a diversifying economy, capitalising on competitive advantages.

Map 1: Future growth framework



SETTLEMENT NETWORK

- Bendigo - Regional city - Significant growth**
Promote growth of Bendigo as the regional city. Significant population growth with major residential development. It will be the major population and economic growth hub for the region.
- Regional centres/towns - Manage and support growth**
Manage and support growth in these settlements, reinforcing the network of communities within the region. These settlements will be employment and service hubs. Growth consistent with structure plans, comprising infill and some targeted expansion.
- Encourage sustainable growth in Bendigo's hinterland towns**
Potential growth and expansion to capitalise on excellent access to Bendigo. Facilitate the growth of Marong as a residential and industrial/business location.
- Designated identified growth centre in Plan Melbourne**
Plan Melbourne (Chapter 6 – State of Cities) identifies Gisborne as a peri-urban town with potential to attract housing and population growth out of Melbourne.
- Towns and rural centres
- Maintain settlement break
- Areas within 100 km of central Melbourne
- Bendigo hinterland

CONNECTIVITY

- Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement.
 - Explore further opportunities to develop freight-related activities in Marong and Maryborough.
- Maintain and strengthen key transport networks, both road and rail for the transporting of freight and people.
- Freeway Road Rail

ECONOMIC

- Facilitate ongoing agricultural productivity and new opportunities that respond to climate change through ongoing adaptation and flexibility.

ENVIRONMENT

- Protect and improve the condition of the region's high value terrestrial habitat.
- Public land
- Lakes
- Rivers

Source: Department of Transport, Planning and Local Infrastructure





Hanging Rock, Macedon Ranges Shire

PART A | INTRODUCTION

1. What is a regional growth plan?

Eight regional growth plans have been developed to provide broad direction for land use and development across regional Victoria as shown in Map 2. They also provide more detailed planning frameworks for key regional cities and centres.

Increasing the growth of regional Victoria will help improve the state's competitiveness by strengthening regional labour markets, expanding markets for local goods and services and providing a greater diversity of affordable housing and employment opportunities.

Regional growth plans, together with the new metropolitan planning strategy, *Plan Melbourne*, have been aligned in a way that builds on the interdependence of our urban settlements and facilitates their development as a networked 'state of cities'. Unlocking the growth potential of these cities – so they can accommodate a greater proportion of the state's future growth, with good transport connections between them and Melbourne – will create a state of cities where there are greater choices for people about where to live, work or start a business. It is likely that demand for housing in regional cities and centres would be accelerated in the future with the imposition of a permanent growth boundary around Melbourne.

The Loddon Mallee South Regional Growth Plan is the strategic regional land use plan for the Loddon Mallee South region comprising the following local government areas: Central Goldfields Shire; the City of Greater Bendigo; Loddon Shire; Macedon Ranges Shire; and Mount Alexander Shire.

Regional growth plans respond to directions established in the regional strategic plans that were prepared across regional Victoria between 2007 and 2010. The Loddon Mallee Regional Strategic Plan – Southern Region 2010 (Strategic Plan 2010) identifies the most important regional

issues and presents a framework to work together as a region. The Strategic Plan 2010 seeks to maximise opportunities and manage future growth and change in a way that strengthens the regional economy, helps people to thrive and protects the region's rich natural and cultural heritage. The Strategic Plan 2010 and its subsequent updates underpin directions and initiatives in this plan.

The strategic directions identified in the Strategic Plan 2010 have been built on to develop the vision and principles for this plan outlined in Part B. This plan specifically delivers on **Strategic Direction No. 1** of the Strategic Plan 2010, to "manage our population growth and settlements" and Priority Action 1.1 "Establish a Regional Settlement Framework that respects the amenity, functionality and connectedness of existing cities and towns, and accommodates growth accordingly"¹. The Regional Strategic Plan Annual Report 2011–12 outlines further work that has occurred in the region to underpin the strategic directions and actions.

Regional growth plans are the next stage in planning for growth and change in regional Victoria. They have been developed in a partnership between local government and state agencies and authorities. Regional growth plans reflect state and local government objectives.

This plan will provide a long-term view of the region to 2041 and beyond, allowing for some short-term actions, and providing long-term strategic land use direction.

This plan will provide high level guidance for land use planning at the local level and inform the decision making of a range of agencies regarding future planning and investment in the region. Detailed direction on local issues will continue to be provided through subsequent local planning processes such as structure plans, growth framework plans and amendments to planning schemes as shown in the following table.

¹ Loddon Mallee Regional Strategic Plan – Southern Region, 2010, p11.

Map 2: The eight regional growth plans



Source: Department of Transport, Planning and Local Infrastructure

Table 1: *Planning framework context*

Regional planning	Local planning
Regional strategic plans Shorter- to medium-term priorities and directions for regions	Council plans Shorter- to medium-term priorities and actions for councils
Regional growth plans Long-term strategic direction for land use planning for regions	Municipal Strategic Statements Long-term strategic direction for land use planning for councils

A Localised Planning Statement is being prepared for the Macedon Ranges to provide the basis for state recognition of the valued attributes of the area. This regional growth plan will provide broad strategic direction for land use in the Macedon Ranges Shire. The Localised Planning Statement will provide the basis for greater recognition and protection for the area and supplement the more general state level strategies and policies.

2. Why we need this plan

The regional growth plans translate and integrate emerging statewide regional land use planning policy. They provide the basis for regional coordination and future planning of infrastructure to support regional land use objectives.

The Loddon Mallee South Regional Growth Plan:

- establishes a framework for strategic land use and settlement planning that can accommodate growth within ecologically sustainable development principles
- identifies important economic, environmental, social and cultural resources to be preserved, maintained or developed
- provides direction for accommodating growth and change including residential, employment, industrial, commercial, agriculture and other rural activities
- shows which areas of land can accommodate growth and which are to be maintained for other uses
- identifies opportunities for supporting regional level infrastructure, providing an essential contribution to the long-term sustainability of the region.

The plan will help councils by streamlining planning policy and potentially reducing the strategic workload of councils. It will also contribute to broader regional goals.

It provides a regional strategic land use framework for growth and change. It is a strategic direction-setting document that identifies long-term land uses and growth objectives.

This plan is not intended to be used at a level where service planning or specific unquantified infrastructure could be committed. This plan will guide infrastructure decisions and provide priority for further investigations of regionally significant infrastructure. Site-specific development proposals and processes are also outside the scope of the plan.

The plan will provide solutions to common issues across the Loddon Mallee South region but will not reduce attention to local issues or replace local planning, for example, identification of future industrial and other employment locations, or consistent regional approaches to matters such as planning for key resources, waste, tourism and heritage.

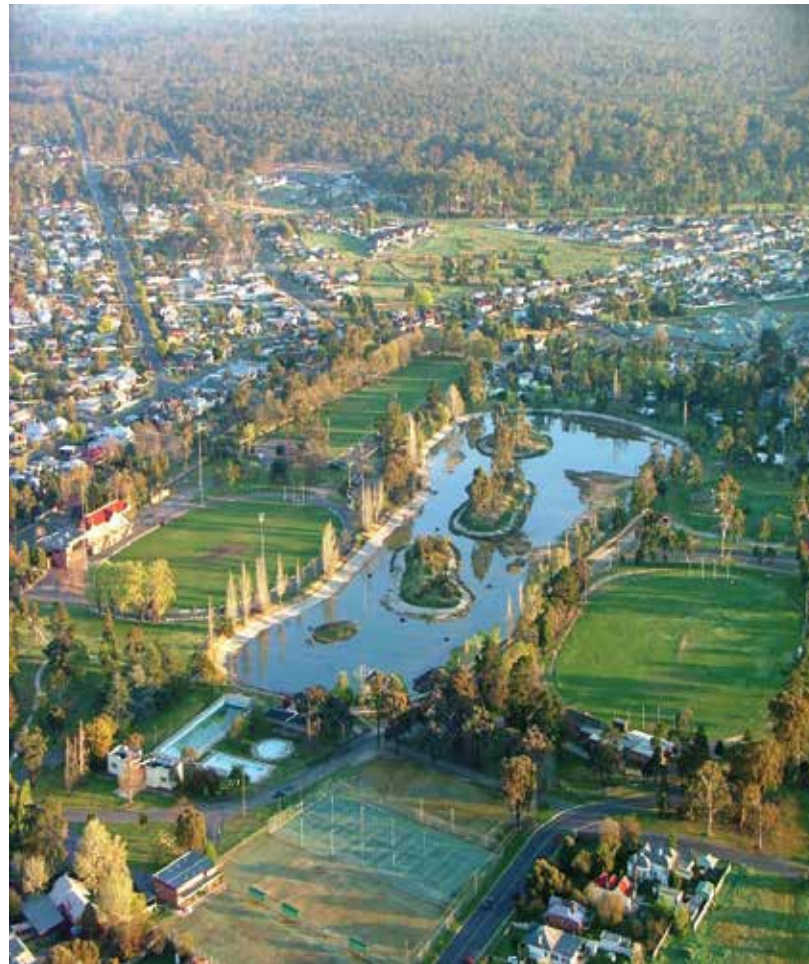
3. How this plan will be used

The key land use planning directions of this plan will be implemented through the state planning system as it is applied by each council in the Loddon Mallee South region. This will support decision making at a local level.

Implementation will occur in a number of ways, such as further specific amendments to planning schemes, preparation of infrastructure plans, land supply monitoring and other projects.

The plan will be used to guide and inform future land use planning work across the Loddon Mallee South region, including subsequent reviews of each council's Municipal Strategic Statement.

The future land use directions in this plan should be taken into consideration in planning decisions.



Maryborough, Central Goldfields Shire

4. How the plan was prepared

This plan has been developed through research and analysis of information provided by all partners in the process and regional workshops to develop the plan's strategic directions. A draft plan was published and made available for public comment in April and May 2013. Feedback from the consultations has informed the final regional growth plan and background report. A background report contains more detailed information and justification related to the contents of the plan.

The plan has been prepared through a partnership approach to regional planning across five municipalities and state government departments and agencies, including the Department of Transport, Planning and Local Infrastructure, Regional Development Victoria, the Department of Environment and Primary Industries, VicRoads and the North Central Catchment Management Authority.

The plan has been informed by a Project Steering Group and a Technical Working Group, both formed as part of this project. Preparation of the plan occurred through five phases:

1. Project establishment
2. Prepare background issues paper
3. Establish draft strategic directions
4. Prepare draft regional growth plan (public consultation)
5. Prepare final regional growth plan

5. Components of this plan

This plan contains five parts:

A: Introduction – Provides an overview of the context of the plan and how it has been prepared.

B: Regional overview – Provides a snapshot of the region, a vision for the region and land use principles to achieve the vision.

C: Towards the regional growth plan — Regional land use framework

The regional land use framework contains the key directions for growth in four key sections:

- Regional economy
- Environment and heritage
- Living in the region
- Regional infrastructure

D: Regional growth plan – Provides an integrated strategic plan for growth and change, bringing together the key directions outlined in Part C.

E: Delivering regional growth – outlines how the plan will be implemented and progress monitored.

The background report contains additional information that was relied upon in the development of this plan. The background report is available on the Department of Transport, Planning and Local Infrastructure website

www.dtpli.vic.gov.au/regionalgrowthplans



Vineyard, Blackjack Wines, Mount Alexander Shire

PART B | REGIONAL OVERVIEW

This part of the Loddon Mallee South Regional Growth Plan provides a broad overview of the Loddon Mallee South region including what is driving growth and change, what land use challenges the region faces, and a vision statement outlining a desired future for the region.

6. Snapshot of the region

Geographic area and settlements

The Loddon Mallee South region is 14,563 square kilometres in total area and made up of five municipalities as shown in *Map 3 – Loddon Mallee South region*. The region currently accommodates a population of 188,000² people, nearly half of whom reside in the urban centre of Bendigo.

The Loddon Mallee South region is the geographic centre of Victoria, making it highly accessible to and from Melbourne and surrounding regional areas and an alternative to Melbourne in terms of high level service provision. The region extends from the floodplain of the mid-Loddon River in the north west to the Macedon Ranges in the south east. At its closest point, the region is 50 kilometres from central Melbourne. It has a rich natural and built heritage, attractive towns, a pleasant climate and social and economic diversity. Its central location and excellent transport links allow safe and efficient travel to Melbourne and other centres³.

The mix of towns, farmland and forest in the region's south and east, and its goldfields heritage provide an attractive landscape that draws tourists from within and outside the state.

Map 3: Loddon Mallee South region



Source: Department of Transport, Planning and Local Infrastructure

² Total population of Loddon Mallee South Region – Victoria in Future 2012.

³ Loddon Mallee Regional Strategic Plan 2010, p7.

Rural areas support a variety of farming operations, produce food, fibre and employment and contribute to the regional economy. The region's rural, infrastructure and social relationships extend beyond regional boundaries to communities of interest in other regions. These links and relationships have been considered in the development of this plan.

The City of Greater Bendigo has a total urban and rural population of 100,617⁴ people. The urban centre of Bendigo is a vibrant, growing regional city with a population of 82,794⁵ people, providing quality education and healthcare facilities, a strong economy and thriving cultural facilities. The network of larger and smaller towns, most of which connect closely to Bendigo, are central to the region's unique character.

Larger centres such as Gisborne, Kyneton, Castlemaine and Maryborough act as district hubs to smaller surrounding settlements and rural areas, both inside and beyond the regional boundaries. These larger centres offer a diversity of retail and community services and recreational and cultural opportunities that complement those on offer in Bendigo and Melbourne. Maryborough has strong links to Ballarat as well as Bendigo.

Melbourne's peri-urban hinterland

Peri-urban literally means the area around a settlement. Melbourne's peri-urban region is diverse, containing a mix of people, places and experiences. This predominantly rural area includes key urban settlements and townships, which face particular pressures for growth and change. In the Loddon Mallee South region it extends across the Macedon Ranges and part of Mount Alexander Shire between the north-western fringe of metropolitan Melbourne and Castlemaine. Urban settlements likely to experience these challenges for growth and change include Gisborne, Kyneton and smaller settlements, for example Romsey and Riddells Creek.

The peri-urban region includes a number of state significant land assets important to the functioning of Melbourne and Victoria as a whole. These include resources, infrastructure, environmental assets and cultural heritage assets (refer to Table 2). These land assets provide some of our most basic needs, which over five million Victorians rely on every day, such as quality air and water, food, fibre, and building materials for our homes and roads. The peri-urban region's unique natural, cultural and recreational assets provide great economic opportunities. This is a significant strength for the state, providing opportunities to maximise our competitive advantage over other cities and regions within Australia and the Asia-Pacific region. The economic opportunities provided by the assets and appropriate growth will contribute to the economy, our quality of life and environmental strengths. Considered land use planning will ensure we, and future generations, can continue to enjoy the benefits that this area provides.

⁴ Population of Greater Bendigo LGA – Australian Bureau of Statistics Census 2011.

⁵ Population of Urban Centre/Locality of Bendigo – Australian Bureau of Statistics Census 2011.

The proximity of the peri-urban region to Melbourne and high standard road and rail infrastructure reinforces strong two-way connections between these areas, providing access to jobs, markets, customers and tourists. The peri-urban region has a particularly strong relationship to the Melbourne population. Visitation, tourism and commuting patterns occur between these areas and recreation and amenity areas are frequented by hundreds of thousands of people during weekends and holiday periods. These interactions have had a strong influence on growth and change within the peri-urban region. These areas have had high percentage increases in population and this trend is projected to continue.

If not managed, development pressures and sprawling growth can increase risks from bushfire, sea level rise and flood, add to infrastructure costs and lead to a loss of important non-urban assets including productive farmland, water catchments, earth resources, biodiversity and natural ecosystems. Retaining the economic and community value of these assets is a key consideration in planning for this area.

Collectively, the metropolitan planning strategy, *Plan Melbourne* and the peri-urban regional growth plans (G21, Central Highlands, Loddon Mallee South, Hume and Gippsland) provide the vision and broad strategic direction for land use and development across this area. The regional growth plans include high level framework plans for towns and cities where urban growth will be supported. In the Loddon Mallee South region, Gisborne, Kyneton and Castlemaine have been identified as peri-urban locations where growth is supported.

The government in partnership with councils will work to provide specific statements about the peri-urban region to respond to the unique pressures and opportunities that are common to these locations. There is an opportunity to clearly articulate the outcomes envisaged for the complex peri-urban region at a finer grain. Stronger and clearer guidance for making land use planning and development decisions in the peri-urban region is needed, particularly where trade-offs between competing land uses are required.

Understanding the role of regional cities, peri-urban towns and rural communities, and their relationship to one another and to Melbourne is a critical element in planning for the peri-urban region. Peri-urban councils have already led the preparation of detailed research of many of the issues affecting the area, and have developed policy positions in a number of locations to inform decision making at the strategic land use level. The work of councils, together with *Plan Melbourne* and the regional growth plans, provide a strong foundation for preparation of statements about the peri-urban region.

PART B | REGIONAL OVERVIEW

Table 2: State significant land uses present within Melbourne's peri-urban region

Land uses	Why these land uses are considered significant to the state
Resources	
Extractive	The cost of transporting stone and sand products over long distances can account for a substantial proportion of product price at the construction site. Sourcing construction materials from local quarries within the peri-urban region enables cost-efficiencies and energy savings.
Forestry	A number of state forest reserves are located in the peri-urban region. They provide for a variety of uses, including providing timber for sustainable forestry, biodiversity and landscape conservation, protection of water catchments and providing opportunities for recreation.
Productive agriculture	Prime agricultural land provides food and fibre to the Victorian community and supports employment and businesses. It also supports associated rural industries, such as food processing, abattoirs, shearing, irrigation supplies and stock feed producers that contribute to Victoria's economy.
Water catchments	The peri-urban catchments and storages remain essential to provide potable water for human and domestic animal consumption. The filtering action of the forested surrounds of our reservoirs avoids the need for expensive water treatment facilities for Melbourne and surrounding cities and towns.
Infrastructure	
Transport	The peri-urban region is traversed by an extensive arterial road and rail transport network linking major centres of population and industry across Victoria. Progressive transport expansion and safety improvements continue to influence land use activities and are likely to further improve travel times, reducing the commuting time and improving access between peri-urban areas and with Melbourne.
Utilities	Water treatment plants, as well as electricity, gas and waste management facilities, pipelines and transmission corridors are located within the peri-urban region. These assets support the functioning of Victoria's urban areas.
Environment	
Biodiversity	Strong natural systems with a diversity of natural habitats for native plant and animals are important for the health and wellbeing of people living in urban areas. Opportunities for close connections with the natural world have high social, economic and educational value.
Landscapes	Landscapes help define the areas in which we live and work, and provide a connection with place and culture.
Parks and reserves	There are a large number of parks and reserves in the peri-urban region. These areas provide ecological, environmental and aesthetic value and the opportunity for leisure and recreation.
Waterways	There are many ecologically significant rivers traversing the peri-urban region, connecting our water catchments with bays.
Cultural	
Heritage	There are various places, sites, structures, relics and flora of heritage significance in the peri-urban region. Heritage assets generate social benefits, such as a sense of identity, direct user benefits through tourism and the benefits stemming from the intrinsic value of preserving these assets for future generations to appreciate and enjoy.
Tourism	The peri-urban region provides key day trip destinations for residents and visitors from interstate and overseas. Attracting visitors to the peri-urban region also results in indirect employment and additional spend in 'downstream' industries such as retail suppliers, food production and construction.

People and population growth

The Loddon Mallee South region has experienced, and is expected to continue to experience, strong population and economic growth, however this growth is unlikely to be evenly distributed across the region. There are areas of the region experiencing high levels of growth and others where population is decreasing. Based on current projections the region's population is projected to reach 242,200 by 2031⁶ and approximately 266,900 by 2041 (Victoria in Future 2012).

The Victorian Government uses Victoria in Future (VIF) 2012 as its official population projections. Population projections are estimates of future populations if current demographic, economic and social trends continue, and include analysis of Census data. They are based on observable, 'on the ground' changes in the population. Projections are not predictions of the future or targets for growth, but rather give an indication of what is likely to happen. These projections may differ as a result of different data sources used by councils, communities and individuals.

Table 3: Projected population changes across the Loddon Mallee South region to 2031

Local Government Area	Total Population		
	2011	2021	2031
Central Goldfields (S)	12,800	13,500	14,000
Greater Bendigo (C)	105,600	122,600	139,800
Loddon (S)	8000	7800	7600
Macedon Ranges (S)	43,200	51,300	58,900
Mount Alexander (S)	18,400	20,100	21,900
	188,000	215,300	242,200

Source: Department of Planning and Community Development, Victoria in Future 2012

In Table 3, the total populations in 2011 represent the base populations for the VIF 2012 projections and are equal to the Australian Bureau of Statistics Estimated Resident Population at 30 June 2011.

In the Loddon Mallee South region there will be more people in all age ranges; however there is much higher growth in the older age ranges across the region. Providing appropriate housing and services for an ageing population is a challenge that needs to be managed. One role of this plan is to set out a desired future that ensures sustainable and viable communities and a strong economy while protecting the valued assets and character that define the Loddon Mallee South region.

Currently, both population and economic growth across the region is not uniform. The existing Calder transport corridor (road and rail) has accelerated growth in locations with ease of access to transport. Most growth is occurring in the corridor between Bendigo and Melbourne. The Greater Bendigo and Macedon Ranges municipalities have experienced rapid growth, above the region's average. Mount Alexander Shire has experienced steady growth, below the region's average. There has been a small amount of growth in Central Goldfields Shire and a decrease in overall population in Loddon Shire.

This plan does not predict a growth rate or forecast population size at specific periods in time. Instead, it acknowledges that there is likely to continue to be steady growth in the region and that the population is likely to reach the projected 266,900 by 2041. The plan considers the implications of growing to a population of 300,000 in this period, with 150,000 to 200,000 people residing in the City of Greater Bendigo. More information on population growth can be found in the background report.

⁶ VIF 2012 population projections are only available at local level for the period 2011 until 2031. Only a regional total projection is provided for 2041.

Economic growth

Over the past decade, the region has outpaced the rest of regional Victoria in economic growth. The key sectors contributing to this economic growth are financial, health and insurance services, manufacturing and mining. Agriculture continues to be a significant employer in the region, particularly horticulture, viticulture, poultry and swine. Population-driven sectors such as healthcare, construction, education and retail trade are also significant to the regional economy.

Bendigo has driven much of the economic growth in the region, through its function as the regional city. Bendigo had the highest annual average growth rate on Gross Regional Product among regional cities (2001 to 2011). While manufacturing is Bendigo's largest industry in terms of economic output, there has been substantial growth in all business sectors and 48,246 people are employed in the City of Greater Bendigo. The City of Greater Bendigo is home to over 4000 businesses including finance, information and communication technology, business, manufacturing, health, education and government. These sectors are anticipated to grow significantly in the future.

Attracting and maintaining younger age groups for both education and further employment will be critical to maintaining community diversity and a vital economy. The desire for the regional city and settlements to grow and sustain viable populations also relies on attracting families to the region, which in turn depends on offering a range of employment opportunities and appropriate access to social infrastructure.

Environmental and heritage assets

The Loddon Mallee South region contains significant environmental assets including native vegetation, waterways, soils and water supply catchments. These assets occur on both public and private land and need to be considered carefully when planning for the settlement and economic growth in the region. These environmental assets provide numerous

environmental values to the region beyond supporting natural systems and processes, such as recreation and tourism destinations, supporting the attractiveness and liveability of the region, and enabling the provision of water and food for communities.

The region's cultural heritage assets include a rich goldfields history, rural production areas, historic settlements and places and landscapes of Aboriginal cultural heritage significance. These assets have always attracted, and will continue to attract, people to the region to live, work and visit.

The region has many well-known areas that contain multiple environmental and heritage assets, including the Castlemaine Diggings National Heritage Park, Hanging Rock, the Macedon Ranges, Terrick Terrick National Park, Kooyoora State Park and the numerous wetlands in the Loddon River Floodplain.

Transport access and infrastructure

The Calder transport corridor (road and rail) is the key transport spine in the region providing access to Melbourne to the south and Mildura through to Adelaide to the north west. Recent infrastructure investments have encouraged the growth of towns and communities along the corridor. Upgrades to the Calder Freeway and Bendigo rail line over the past decade have resulted in greater movement along this important transport spine. These networks and movements are critical to business and commuter transport.

Other key road links include the Northern and Sunraysia highways, which provide strategic routes to intra-regional cities such as Ballarat and Geelong; the Midland Highway, which provides a north-south link between the Hume Freeway and the Port of Geelong via Benalla, Shepparton, Bendigo and Ballarat; the McIvor Highway, which links Bendigo with Kilmore and Melbourne; and the Wimmera Highway, which provides a link from Bendigo to Horsham and South Australia.

The Bendigo rail line enables commuting to larger centres for education and employment and access to a range of higher order services. The rail line has two branches north to Echuca and Swan Hill. This movement is between regional townships as well as to and from Melbourne.

The provision of infrastructure and the protection of assets are critical to achieving and managing growth. The provision of safe drinking water is essential and the quality of water sources has a major impact on human health. The region includes Lake Eppalock and Loddon River catchments, and their protection is important to help maintain the region's water supplies. Significant irrigation infrastructure is located in the north of the region, which provides water to extensive areas of irrigated farmland.

Relationships with other regions

The region has strong links with its neighbouring regions. The region is closely linked to the Loddon Mallee North, Hume, Central Highlands and Wimmera Southern Mallee regions, and to Melbourne at its southern end, sharing communities of interest, agricultural landscapes and production, as well as movement of people and goods between these regions. The proximity to metropolitan Melbourne is an advantage to access services and employment, but also puts residential growth pressure on parts of the region that are within 100 kilometres of Melbourne.

The Loddon Mallee South region's relationship with metropolitan Melbourne is important and will continue to influence regional growth. Many residents commute to Melbourne for work, it is the location through which exports take place and its residents are major consumers of regional products and tourism. As transport links with Melbourne are improved, this interrelationship will continue to strengthen.

The links to Loddon Mallee North are through existing passenger rail transport connections to Echuca and Swan Hill with road, freight, farming links and vegetation corridors across both regions. Towns such as Maryborough in the south-west of the region also have a strong relationship with Ballarat, another growing regional city in the Central Highlands region. Bendigo, as the regional city in Loddon Mallee South, is located at the junction of the Calder, Loddon Valley, Midland, Wimmera and McIvor highways, providing connections to interstate and trade routes. Bendigo provides employment and services to communities within and outside the region. Some towns in Loddon Mallee North and Hume regions rely on Bendigo for high level services such as health and education.

Map 4 shows links between Loddon Mallee South and surrounding regions.

6.1 Strategic assets

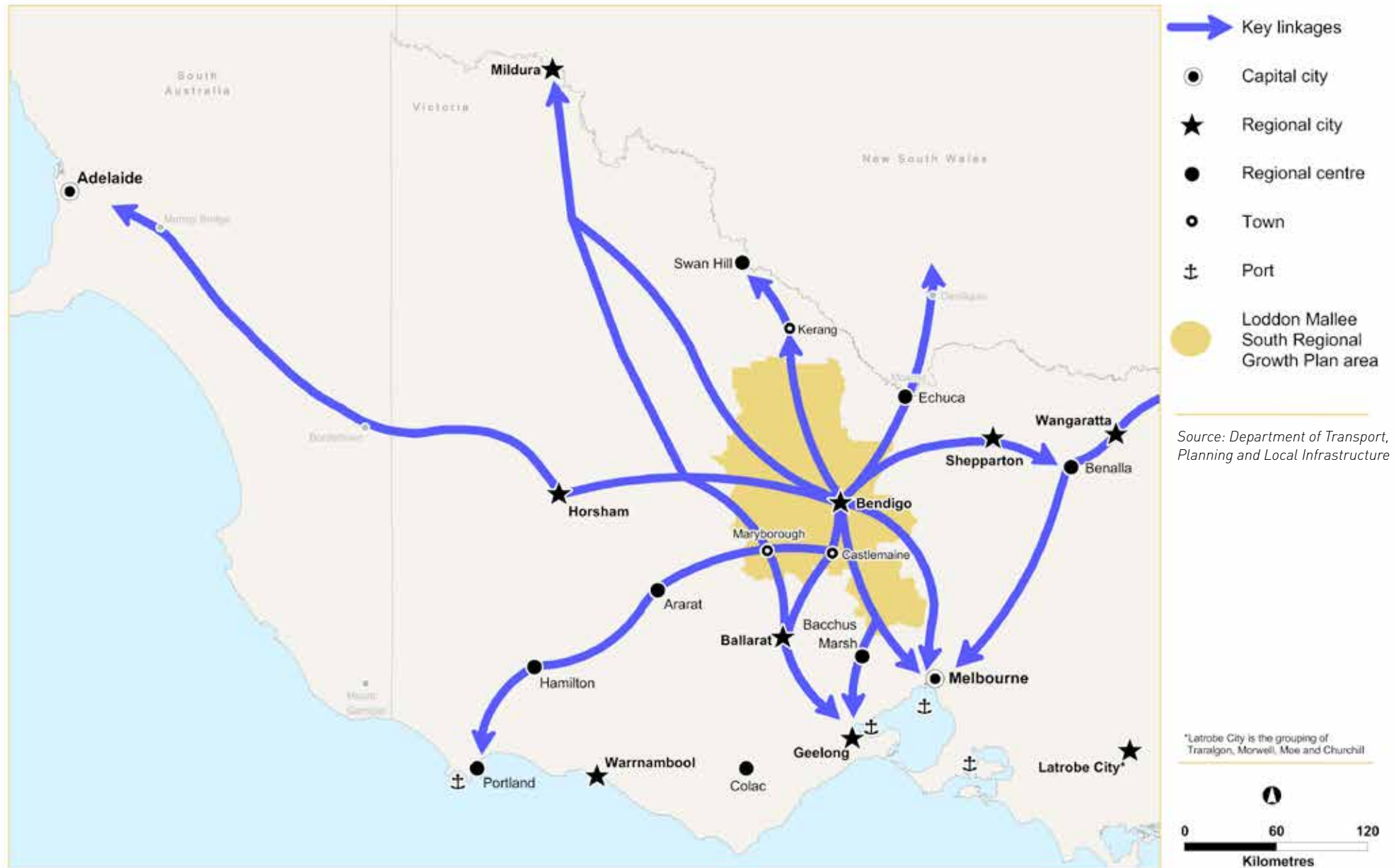
This plan builds on the region's strategic assets to support growth while respecting the natural attributes that characterise the region.

Map 5 shows the key strategic assets including:

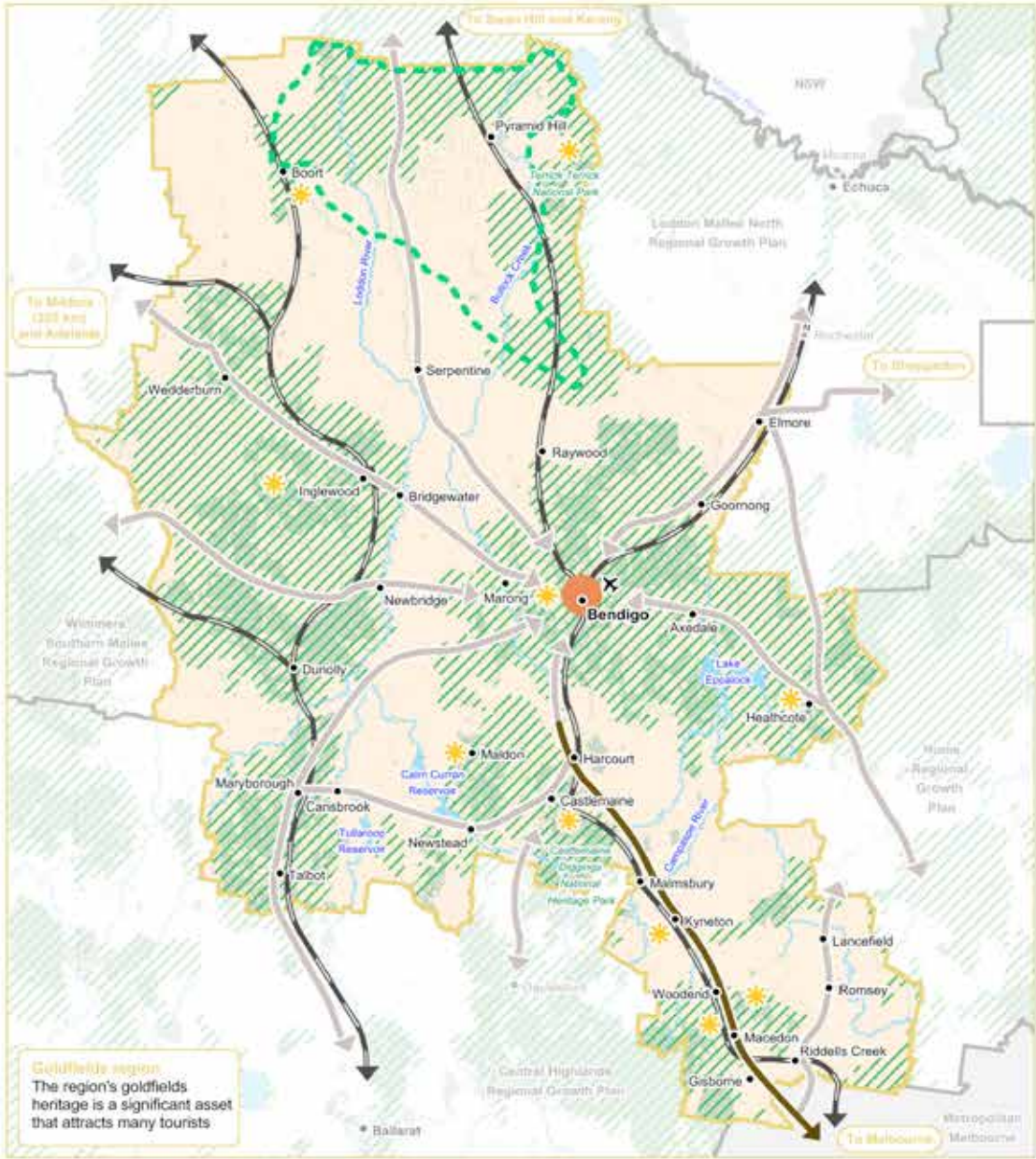
- significant tourism areas, such as the Goldfields region, the Macedon Ranges and Bendigo
- the central role Bendigo plays in providing high level services and facilities to the region and surrounding regions
- the central location of the region within Victoria, making it highly accessible from other areas and a strong location for business
- the Calder transport corridor and other major transport networks, which provide easy access for both passenger and freight transport
- a well-established agricultural industry, including significant irrigation infrastructure
- environmental assets including forests, rivers and water bodies.

PART B | REGIONAL OVERVIEW

Map 4: Links to surrounding regions



Map 5: Strategic assets



Strong transport networks

The region is located centrally in the state and is highly accessible and attractive to live, work and visit. The existing transport corridors provide links within and outside the region, providing for capacity for the region to grow. Strategically renew, maintain and develop infrastructure to maximise opportunities and services to meet anticipated need. The upgrade of Bendigo airport will facilitate existing emergency services access and potential future passenger services.



Water ways

The region contains significant water assets. These rivers, waterways and wetlands contribute to the attractive natural environment and support important ecosystems, heritage values and provide essential water supply to the region's people, industry and environment.

Health, education, finance and research facilities

These assets service communities both within and outside the region. The upgrade to the Bendigo Hospital, the growth of institutions such as Latrobe University and the strong finance sector attract people to the region. They are significant to the economy and growth for the future.

Settlements

The region has a network of connected unique settlements which provide for a variety of lifestyle options. These settlements are nestled within forest and rural areas providing high amenity and attractive landscapes.

Areas containing high value terrestrial habitat⁽¹⁾

Significant areas of high natural value occur across the region that attract tourists, residents and industry and contain important and environmental assets.

Mixed farming

The region is agriculturally diverse and can continue to adapt and evolve due to good soils, efficient flexible farming systems and vast tracts of land.

Irrigation

State significant irrigation.

Public land

Public land protects many natural, amenity and heritage values within the region and generates tourism and forestry income.

Significant tourist area

Includes some significant cultural heritage places and landscapes.

⁽¹⁾ Represents the three highest levels of NaturePrint strategic natural values

Source: Department of Transport, Planning and Local Infrastructure



7. Drivers of change

The Loddon Mallee South region is growing in population, the economic profile is changing and so are the means of rural production and the quality of landscapes. These critical drivers of change have been identified through input from the Loddon Mallee South Regional Growth Plan Project Steering Group and Technical Working Group.

Drivers of change range from global economic trends and impacts to more state and regional considerations.

In summary, the key drivers of change in the region include:

- the proximity to Melbourne and strong transport links of the Calder transport corridor, increasing the movement of people and goods and the interrelationship of employment and tourism
- improved accessibility with connections to the north, east, west and south to support the movement of people and goods
- the relative affordability of housing compared to Melbourne, combined with the regional lifestyle, amenity and culture
- Bendigo, the regional city, providing many higher order services and offering an alternative to Melbourne
- changes in economic sectors, particularly agriculture and manufacturing, influencing employment and population movement within the region
- managing growth within a naturally hazardous landscape, particularly when considering flood and bushfire risk
- federal and state government policy having a significant impact on growth
- impacts of climatic conditions such as long-term droughts, widespread flood and an increase in the number of days of extreme heat and bushfire danger.

8. Challenges for growth

There are a range of challenges for growth in the region, aspects of which this plan seeks to manage or address. These include:

- the uneven distribution of both population and economic growth across the region, and the need to support smaller communities
- managing growth so that it does not overwhelm the environmental and social attributes that are attracting growth
- ensuring land supply for employment and housing
- adapting to the potential impacts of changing climate
- managing growth in a way that protects the environmental assets and natural resources of the region
- ensuring all growth is supported by sustainable reticulated or independent infrastructure services, such as water, power and waste and resource recovery in particular
- supporting residential and commercial growth of centres throughout the region and access to employment, education and services, including from dispersed settlements
- stimulating sustainable growth over the long term while maintaining the distinctive character of the region's rural areas and towns
- maintaining the extent of the region's agricultural areas recognising its importance to the region's economy
- managing the risk to settlements from natural hazards such as bushfire and flood
- supporting capacity enhancements to infrastructure to enable sustainable growth
- future-proofing transport routes to support efficient freight and people movement
- the ongoing maintenance and replacement of ageing infrastructure.

9. Vision for the region

The vision and principles for the Loddon Mallee South Regional Growth Plan have been developed from the Strategic Plan 2010 and in conjunction with the Loddon Mallee South Regional Growth Plan Project Steering Group and Technical Working Group. The vision for the Loddon Mallee South Regional Growth Plan is:

In 2041 our communities continue to enjoy regional liveability with urban accessibility. We are a region with vibrant, innovative, sustainable and connected communities offering a diversity of lifestyles, building on our heritage, natural environment and agricultural landscapes.

The region is home to some 300,000 people by 2041, with access to employment, infrastructure, educational opportunities, healthcare and other services. The region continues to attract new investment and a diverse range of jobs, anchored within a diversifying economy, capitalising on competitive advantages.

10. Principles to achieve the vision

Principles	Future Directions
<p>1. Manage our population growth and settlements</p> <p>Sustainable growth is encouraged to enhance the integrated network of settlements that characterise our region. Our settlements will continue to be attractive places to live, with high amenity and access to services.</p>	<ul style="list-style-type: none"> • Focus growth to the region’s existing settlements with capacity for growth • Reinforce the role of Bendigo as the regional city, offering a range of employment and services as an alternative to Melbourne • Target new growth to settlements including Bendigo, Maryborough, Castlemaine, Gisborne and Kyneton • Plan for settlement growth away from areas of high risk from natural hazards such as bushfire and flood • Favour development proposals that maximise existing infrastructure and provide significant economic or community benefit • Manage settlement growth to limit the impact on agricultural productivity, natural resources and ecological values • Value the region’s unique and connected communities

Principles	Future Directions
<p>2. Strengthen our communities, especially in our small towns</p> <p>Small towns and villages play an essential role in the function and character of the region. Many of the small towns have significant historic or landscape value and offer an alternative lifestyle from the more urbanised and larger centres. Supporting the diversification of the economy of these (and other) small towns is important, as is maintaining social infrastructure and services.</p>	<ul style="list-style-type: none"> • Support the ongoing role of the region’s small towns and settlements • Acknowledge the non-urban population’s contribution to the region • Invest in liveability, infrastructure and urban design initiatives to make the region’s towns great places to live • Build community connectedness and reduce areas of social disadvantage • Build a skilled and adaptable workforce by attracting skilled workers and providing access to high quality education and training opportunities, which provide pathways to employment • Plan for the facilities and infrastructure needed for delivery of education and training to support growth
<p>3. Strengthen and diversify our economy</p> <p>Ensuring access to diverse employment, recreation, retail and cultural activities will develop Loddon Mallee South as a preferred destination and self-sustaining region. Strategic opportunities for the growth of the region’s economic base, including agricultural diversification, minerals and extractive industries and new industries, will also be facilitated.</p>	<ul style="list-style-type: none"> • Enable residents to work and participate in the region by continuing to expand the region’s diverse economy • Leverage greater employment and investment outcomes from growth sectors such as health, education and professional services • Develop employment areas that are located, serviced and sited to take advantage of water, infrastructure, transport and energy connections • Support and develop emerging and potential growth sectors such as tourism, renewable energy, resource recovery and other green industries
<p>4. Improve our infrastructure</p> <p>Good infrastructure enables our communities to remain connected, sustainable and vibrant. Planning for growth is undertaken alongside planning and development of infrastructure to enable economic and settlement growth in strategic locations.</p>	<ul style="list-style-type: none"> • Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement • Provide adequate waste and resource recovery infrastructure and services to support new developments and population growth in the region • Ensure that the current and future operation of major infrastructure of state and regional significance, including highways, railways, airports, communications networks and energy generation and distribution systems, is not adversely affected by urban development in adjacent areas • Prioritise infrastructure that connects the region’s communities through physical and electronic means, such as transport and internet access • Strategically renew, maintain and develop infrastructure to maximise opportunities and services to meet anticipated need • Protect water quality and quantity • Provide for the future of waste management and resource recovery

Principles	Future Directions
<p>5. Improve education and training outcomes</p> <p>Whole-of-life education and training is critical to overall health and wellbeing. Educational attainment brings personal, social and economic benefits to individuals and communities. It also creates opportunity through increased access to employment for individuals and helps to address regional skill shortages and assists in strengthening and diversifying the economy.</p>	<ul style="list-style-type: none"> • Build a skilled and adaptable workforce by attracting skilled workers and by providing access to high quality education and training opportunities, which provide pathways to employment • Plan for the facilities and infrastructure needed for delivery of education and training to support growth
<p>6. Protect and enhance our natural and built environment</p> <p>Settlement growth and development will occur in sympathy with environmental and heritage assets including native habitat, waterways, wetlands, soil health, water quality and Aboriginal cultural heritage and historic heritage. This will involve celebrating how our environmental assets contribute to the liveability of the region, attracting visitors as well as supporting community wellbeing.</p>	<ul style="list-style-type: none"> • Protect and improve the condition of the region’s important environmental assets such as the forests, wetlands and rivers • Protect identified visually important landscapes, and cultural and built heritage places • Plan for settlement growth to occur in locations that avoid areas of high risk from natural hazards such as bushfire and flood • Manage settlement growth to limit the impact on agricultural productivity, natural resources and environmental assets • Maintain the non-urban breaks between settlements • Minimise the impacts of land use change and development on areas with significant environmental assets
<p>7. Ensure our food, water and energy security</p> <p>Our farming and food production areas will be strengthened to optimise opportunities for the production of energy. Protection of our water sources and infrastructure is important to sustain growth for our urban and rural areas.</p>	<ul style="list-style-type: none"> • Facilitate ongoing agricultural productivity and investment in high value agriculture • Support ongoing adaptation and flexibility for the agricultural sector • Facilitate ongoing agricultural productivity and new opportunities that respond to the potential impacts of climate change • Support the sustainable use of rural land, including the development of regional catchment strategies and other suitable tools • Encourage and facilitate development in renewable energy, waste to energy, carbon sequestration and other new energy opportunities • Protect water quality and quantity
<p>8. Collaborate to achieve our region’s goals</p>	<ul style="list-style-type: none"> • Utilise existing regional and local networks, for example, Regional Development Australia, the Regional Management Forum and local community planning networks, and other suitable forums to share information, identify agency leads and collaborate on regional projects



Canola crop, Central Goldfields Shire

PART C | TOWARDS THE REGIONAL GROWTH PLAN — REGIONAL LAND USE FRAMEWORK

11. Regional economy

Future directions

- Enable residents to work and participate in the region by continuing to expand the region's diverse economy
- Leverage greater employment and investment outcomes from growth sectors such as health, education and professional services
- Develop employment areas that are located, serviced and sited to take advantage of water, infrastructure, transport and energy connections
- Support and develop emerging and potential growth sectors such as tourism, renewable energy, resource recovery and other green industries

Overview

This section outlines the existing and potential future economic sectors and strengths of the Loddon Mallee South region, including its business, industry and services, natural resources and agricultural assets.

Economic growth and prosperity can improve with population growth. Many people choose to live in the region for liveability reasons, but employment options and economic growth are critical for a viable future. This section outlines the future directions and actions to grow the regional economy and regionally important industry sectors.

To build on the region's economy, planning for employment growth needs to occur alongside planning for population. There needs to be adequate serviced and zoned land in strategic locations and appropriate levers to attract and maintain businesses in the region. Developing a broad range of employment options that build on existing economic strengths and opportunities will contribute to the overall wellbeing of the region's communities.

The three structural drivers of growth in the economy are productivity, labour force participation and population. Loddon Mallee South's population growth rate over the past decade has been less than the state average but higher than other regional areas. Labour force participation rates, and the latest unemployment figures, were lower than the state average. However, the region has performed comparatively well in terms of productivity growth⁷.

While the region does not yet have a regional economic development strategy, recent work undertaken by Regional Development Victoria on the Loddon Mallee South's economic outlook has informed the directions outlined in this plan. More information about this regional economic work and associated reports is contained in the background report.

⁷ Regional Economic Profile, Loddon Mallee South, Regional Development Victoria, 2012.

The regional economy is diverse and based on traditional sectors such as manufacturing, earth resources and agriculture as well as services-based sectors such as healthcare and finance. The region encompasses a broad range of agribusiness activity including agriculture, forestry, fishing and processing. Livestock products, including milk production, livestock processing and crops, are strong basic economic sectors. These are supported by growing service sectors including finance, health and education, as well as retail and wholesale trade and tourism-related industries.

Bendigo, as the regional city, is the powerhouse of the region's economy, and will accommodate the majority of future jobs growth. A detailed discussion of this regional city and its settlement and economic role in the region is contained in Section 13.2 Bendigo – the regional city.

It is estimated that around 50,000 new jobs will be required to support a projected future additional regional population of 120,000 people. This assumes one job per household with no net increase in commuter travel to Melbourne or outside the region.

The Calder transport corridor has historically influenced settlement patterns. Future strategic settlement needs to be appropriately located, serviced and sited to take advantage of water, infrastructure, transport and energy connections. Improved transport links and services within the region and the regional rollout of the National Broadband Network, when combined with other targeted initiatives, seek to increase current workforce participation levels and reduce commuting to Melbourne. Increased workforce participation within the region improves economic and social activity, a key direction of this plan.

11.1 Building on economic strengths

Each municipality in the region has existing and emerging economic strengths that can be leveraged to further develop a regional economy.

While each local government area has its current and future strengths and opportunities, the development of a truly 'regional' economy has wider benefits for the region. This includes taking advantage of:

- a wide variety of population-driven jobs, which includes health, education, finance and a fast-growing professional services sector, and underpins the region's economic success
- higher value agricultural production, food processing and freight links within the region and to the north
- existing earth resource industries
- competitive environment and conditions, such as land prices and labour costs, for industry to relocate to the region
- the already strong health, education, finance and professional service sectors in Bendigo
- the natural and cultural tourism assets across the region
- existing transport networks that enable movement of goods and people within and through the region.

Ensuring the future economic success of the region requires a variety of levers, investment and initiatives that are beyond the consideration of this plan but are considered in the Strategic Plan 2010 and other initiatives and actions.

Bendigo, as a growing regional city, is the key service centre for its hinterland and the significant economic and employment base for the region. The regional city's economy has strengthened and diversified in recent years, with employment now more orientated towards services industries.

Key shifts in the contribution of various industries to the regional economy include:

- the healthcare and social assistance sector, including justice facilities, has emerged as an important sector for regional employment
- the construction sector is important to regional employment and workforce expenditure on other goods and services
- the finance and insurance services sector is one of the fastest growing employment sectors in the region
- the professional, scientific and technical services sectors are growing
- the mining sector had the highest employment growth rate over the past decade but accounted for only two per cent of total employment in the region in 2011
- the manufacturing sector, while still being one of the largest and most important regional sectors in terms of output and employment, has been out-performed by other sectors.

There is a range of emerging opportunities in the region that will be supported to develop and diversify the economy. These include:

- innovation, research and development in, for example, medical and agriculture and animal industries, and renewable and alternative energy
- telecommunications
- defence equipment manufacturing
- engineering and transport-related production
- equine industry
- hospitality and related food and wine products and services
- tourism, including nature-based and agritourism
- agricultural diversification and intensification.



Wine production, Loddon Shire

11.2 Working in the Loddon Mallee South region

Business, industry and services

Health, finance, and education

The economic drivers of population growth in the Loddon Mallee South region include health and community services, higher education, vocational training, secondary education, specific government services, banking, including Australia's only bank headquartered in a regional city, and business services.

Infrastructure investment in the already strong education and health sectors is expected to ensure these sectors flourish.

The existing road and rail network, including recent upgrades, has influenced locations for economic growth. There are opportunities to promote further growth in locations that are well serviced by transport networks and with the capacity for transport enhancements.

Manufacturing

The region has a traditional reliance on a strong manufacturing base. The manufacturing sector is currently the largest employer across all local government areas except for Loddon Shire, where agriculture dominates⁸.

Dominant manufacturing sectors include food and beverage, metals and engineering, transport manufacture, building products, and textiles and clothing. Currently the local manufacturing sector has a high degree of expertise as evidenced by the development of new technologies exported throughout the world⁹. Defence equipment manufacturing and engineering has emerged as a strong sub-sector.

There are opportunities to further support the manufacturing sector through developing supply chain linkages, particularly with the Loddon Mallee North region where there are opportunities to process products from the north. Attracting significant investment in high value agricultural production, processing and manufacturing is important to growing this sector.

Ensuring adequate industrial zoned land is critical to attracting and maintaining manufacturing businesses and industry in the region. The development of the Marong Business Park is a significant project aimed at attracting and growing such businesses in the region.



City Family Hotel and Bendigo Bank, Bendigo

⁸ Street Ryan, 2012, Loddon Mallee South Economic Profile and Outlook, p12.

⁹ Department of Business and Industry, 2011, "Loddon Mallee region, Victoria Australia, an ideal investment location"

Tourism and recreation

The Loddon Mallee South region is an attractive tourism destination known for its natural assets and landscapes, with popular activities including recreational fishing, bushwalking, cycling and horse riding. Visitors are drawn to the region for its rich goldfields and cultural heritage, attractive towns, food and wine, and a variety of festivals and events. These visitors help support art and recreation, tourism and hospitality services.

The Bendigo Art Gallery has hosted significant events in recent years. Further growth in tourism across the region will require adequate accommodation and facilities, promotion and continued investment in existing tourism infrastructure, from walking trails to convention centres. Castlemaine Diggings National Heritage Park is a significant tourism asset, for which World Heritage designation is being sought to underpin tourism.

The region's natural tourism assets, such as forests and rivers, need to be protected from development impacts. There may be future opportunities, in accordance with government policy and guidelines, to attract private investment in appropriate tourism infrastructure on public land to benefit regional tourism. Flexibility for the development of agritourism opportunities, in conjunction with agricultural uses, is supported.

Natural resources

Energy generation

Innovation in new technologies, farming practices and renewable markets will foster opportunities for carbon sequestration, biomass and renewable energy production. On-farm options for new energy generation include bioenergy and biofuels produced from agriculture and forestry wastes through various future technologies. Many technologies can occur concurrently with the primary agricultural use of the land. Programs and land use controls that allow for such uses are both required to facilitate these activities on farms.

Carbon market initiatives and energy generation activities, and their potential effect on the long-term agricultural viability of high value agricultural land, need to be carefully considered in land use policy. These same carbon initiatives and energy generation activities can coexist and complement agricultural land uses, supporting diversification and growth opportunities for the agricultural sector. Further work is required in the region to identify strategically important land for agriculture and alternative uses, such as energy production.

Earth resources

Renewed interest in the region's gold deposits over recent years has grown into a significant driver of the local economy. Goldmining has contributed direct benefits through growth in related industries such as quarrying services and hydraulic manufacturers to meet the needs of the sector.

Emerging mineral sands mining in the Loddon Mallee North region also has benefits and impacts on the southern region in relation to industry links and freight (refer also to Section 14.2 Transport networks).

Significant deposits of earth resources, including gold, and sand and stone resources have significant economic potential for the region and it is recognised that residential growth or infrastructure developments in proximity to extractive industry resources, especially quarries, can lead to constraints in earth resources operations. Appropriate buffers to protect existing and new activities need to be recognised. Retaining access to locally sourced construction materials such as sand and stone can help to reduce construction costs, which will benefit regional growth.

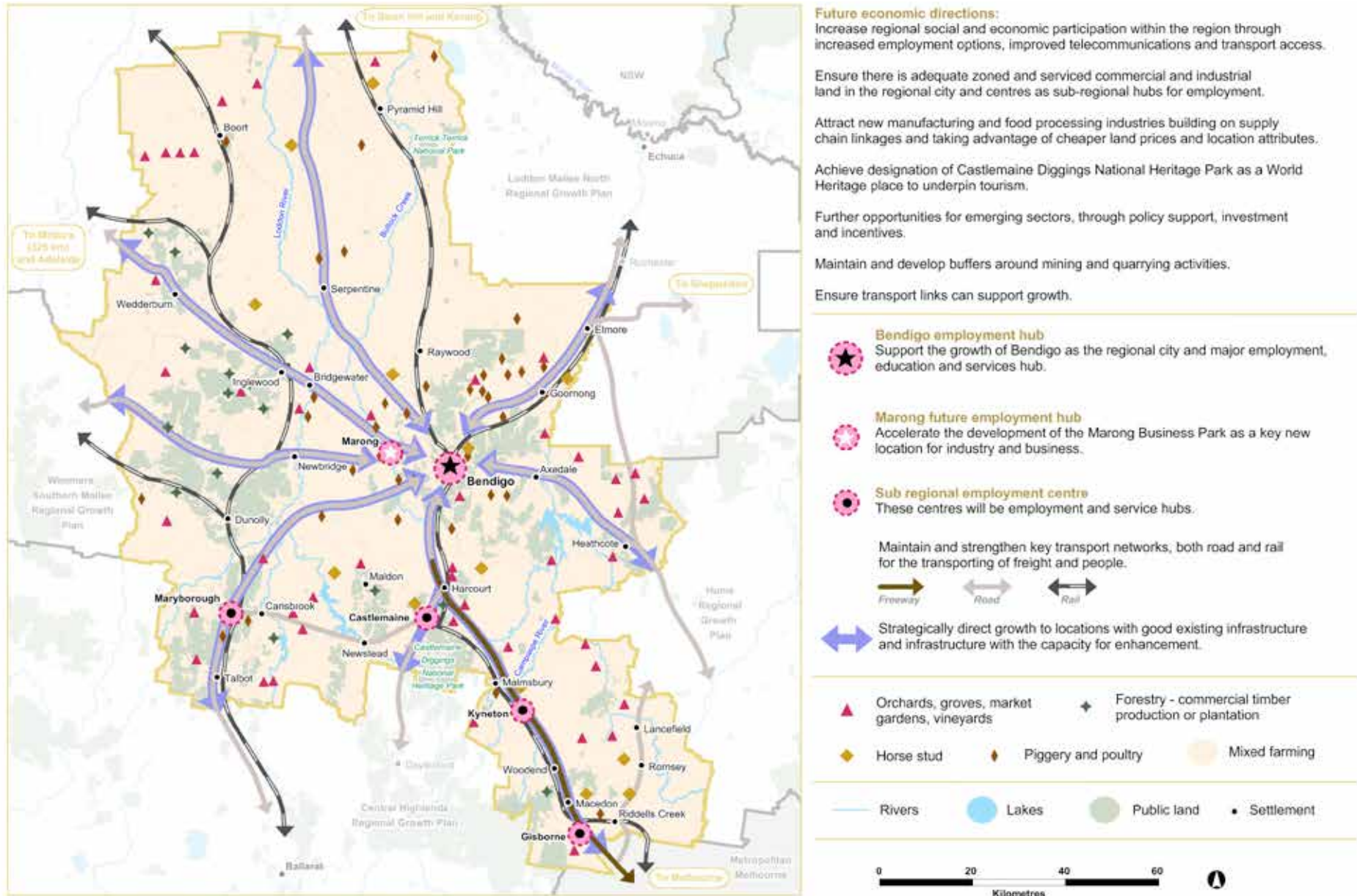
Extractive industry interest areas occur within the region, which contain areas of known future interest to the extractive minerals industry, for example, sand and stone. Areas are based on suitable geological occurrence and also take into account existing local government planning schemes. They are intended to provide a guide to local government in developing future planning policy. In response to the Economic Development and Infrastructure Committee's *Inquiry into greenfields mineral exploration and project development in Victoria*, the Victorian Government has committed to various activities that will undertake further data gathering and planning to better protect the state's extractive resources for future development. The outcomes of these activities may have implications for future planning provisions. Extractive industry interest areas located in the region are shown on the map included as figure 21 in the background report.

Future economic land use actions

- Support the growth of Bendigo as the regional city and major employment and services hub
- Increase social and economic participation within the region through increased employment options, improved telecommunications and transport access
- Ensure there is adequate zoned and serviced commercial and industrial land for employment in the regional city and centres as sub-regional hubs
- Accelerate the development of the Marong Business Park as a key new location for industry and business
- Attract new manufacturing and food processing industries to build on supply chain linkages and take advantage of cheaper land prices and location attributes
- Achieve designation of Castlemaine Diggings National Heritage Park as a World Heritage place to underpin tourism
- Maintain and develop buffers around mining and quarrying activities
- Identify, manage and facilitate access to natural resources where appropriate, including sand and stone, minerals, timber and renewable energy potential
- Increase opportunities for emerging sectors through policy support, investment and incentives
- Protect existing transport corridors and precincts, including opportunities for capacity enhancement, to support economic growth

Map 6 shows future economic directions for land use in the region.

Map 6: Future economic directions



Source: Department of Transport, Planning and Local Infrastructure

11.3 Agriculture

Future directions

- Facilitate ongoing agricultural productivity and investment in high value agriculture
- Support ongoing adaptation and flexibility for the agricultural sector
- Facilitate ongoing agricultural productivity and new opportunities that respond to the potential impacts of climate change
- Support the sustainable use of rural land, including the development of regional catchment strategies and other suitable tools
- Encourage and facilitate development in renewable energy, other new energy opportunities and in carbon sequestration activities
- Protect water quality and quantity

Overview

The majority of the Loddon Mallee South region is rural in character, a significant portion of which is used for agricultural production. The region is agriculturally diverse, with irrigated dairying, cropping and grazing in the north-east and large-scale productive cropping, dry land and mixed farming in the north-west (predominantly in Loddon Shire). Wineries, orchards and olive groves are located throughout the region, with clusters in the Macedon Ranges, Harcourt Valley and around Bendigo. Intensive animal industries are a significant economic contributor. Mixed farming also occurs in the south of the region, such as in the Central Goldfields and Mount Alexander shires.

While agriculture remains an important economic sector for the region, according to research undertaken by Regional Development Victoria (2012), its growth has declined over time. Nevertheless, the region has a clear goal to support and promote the growth of its agricultural sector.

Priority Action 3.2 of the Strategic Plan is to, *“Attract investment in high value agriculture production and added-value processing, including in intensive agriculture-related industries leveraging off the region’s strengths of good soils, efficient, flexible farming systems and vast tracts of land to deliver new jobs and encourage efficient resource use”*.

Agriculture provides employment and exports for the region, particularly for Loddon Shire. Beyond the economic significance, the continued viability of agricultural areas is critical to land and environmental management, social wellbeing for rural communities and an important aspect of the regional landscape. With the climate and economy changing, the ability of farming communities and practices to adapt will be critical to a viable future. Support is necessary for farming communities to transition from traditional irrigation practices towards investments in new technologies and diversification of economies.

Cropping and grazing

The size, scale and products of the region vary significantly, with Loddon Shire the predominant rural production area. Productive dry land farming is also a feature of Central Goldfields Shire. There is a range of mixed farming and grazing, dry land farming and cropping on broadacre land. Generally the soil type and water availability (from irrigation networks, rainfall, rivers and groundwater supplies) enable this productivity. In the face of climate change, the region may experience reduced average rainfall and stream flow, which may result in reduced availability of water for irrigated and non-irrigated enterprises and for communities. Changes in average temperatures may change the mix of industries that can be viable into the future, but may also generate opportunities for some.

A consistent regional approach to identifying strategically important agricultural land is required. The North Central Catchment Management Authority is leading the Innovative Farming Program that aims to assist farming communities to achieve a confident and prosperous region,

healthy resilient environment, sustainable profitable farming and regional growth. The reformed rural zones are to be applied to protect large-scale farming and focus any smaller rural lot development only to strategically low value land.

Intensive agriculture

As discussed in the Loddon Shire Rural Zones Review (2012): “*Intensive agriculture refers to production systems that require high capital inputs in terms of buildings, storage and infrastructure. Examples are poultry and egg production, piggeries, dairy farming and some types of horticulture*¹⁰.” Feed needs to be brought in as stocking rates are higher than can be fed on acreage, requiring transport access and movements.

Within the region the most common forms of intensive agriculture are broiler farms, egg production and piggeries. Future expansion of these industries is sought with strong links to other emerging strengths in food processing and freight-related industries.

Areas most suited for further development of these industries are in the north and west of the region where there are large farms with appropriate separation distances for biosecurity and amenity protection. While intensive agriculture is encouraged in these areas, this does not prevent these industries exploring other locational opportunities where appropriate separation distances can be achieved. These industries need to be located with access to water and electricity infrastructure and proximity to processing facilities and markets. Planning for the establishment and expansion of these industries needs to occur in a manner consistent with orderly and proper planning and protection of the environment.

¹⁰ Loddon Shire Rural Zones Review 2012, p30.

¹¹ Macedon Ranges Equine Strategy 2012, p2.

Equine industry

The equine industry is an important existing and emerging sector in the region. Currently most prominent in the Macedon Ranges “*the horse forms a large part of the local economy from the breeders to the support industries such as vets, farriers, dentists, trainers and instructors, suppliers and manufacturers of horse-related products as well as fencing and other horse property building and maintenance*¹¹.” The industry also contributes to the community through its recreational activities such as pony and adult riding clubs, riding for the disabled, trail riding clubs, dressage clubs and local competitions and training.

There are links to other equine-related businesses in Bendigo, and further opportunities to develop the industry in the Central Goldfields region, leveraging from the existing racing facilities. A key to further developing the equine industry is applying zones or nominating precincts in suitable locations that allow for the optimum operations of equine activities.

Orchards, vineyards, groves and plantations

There are existing highly productive and emerging boutique industries throughout the region including vineyards, olive groves and orchards mostly on medium or smaller farming allotments. A variety of complementary activities can be associated with these businesses, from farm-gate sales to wine tasting and events. In many cases, these rural uses are linked to the region’s tourism potential, for example, the food and wine trails and farmers’ markets that exist in the region.

One of the world’s largest single estate olive groves is located near Boort, and includes an on-site olive processing plant to make premium extra virgin olive oil.

There is opportunity to develop regional agribusiness and agritourism strategies. Identification of appropriate clusters and locations needs to occur combined with appropriate rural zones that allow for additional complementary uses to be developed.

Rural small lot development

There is ongoing pressure to provide for small lot rural living development within the region. The intensity of this pressure, the justification for the use and development of such lots and housing, and the demand and supply of rural living land varies significantly across the region. In some locations, smaller lots already exist but have been restricted for the construction of dwellings, while in other locations there is pressure to establish smaller lots from larger productive agricultural land holdings.

While these proposals should be dealt with on a case-by-case basis at a local level, the development of a regional approach to small lot development would assist and support decision making. This approach would be informed by the classification of strategically important land and the appropriateness of development within declared water supply catchments.

Smaller lot development should be located to:

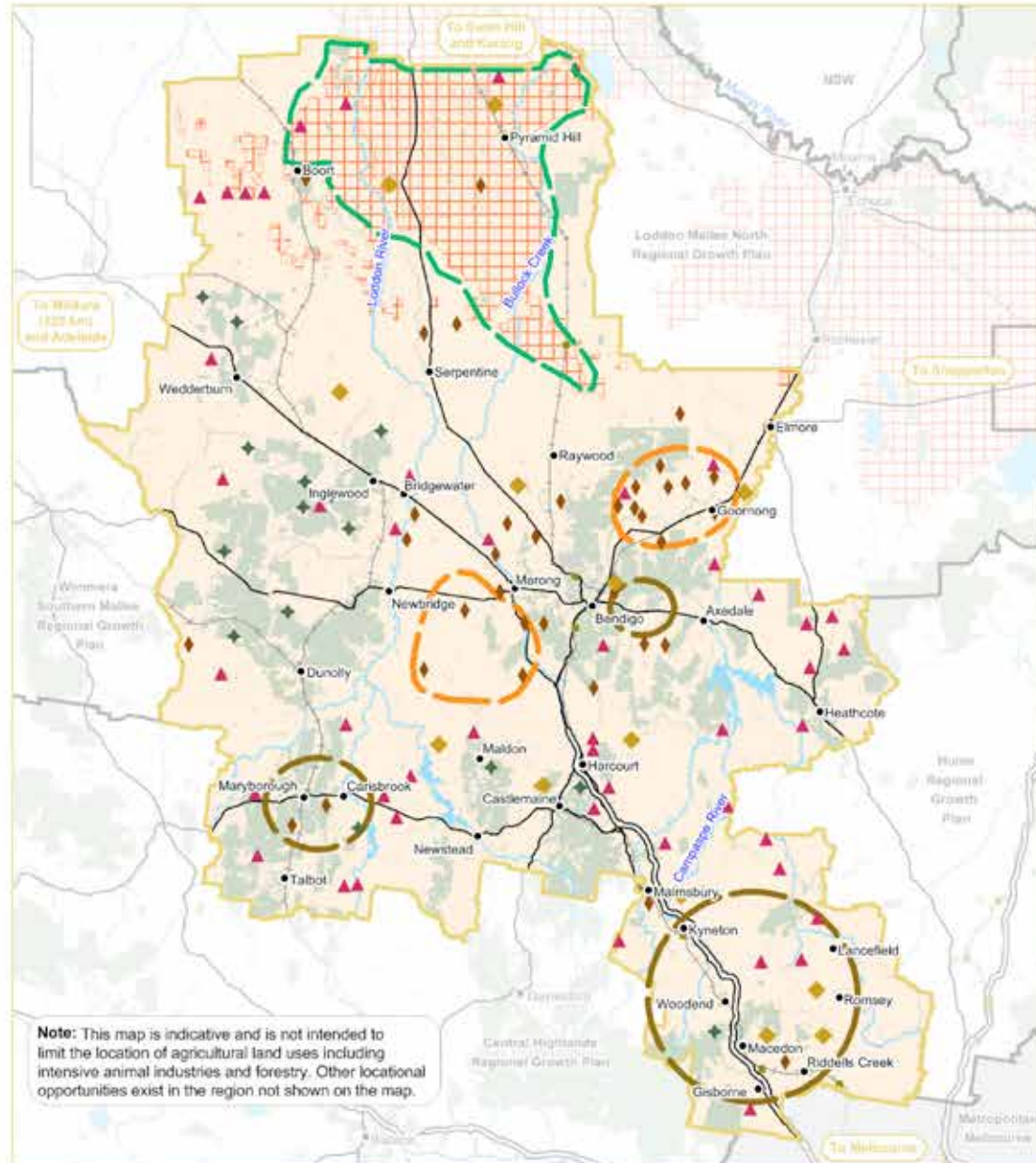
- integrate with existing urban areas
- avoid or complement strategically important, highly productive agricultural land, natural resources, significant natural hazards (especially bushfire), significant landscapes, environmental and cultural heritage assets
- assist to achieve better land use management outcomes.

Future rural and agricultural land use actions

- Support agricultural activity through management of land use conflicts and appropriate land use strategies
- Identify emerging agribusinesses and location clusters including the equine industry, and intensive animal industries such as cattle feed lots, piggeries and poultry farms
- Identify agribusiness and tourism clusters in the region and implement appropriate land use measures to facilitate agricultural tourism activities through the application of the reformed zones
- Develop a regional approach to small lot development using the reformed rural zones implementation
- Develop a consistent regional approach to identify strategically important agricultural land, land use clusters and links to processing, manufacturing and freight opportunities in the region through a combined food, freight and energy strategy for the region
- Support the increased efficiency of irrigated agriculture
- Work cooperatively with catchment management authorities to develop a carbon action plan

Map 7 shows future directions for rural land use in the region.

Map 7: Future rural land use directions



Note: This map is indicative and is not intended to limit the location of agricultural land uses including intensive animal industries and forestry. Other locational opportunities exist in the region not shown on the map.

These directions apply to the whole region:
Classify strategically important agricultural land, land use clusters and links to processing/manufacturing and freight opportunities through a combined food, freight and energy strategy for the region.

Support transitioning of towns from changes to irrigation through investment and diversification of their economies and application of flexible zoning provisions where appropriate.

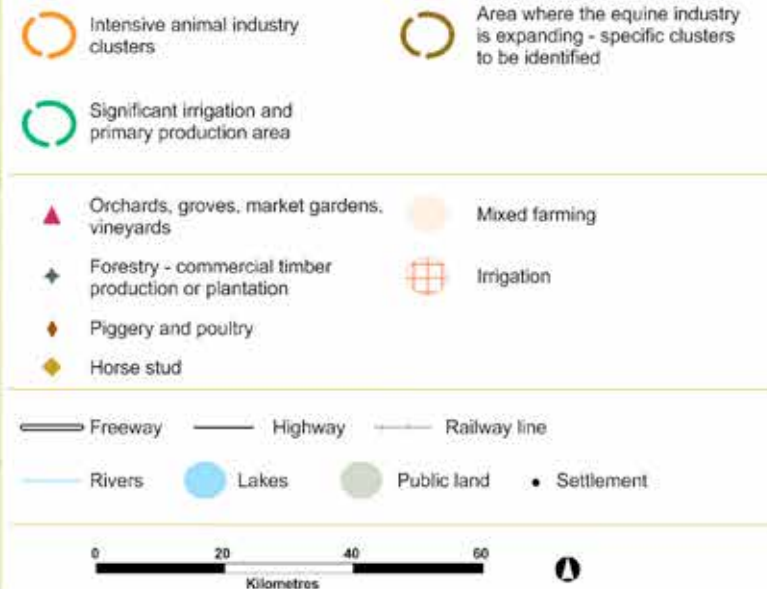
Work cooperatively with the North Central Catchment Management Authority to develop a Carbon Action Plan which includes the majority of the Loddon Mallee South region. Support agricultural activity through management of land use conflicts and appropriate land use strategies.

Identify emerging agribusinesses and location clusters, for example, for the equine industry and intensive animal industries including cattle feed lots, piggeries and poultry farms.

Identify agribusiness and tourism clusters in the region. Implement appropriate land use measures through the application of new zones to facilitate agricultural tourism activities.

Develop a regional approach to small lot development using new rural zones implementation.

Source: Department of Transport, Planning and Local Infrastructure



12. Environment and heritage

Future directions

- Protect and improve the condition of the region's important environmental assets such as the forests, wetlands and rivers
- Protect identified visually important landscapes and cultural and built heritage places
- Plan for settlement growth to occur in locations that avoid areas of high risk from natural hazards such as bushfire and flood
- Manage settlement growth to limit the impact on agricultural productivity, natural resources and environmental assets
- Maintain the non-urban breaks between settlements
- Minimise the impacts of land use change and development on areas with significant environmental assets

Overview

The Loddon Mallee South region has rich and diverse environmental and heritage assets. The Strategic Plan 2010 recognises that the natural ecosystems, rural landscapes and water catchments of the region are critical to the region's attractiveness, liveability, cultural heritage and economy. The Strategic Plan 2010 aims to protect and enhance the region's natural and built environment and to foster the resilience and intrinsic values of the natural environment and farming systems. It also recognises that the Aboriginal cultural heritage and historic heritage, particularly goldfields heritage, in the region provide tourism opportunities and have a significant influence on land use patterns and decisions.

The region will benefit from its significant environmental and heritage assets through advancing sustainable economic diversification opportunities including tourism, renewable energy and green industries. Detailed land use planning consideration is required to manage the impacts of growth. These planning considerations are illustrated in *Map 8 – Future environment and heritage directions*. Key aspects of the region are explored further in Section 12.1 Environment and heritage assets and Section 12.2 Natural hazards and risks.

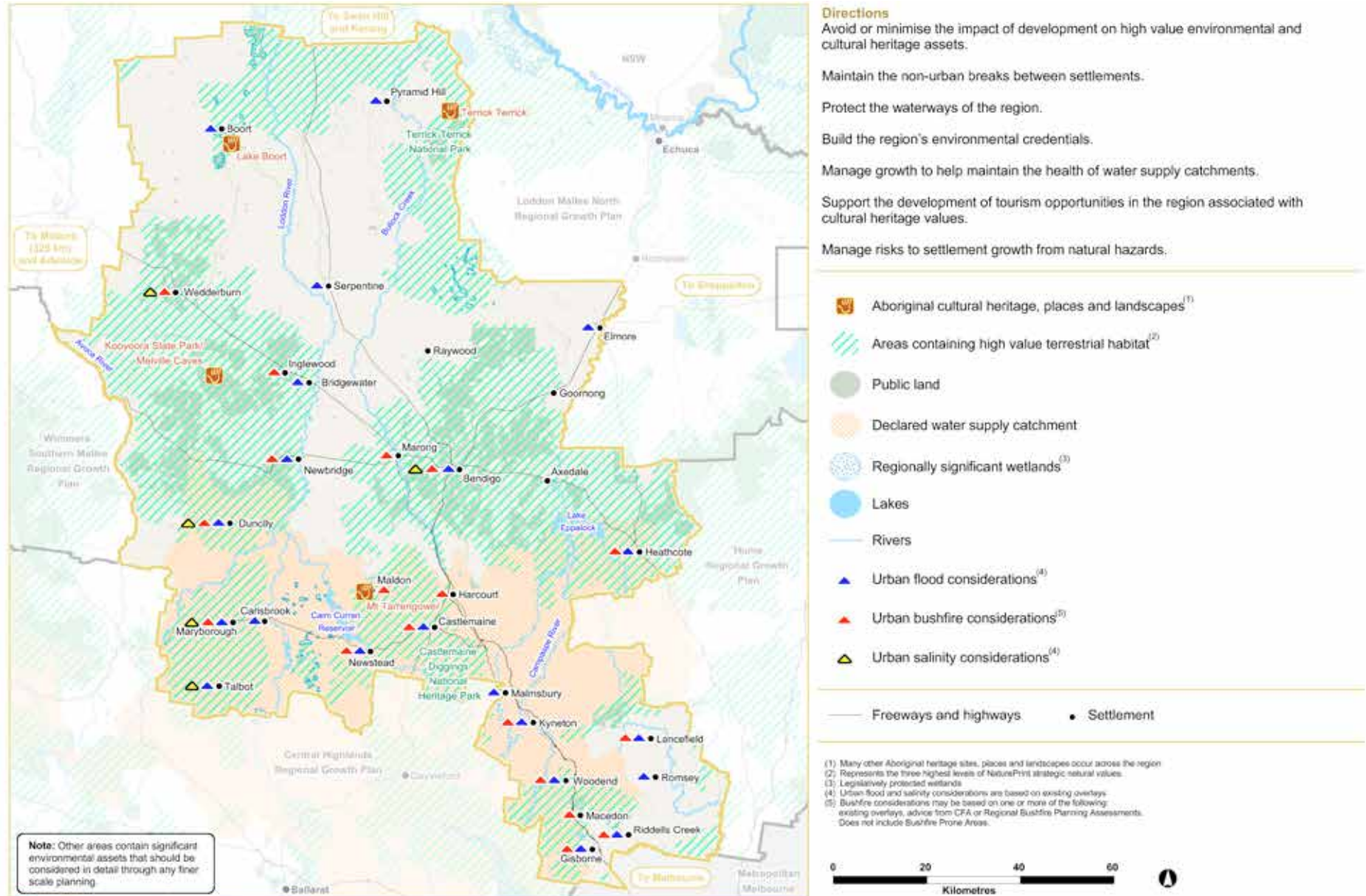
Pressure for urban and rural residential development in areas of high amenity or natural value, such as the Macedon Ranges, presents a challenge for land use planning, but also presents opportunities for tourism and other economic diversification in the region¹². Communities in these areas value their natural environment highly and want to see it protected from inappropriate development. The impacts of land use change on surface water quality and quantity need to be considered especially in declared water supply catchments. Balancing these pressures, along with the natural hazards associated with these areas, such as bushfire, flood and salinity, are a key challenge for this plan and more detailed local planning.

The North Central, Goulburn Broken and Port Phillip and Westernport catchment management authorities coordinate investment into the protection and enhancement of the environment throughout the region, along with public land managers. Regional catchment strategies are the primary integrated regional strategies for achieving improved environmental outcomes in the region. Regionally significant environmental assets¹³ are clearly described in these regional catchment strategies. This plan can complement catchment management authority activities and initiatives through appropriate land use planning mechanisms. Regionally significant assets identified in regional catchment strategies should be considered in local planning decisions.

¹² Providing ecosystem services through market-based approaches (including competitive tenders such as EcoTender and BushTender) can provide farmers with income for undertaking environmental works that conserve and enhance the environment.

¹³ For the purpose of this plan, regionally significant environmental assets cover all assets that are of regional, state, national or international significance.

Map 8: Future environment and heritage directions



Source: Department of Transport, Planning and Local Infrastructure

12.1 Environment and heritage assets

Environmental and heritage assets are essential to the Loddon Mallee South region's continued growth, providing foundations and attractors for many industries and people. Protection and enhancement of environmental assets present many opportunities for the region and will be managed in the context of growth. Key environmental and heritage assets are discussed below. More detail on the region's environment and heritage assets, including more detailed mapping, is included in the background report.

Cultural heritage

A priority action of the Strategic Plan 2010 is to establish Australia's first heritage region, linked to the goldfields heritage, as an iconic destination to increase awareness of our natural heritage and promote tourism in the region. A major initiative, Goldfields – Australia's Premier Heritage Region, is under way in partnership with the neighbouring Grampians region to establish the Castlemaine Diggings National Heritage Park as a World Heritage site and to have the whole goldfields region recognised worldwide as Australia's premier heritage region. The Strategic Plan 2010 also contains initiatives to develop cultural heritage and other tourism opportunities around natural heritage, such as a Box-Ironbark interpretation program.

Registered Aboriginal Parties will have an important role in planning place-based activity and development, and there are benefits to engaging with the relevant Aboriginal community organisations early in strategic planning processes. Currently the Dja Dja Wurrung Clans Aboriginal Corporation, Taungurung Clans Aboriginal Corporation and the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc. have legislated responsibilities relating to the management of

Aboriginal cultural heritage places in the Loddon Mallee South region. This arrangement recognises the key role that Aboriginal people have in the protection and management of significant Aboriginal cultural heritage places. Native title is also held over Crown land in a significant portion of the region by the Dja Dja Wurrung Peoples.

Native vegetation

Aside from the region's well-known significant forested areas, such as the Macedon Ranges and Box-Ironbark forests, there are also significant areas of native grasslands, often on private land. These assets pose a challenge for land use planning, but also create opportunities around nature-based tourism and access to income from providing ecosystem services.

Key initiatives of the catchment management authorities include improving the quality of remnant habitat and increasing connectivity between remnant vegetation, especially significant vegetation asset areas as identified in the regional catchment strategies. The Strategic Plan 2010 further supports this through its priority action 6.1 to "engage the Loddon Mallee South community in actions such as the BushTender program and Landcare activities to protect rural land and improve connectivity of native vegetation along major corridors, ultimately linking to the Murray River".

Other initiatives and opportunities in the region to enhance the native vegetation coverage in the region include capitalising on ecoMarkets, biodiversity offset markets and carbon markets to link high value native vegetation on private land to public land reserves. Additional opportunities are emerging in the region since the Strategic Plan 2010 was released, including enhancing native vegetation coverage in the region through capitalising on initiatives that support national and global action to reduce greenhouse gas emissions, such as carbon markets.

Regional natural resource management planning and land use planning will need to consider any potential increase in natural hazards as a result of such activities. This is particularly relevant to any changes in landscape fire and flood risks that may result from increasing treed vegetation cover, especially where occurring in close proximity to settlements.

Waterways

The region covers parts of the Avoca, Loddon, Campaspe, Goulburn, Maribyrnong and Werribee river catchments. Rivers and wetlands are highly valued by regional communities for their intrinsic environmental values and also support communities by providing water to farms, towns and industry. Waterways play a key role in providing tourism and recreational opportunities and support significant cultural values.

Many rivers and wetlands within the region are critical for supporting tourism within smaller settlements, for example, Little Lake Boort and the Loddon River at Bridgewater. Land use planning can help address some of the threats to the region's highly valued waterways from urban and rural land use changes, such as changes to flow regimes and poor water quality. Water supply is discussed in Section 14 Regional infrastructure.

Catchment health

Significant pressure for increased urban and rural settlement exists in some declared water supply catchments, which needs to be carefully managed to protect both water quality and water supply. The rapid growth of domestic and stock dams that is occurring in rural residential areas across the region will have implications for water supply, particularly in drier years. The impacts of increased density urban development, such as increased pavement area and runoff, and from some rural activities, such as intensive animal industries, can also impact on the rate and quality

of water runoff to waterways through drainage lines. The overall impact of activity within water supply catchments needs to be constantly monitored and managed.

Land use planning decisions in these areas need to consider the appropriate management of risks to water quality, for example, from wastewater. Councils and water authorities need to work closely together to identify and plan for rural residential developments in these areas. Councils may need to consider reviewing their domestic wastewater management plans to support this planning. As new technologies and guidelines emerge relating to development in these catchment areas, the region will need to consider their implications on the type of settlement and economic activity that could then emerge, and carefully plan for these in a way that maintains and protects catchment health. This is especially important within the Loddon Mallee South region, given that most of the south of the region is part of declared water supply catchments (refer to *Map 8 – Future environment and heritage directions*).

Soils

Healthy and productive soils are essential for the continued economic success of the region, particularly for agricultural enterprises. Land use planning can assist in the protection of the region's soil resource by ensuring that land use change does not disturb soils to a level that could result in deterioration of the soil asset within the region, or further contribute to the pollution of waterways in any significant volume. Overlays such as the Environmental Significance Overlay or the Erosion Management Overlay can be used to enhance the protection of soils across the region. Protection of significant agricultural land through suitable planning mechanisms will also help to protect the region's soils.

12.2 Natural hazards and risks

The risks from natural hazards need to be explicitly considered in both strategic and statutory planning to ensure the safety of settlements from, for example, bushfire and flood. An overview of the regional planning implications of natural hazards is provided below. More detail on natural hazards, including mapping, is included in the background report.

Flood

There are a significant number of urban settlements within the Loddon Mallee South region that are exposed to flood risk (see Maps 8 and 9) which needs to be considered in future planning for growth. Wider landscape risks are discussed in the background report. It is important for this plan to address any increased hazard posed by potential land use change in the region. The risks presented to land use from flood hazards must be considered in regional and local planning decisions. These decisions should be based on the best quality information on flood hazards to minimise risk to life, property and infrastructure.

Flood mapping is critical to the continued success of land use planning. Mapping of the January 2011 flood in some areas, the highest on record, is still being translated into planning scheme overlays. New flood investigations will help inform a consistent and accurate approach to flood risk management in planning schemes across the region.

With a changing climate, there will be an increased risk of flood. Though there will be fewer rainfall days, there is likely to be an increased incidence of heavier rainfall events, which may result in riverine flood, flash flood and storm damage.

The extent and coverage of flood controls in the region's current planning schemes varies between councils. The region would benefit from a more consistent approach to flood-related planning controls to avoid inappropriate development or redevelopment and support appropriate

development responses. The growth directions in this plan for individual settlements (refer to Section 13 Living in the region) consider flood hazards.

Bushfire

Challenges exist within the Loddon Mallee South region given the large number of high bushfire hazard areas that intersect with settlements (refer to Maps 8 and 9), and the number of areas experiencing rural residential and tourism expansion. Regional and local planning consider bushfire risk in detail, with the assistance of planning tools, for example, the Bushfire Management Overlay, Regional Bushfire Planning Assessments and Bushfire-Prone Areas, as well as input from key stakeholders such as the Country Fire Authority.

Further detailed analysis needs to be undertaken for each council to provide a greater understanding of vegetation and area-specific fire risk to support settlement planning. The growth directions in this plan for individual settlements consider bushfire hazards (refer to Section 13 Living in the region).

When addressing bushfire risk, community resilience to bushfire will be strengthened by:

- Prioritising the protection of human life over other policy considerations when planning to create or expand a settlement at risk from bushfire
- Applying a precautionary approach to planning and decision-making when assessing the risk to life, property and community infrastructure from bushfire
- Taking advantage of existing settlement patterns where new development will not expose the community to increased risk from bushfire.

More detailed information on the bushfire hazards in the region is included in the background report.

Salinity

Salinity issues are a key consideration of some settlements in the region, mostly in dry land, non-irrigated areas. Salinity also impacts on the broader landscape in both dry land and irrigated areas. The history of salinity in the region is well documented and an ongoing planning consideration.

Salinity Management Overlays are used in some parts of the region to inform localised planning decisions. This overlay has generally been used on rural areas in the region, but has been applied in some urban areas to assist in settlement planning decisions, particularly in Bendigo. Catchment-scale salinity management actions are coordinated by the catchment management authorities to try to manage the overall salinity threat.

Climate

Short-term climate variability and longer-term climate change present numerous risks to the region's economy and its environment and heritage assets. The region generally responds well to the effects of climate variability, for example, droughts. The potential impacts of longer-term climate change include an increase in temperature, reduced average rainfall and stream flow, increased frequency of drought, and an increase in the number and severity of events requiring emergency responses, especially bushfire and flood.

More information is needed on the likely impacts of climate change on specific industries across the region, and the opportunities that may arise from these changes, for example, new industries and expanded commodities. An improved understanding of these impacts will assist with strategic land use planning, including consideration of any potential increase in natural hazards. Opportunities may include growth of new crops, new innovative manufacturing industry opportunities, for example, climate-resilient building products, and initiatives that support national

and global action to reduce greenhouse gas emissions, such as carbon markets and programs such as the Carbon Farming Initiative.

Other agencies, such as the catchment management authorities, have proposed development of climate change adaptation plans and carbon action plans. The Strategic Plan 2010 also contains key initiatives to assess risks to the region's natural environment and agricultural systems from climate change to identify priorities to maintain or build resilience of natural and rural environments, ecosystems and dry land and irrigated farming systems. Each of these investigations and planning exercises should be integrated with strategic land use planning and economic development planning to best enable the region to adapt as a whole.

The 'Creating a climate resilient Southern Loddon Mallee project' has recently commenced, supported by the Victorian Government's Adaptation and Sustainability Partnership, and will analyse current and future climate-related vulnerability of the regional economy and its communities in order to inform future opportunities and approaches. Catchment management authorities have recently received confirmation of funding to develop Carbon Action Plans, which will be developed in the next one to two years.

12.3 Approach to our settlement planning and environmental management

Settlement growth and development will occur in sympathy with environmental and heritage assets, including natural habitat, waterways, wetlands, soil, water and Aboriginal cultural heritage and historic heritage, including assets identified in regional catchment strategies. This growth will also be mindful of natural hazards, including flood, bushfire, climate change, salinity and potentially contaminated land, to enable protection of significant environment and heritage assets and appropriate risk mitigation.

A precautionary approach will be taken to manage settlement growth to avoid areas of high risk from bushfire and flood. Future studies will inform settlement structure planning and form.

Collaboration between land use planning and natural resource management agencies should facilitate initiatives to increase vegetation connectivity and strategically link areas of remnant habitat and ecological value, while considering implications for land use planning such as potential change in landscape bushfire and flood risks.

These agencies can encourage projects that improve the management and use of water resources, so as to minimise risks to the environment, including risks to surface and groundwater supply, and provide for potential growth and liveability. This includes encouraging projects to investigate appropriate management of small domestic and stock dams in rural living areas.

Integrated, strategic land use planning will be adaptable to land use changes that result from challenges for growth such as climate change, and enable related economic diversification.

Future environment land use actions

- Direct settlement growth and development:
 - to areas where it will avoid impacting on high value environmental assets. If impacts are unavoidable, every effort will be made to minimise them
 - to areas of low flood risk, and managed through relevant planning overlays. Where development in flood risk areas is unavoidable, suitable building and infrastructure controls will be implemented to protect life and property while considering environmental assets
- Settlement planning decisions should prioritise protection of human life and respond to the following principles with regard to bushfire risk management:
 - direct development to locations of lower bushfire risk
 - carefully consider development in locations where there is significant bushfire risk that cannot be avoided
 - avoid development in locations of extreme bushfire risk
 - avoid development in areas where planned bushfire protection measures may be incompatible with other environmental objectives
- Monitor, assess and act on the potential impacts and opportunities of climate change across the region and collaborate with other climate change adaptation planning activities, such as the 'Creating a climate resilient Southern Loddon Mallee project', to inform future land use planning decisions
- Support the implementation of the regional catchment strategies
- Undertake a domestic wastewater management pilot study regarding the impact of activity and development on open potable water supplies
- Use existing networks and strategies to support local government to undertake detailed bushfire analysis and behaviour studies to inform settlement planning
- Encourage tourism opportunities, in appropriate locations, around cultural heritage and natural environments
- Consistently apply planning tools to recognise the values of waterways and wetlands across the region
- Encourage the implementation of planning policies and initiatives to manage and reduce the impacts of dams on water yield and the health of the Campaspe and Loddon river systems

13. Living in the region

Future directions

- Focus growth to the region's existing settlements with capacity for growth
- Reinforce the role of Bendigo as the regional city, offering a range of employment and services as an alternative to Melbourne
- Target new growth to settlements including Bendigo, Maryborough, Castlemaine, Gisborne and Kyneton
- Plan for settlement growth that avoids areas of high risk from natural hazards such as bushfire and flood
- Manage settlement growth to limit the impact on agricultural productivity, natural resources and ecological values
- Value the region's unique and connected communities
- Support the ongoing role of the region's small towns and settlements
- Acknowledge the non-urban population's contribution to the region

13.1 Loddon Mallee South urban settlement

Overview

The Loddon Mallee South region currently accommodates a population of 188,000 people (Victoria in Future 2012), nearly half of whom reside in the regional city of Bendigo¹⁴. This plan considers the implications of the region's population growing to 300,000 by 2041, with 150,000 to 200,000 people residing in Bendigo.

The demand for growth in individual settlements varies across the region with some locations, such as areas closer to Melbourne, experiencing high demand and other locations experiencing more modest growth. Bendigo is likely to continue to experience a strong growth rate. Settlement patterns have been strongly influenced by the accessibility provided by transport corridors. Future growth will be promoted in locations that are well supported by the existing transport network and in particular locations with capacity for transport enhancements, while protecting the role, function and character of these towns.

This plan identifies key settlements where growth is to be directed. This growth will avoid sites of high natural hazard such as bushfire and flood, and protect environmental assets. Growth will be directed to locations with existing and future links to Bendigo, Melbourne and other settlements to provide access to employment and services.

The existing network of settlements will be strengthened through the provision of access to employment and services within the region, delivered through the Strategic Plan 2010 and other regional initiatives.

The Loddon Mallee South region is characterised by settlements nestled within the forest or surrounded by agricultural and farming land. The non-urban breaks between settlements and their valued natural environment are to be preserved and protected as a means of maintaining the character and identity of these settlements. The surrounding forest also brings bushfire risk, which needs to be managed through considered siting of any new greenfield growth areas for Bendigo and other towns.

The majority of growth in the region will be accommodated in the regional city of Bendigo, maximising the yield of accessible and well connected development within the existing urban growth boundary, prior to further greenfield land release.

¹⁴ Australian Bureau of Statistics defined Urban Centre/Locality.

Beyond the forest surrounding Bendigo, the hinterland towns of Bridgewater, Inglewood and Harcourt have the infrastructure and opportunity to grow, offering an alternative country town lifestyle accessible to the regional city. The growth of these smaller towns also has benefits for outlying agricultural areas and communities.

Growth will also be managed and supported in the regional towns of Gisborne, Kyneton, Castlemaine and Maryborough, each playing an important role in providing sub-regional services to surrounding communities with opportunities for social and economic participation. It is anticipated that other settlements, particularly in areas between Melbourne and Bendigo, will experience some increase in population, expanding within their existing settlement boundaries. Small towns and villages play an essential role in the function and character of the region. Many small towns have significant historic or landscape value and offer an alternative lifestyle from the more urbanised and larger centres. Growth is limited in some settlements based on sound strategic planning¹⁵, availability of infrastructure, for example, water or sewer provision, natural hazards and environmental considerations.

Townships in the north of the region such as Wedderburn, Boort and Pyramid Hill provide local services for their communities and the broader outlying farming and agricultural areas. Their sustainability is important and any opportunities for growth are supported, leveraged by new investment or employment.

Further information on land supply, planned and future growth of settlements is contained in the background report. The term 'planned growth' means the growth that can be accommodated by existing zoned land and land identified for future urban purposes in a planning scheme, including under an approved structure plan, outline development plan or settlement strategy.

¹⁵ Macedon Ranges Settlement Strategy 2010.

Future population profile

Along with much of Victoria the Loddon Mallee South region has an ageing population. This will have an impact on service provision such as medical and aged care provision. It also has the potential to impact on employment and the economy.

Attracting and maintaining younger age groups for education and then employment, will be critical to maintaining a diverse community and a vital economy. The desire for the regional city and settlements to grow and sustain viable populations also relies on attracting families to the region, which in turn relies on offering a range of employment opportunities and appropriate access to social infrastructure.

A key aim of this plan is to attract a diverse population to the region, particularly people of working age. This will be achieved by improving tertiary education and providing housing diversity and lifestyle options in the region.

Urban and housing form

Each of the region's settlements has a unique character, influenced by its built form, heritage and the natural landscape within which it sits. To accommodate growth and change across the region, urban design principles that are appropriate for regional areas need to be taken into consideration.

Change in the demographic profile of the region indicates the number of single person households will continue to increase. Settlement planning and provision for growth need to focus on providing housing diversity, including higher density development in cities and centres, while respecting the regional and heritage character of towns.

Alternative forms of housing (beyond the traditional greenfield development) need to be explored, such as shop-top housing and multi-unit developments. The provision of housing for older people needs to be considered across the region.

Map 9 shows future settlement growth directions for the region.

Map 9: Future settlement growth directions



Source: Department of Transport, Planning and Local Infrastructure

13.2 Bendigo – the regional city

Bendigo will accommodate the majority of growth in the Loddon Mallee South region over the next 30 years. The City of Greater Bendigo is expected to continue to experience strong and steady population growth to 2041, with a projected population of 150,000 (an additional 44,400 people compared to 2011). This plan considers the implications for the City of Greater Bendigo of a population growing beyond 150,000 and closer to 200,000 (an additional 94,400 people compared to 2011). Growth of this scale at Bendigo will help drive investment and economic growth in the region.

Based on current data, the city has planned for growth to accommodate an additional 38,000 people including infill potential for a population of 10,200 people. There are further opportunities for growth within the existing urban growth boundary, including the potential to provide for greater housing choice, types and tenure to meet the needs of the existing and future population.

The focus of growth in Bendigo will be on infill development. This is in response to both the need to provide for higher density development within the city's boundaries and new urban design approaches to create a stronger urban edge in locations adjacent to forest presenting bushfire risk. Some of this will be achieved through the review of lot size controls on zoned yet undeveloped land. Areas previously planned for large lot development, for example, minimum lot sizes of 1200 square metres in Maiden Gully, will be revisited with a view to revise planning controls to encourage higher densities.

Other infill opportunities to be investigated include disused Crown land, surplus golf courses and redundant mine sites. Planning considerations, such as potentially contaminated land, would need to be taken into account with these opportunities.

While medium density housing and infill development has had some success in Bendigo, stimulus for mixed use and higher density development in key locations needs to occur to overcome market barriers, such as a perceived lack of demand. There is also a need to provide student housing to support the growing universities in the city. The Bendigo Residential Development Strategy (2004) is currently under review and will deliver some of this planning work for future land supply to manage the city's projected and aspired growth.

Bendigo's growth is constrained by surrounding forests, but nearby Marong provides an opportunity for a population of 1300 to 8000 people depending on future planning for the area. Other investigation areas outside the existing urban growth boundary may also have potential and will be identified as part of the review of the Bendigo Residential Development Strategy (2004).

Locations for population growth in Bendigo will build on existing strengths to ensure that infrastructure and services are used efficiently. New housing, employment and education areas will be located to maximise opportunities for increased use of public transport, walking and cycling.

Planned growth for Bendigo and Marong is adequate to accommodate projected growth until 2031. Further information on the regional city's planned growth is in the background report.

The economy

Bendigo's role as a key regional city in Victoria has helped it maintain a strong and diverse economy. The city's performance against innovation and agglomeration measures clearly demonstrates its role as the engine of economic growth in the region (Regional Development Victoria, 2012).

As well as planning for Bendigo's residential growth, proactive planning for employment growth needs to occur.

The growth and wellbeing of the region as a whole is heavily dependent on Bendigo's success. A prosperous Bendigo means continued economic strength and services that are an attractive alternative to Melbourne and other regions.

Over the past decade, the region has outpaced the rest of regional Victoria in economic growth. Bendigo has driven much of this growth through its function as the regional city. Bendigo had the highest annual average growth rate in Gross Regional Product among regional cities (2001 to 2011).

The city's economy has outperformed the rest of the state in several key sectors such as knowledge-intensive services with additional strengths in mining, transport, and tourism-related sub-sectors.

Employment growth

Bendigo's population growth will require provision of around 25,000 to 40,000 new jobs. A critical success factor for Bendigo and the region will be to attract and maintain a population of working age.

Much of the regional economy is concentrated in the city. In 2011, Bendigo accounted for 64 per cent of the Gross Regional Product and 56 per cent of the regional population. In 2009, around 50 per cent of the region's employing businesses were based in the city.

Bendigo will not only provide employment and services for its increasing population, but also continue to grow its role as the service and employment centre for the Loddon Mallee South region and adjoining regions.

Key regional industries that could be expanded include the finance, health and education sectors, and the links between them, public administration and safety, as well as manufacturing. These sectors need to grow and attract and develop new employment opportunities. There is adequate zoned land for employment in Bendigo.

Transport

Existing road and rail links that provide easy access from Bendigo to Melbourne and other settlements within the region are a competitive advantage. The completion of the Calder Freeway and capitalising on the new \$4 billion Regional Rail Link will improve reliability to and from Bendigo for both road and rail users. Bendigo railway station acts as a hub for broader regional public transport, with bus and rail links to Swan Hill, Echuca, Mildura and Adelaide.

Improvements to Bendigo's intra-city public transport network are needed, including investigation of the extension of train services to Eaglehawk and Epsom with associated station upgrades. The City of Greater Bendigo is preparing the Bendigo Integrated Transport and Land Use Strategy to provide future directions for road upgrades and movement of people and goods through, into and around the city and region.

Further discussion on transport directions for the region is included in Section 14 Regional infrastructure.

Marong

The Marong Plan envisages development of the rural town into a settlement of around 8000 residents over the next 20 years.

Plans are also proposed for the future development of the Marong Business Park to integrate it with the Marong and Maiden Gully townships, and the Bendigo urban area. This plan envisages 300 hectares of industrial and business land. The City of Greater Bendigo has investigated the potential development of the Marong Business Park, although the timing for further work and implementation is unclear. The development of the Marong Business Park is a priority for the region as it provides significant employment opportunities and land for important economic sectors and supply chain links such as food processing and freight.

The Marong Plan also considers nearby districts and towns in Loddon Shire, such as Bridgewater and Newbridge, in terms of access to employment and links to agricultural and freight processing and production.

Future Bendigo economic and settlement land use actions

A key priority for Bendigo is precinct and structure planning to facilitate increased commercial and residential densities, mixed use development and revitalisation projects for underutilised sites and land. Opportunities to enhance economic activity exist in the following locations:

- Bendigo CBD including the Gillies and Crystal Ice sites
- Bendigo railway station precinct
- Bendigo Hospital redevelopment and precinct planning
- Latrobe University precinct
- Bendigo Theatre precinct – tourism destinations

Some priority actions should include:

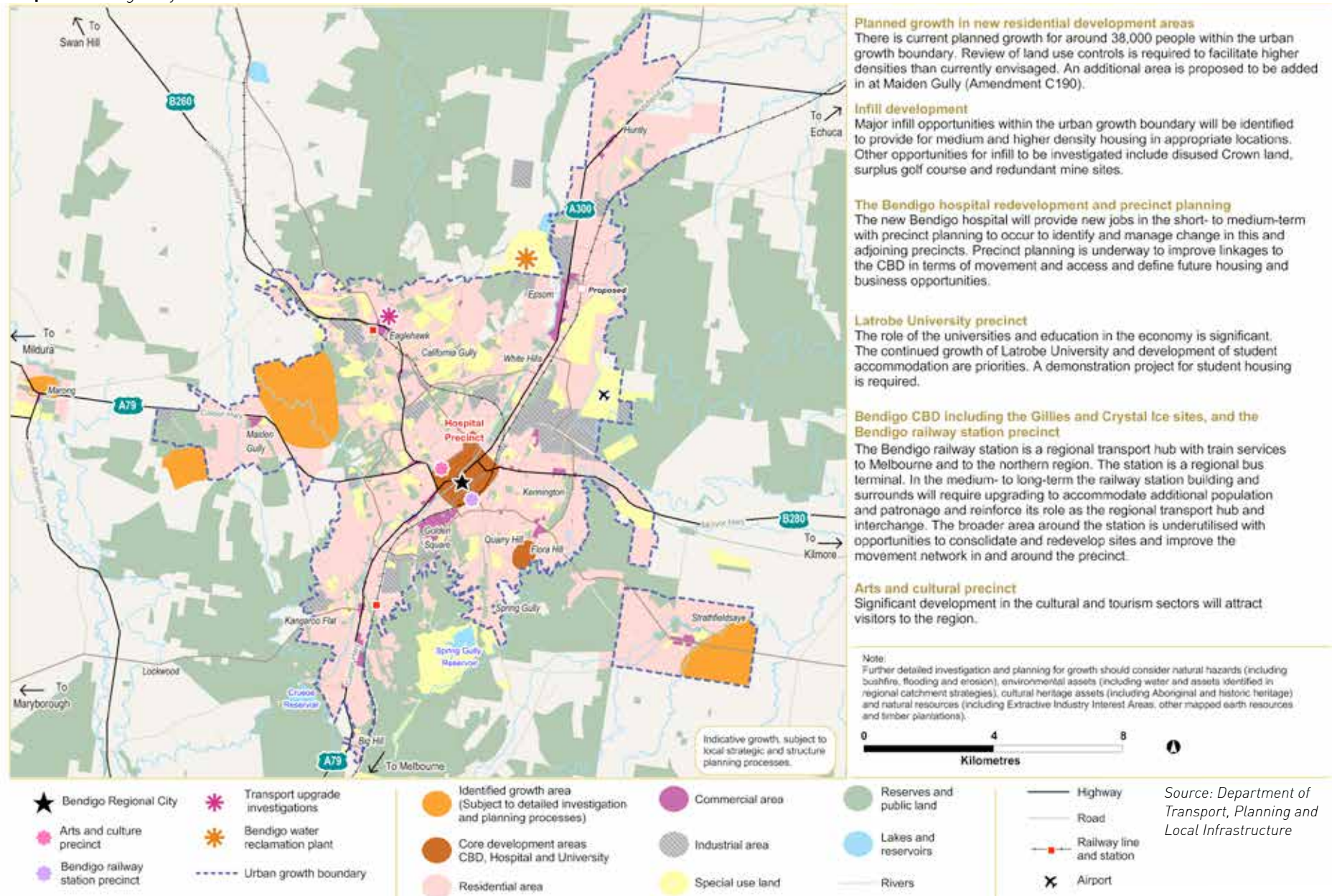
- Facilitate the development of a Bendigo railway station precinct plan for future revitalisation of land around the station in the short- to medium-term and plan for the long-term upgrade of Bendigo railway station's facilities
- Support the development and expansion of tourism infrastructure in the city
- Promote the growth of Bendigo as the regional city
- Prioritise the implementation of the Marong Plan and Marong Business Park development
- Support the development of the Bendigo Integrated Transport and Land Use Strategy and associated land use recommendations



Alexandra Fountain, Bendigo

- Support the Bendigo Residential Development Strategy (2004) review and resulting land use planning initiatives and changes
 - Support the Bendigo Hospital Precinct Planning Project and housing and mixed use planning and developments within the precinct
 - Facilitate a student accommodation demonstration project in the city
- Map 10 shows future land use directions for Bendigo City.

Map 10: Bendigo City future land use directions



Source: Department of Transport, Planning and Local Infrastructure

13.3 Growth of regional centres and towns

Regional centres and towns identified as having capacity for growth in the Loddon Mallee South region are Maryborough, Gisborne, Castlemaine and Kyneton. These centres and towns will be the focus of future population growth and act as sub-regional employment centres. They will also act as a network for each other and surrounding smaller towns.

Direction 6.2 of *Plan Melbourne* seeks to rebalance Victoria's population growth from Melbourne to rural and regional Victoria over the life of the metropolitan planning strategy. Initiative 6.2.1 states: "In partnership with local government develop peri-urban town plans to increase the supply of land for housing and attract population growth out of Melbourne." Gisborne is identified in *Plan Melbourne* as a potential town for growth.

Maryborough

Maryborough has the social and service infrastructure and land supply to accommodate a significant increase in its current population of around 8000 residents. The centre has extensive retail services that serve a wide population catchment. Growth in tourism and retail activity will continue. Major manufacturing businesses, such as True Foods, provide employment. There is existing vacant industrial land suitable for attracting further large-scale manufacturing. Maryborough has strong links to both Bendigo and Ballarat and excellent transport links providing access to jobs, services and education facilities in these regional cities.

Current vacant residential land supply provides for an approximate total population of 14,000, with future areas for investigation identified.

Challenges for growth in Maryborough include its historically low growth rates. However, programs to attract residents, combined with the managed growth of other settlements in the region, will seek to encourage Maryborough's growth. Towns within the Ballarat-Maryborough corridor also have potential to grow and the corridor's road and rail transport infrastructure provides a direct link from the Loddon Mallee South region to other regions. Expansion beyond Maryborough's existing urban boundary will need to give careful consideration to bushfire risk and bushfire planning provisions, flood hazards and urban salinity risks. Map 11 shows future land use directions for Maryborough.

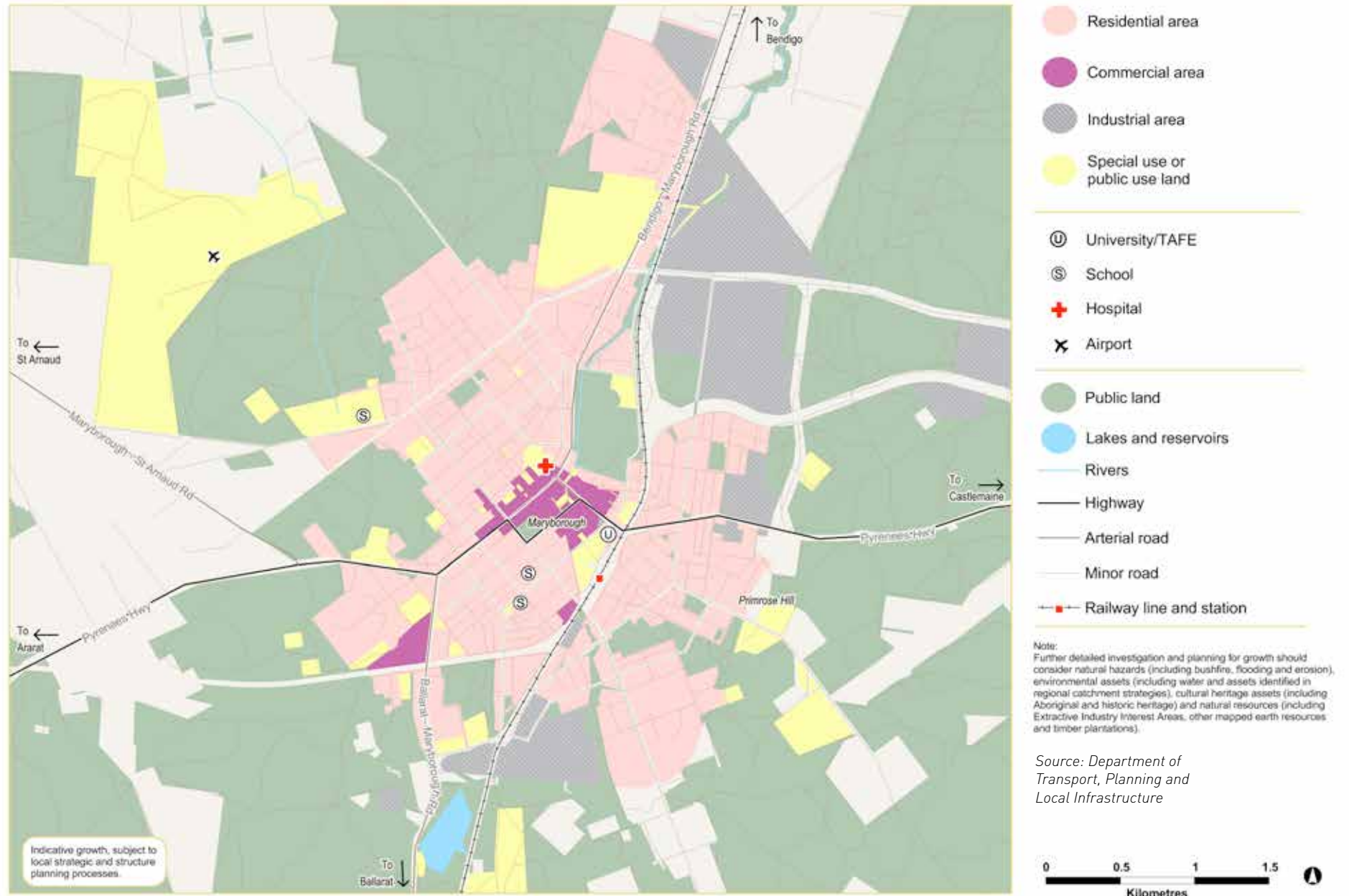
Gisborne

Gisborne is experiencing strong population growth and recent strategic work has identified the potential for this town to grow to around 15,000 residents by 2036. Gisborne will develop its role as a sub-regional employment and service centre. It provides a range of services for its community and surrounding smaller settlements. Gisborne attracts new residents due to its proximity to Melbourne, its location on the Calder transport corridor, affordable land and housing (relative to Melbourne), and its existing and available infrastructure.

The region's councils desire a reduction in dependence on commuting to Melbourne for work through increased choice of local and regional jobs and improved transport services to Bendigo. There is estimated existing land supply for approximately 17,000 people in the Gisborne¹⁶. Planning for settlement growth will need to consider bushfire risk, bushfire planning provisions and potential flood hazards. Map 12 shows future land use directions for Gisborne.

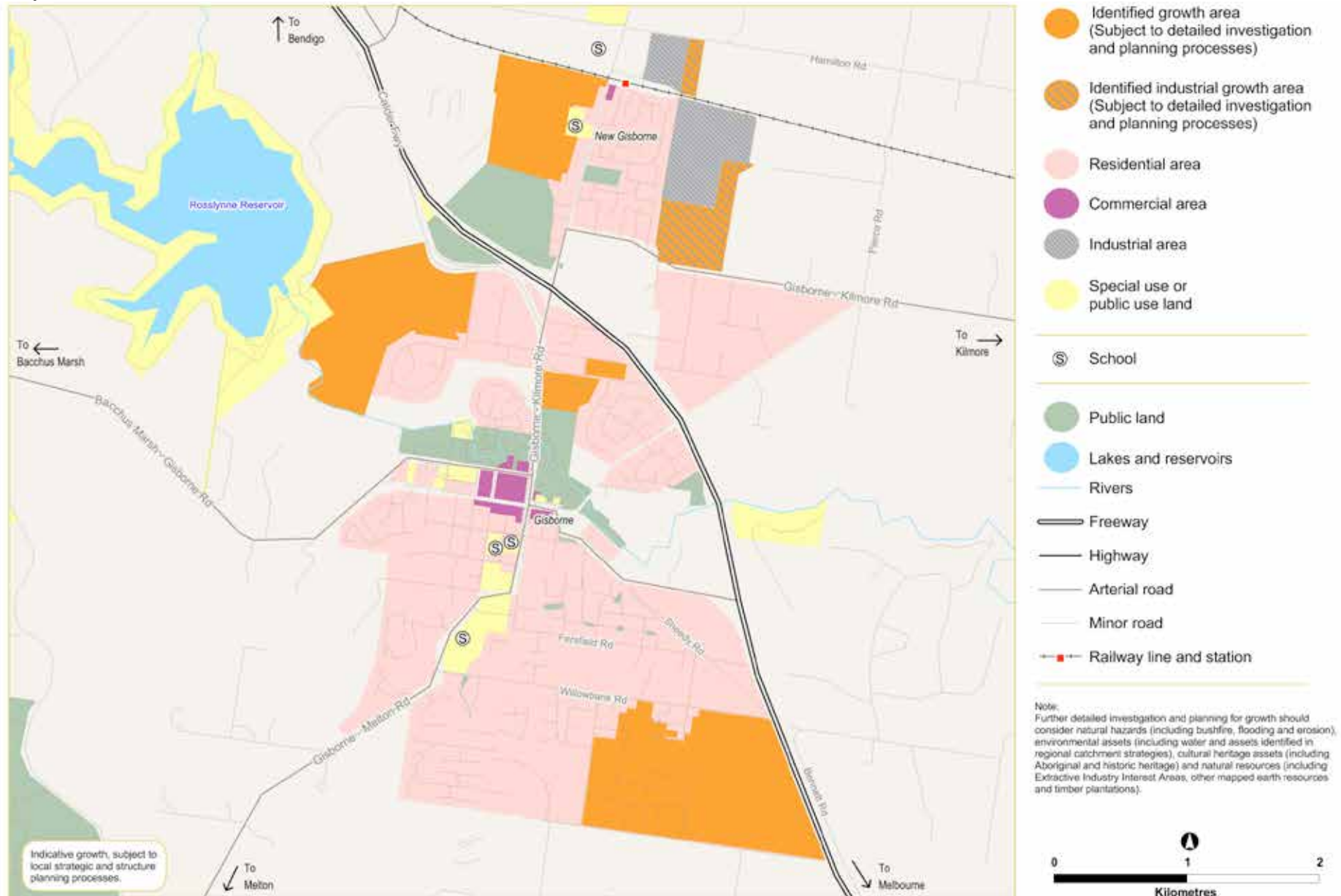
¹⁶ Macedon Ranges Settlement Strategy, Gisborne Structure Plan.

Map 11: Maryborough future land use directions



PART C | TOWARDS THE REGIONAL GROWTH PLAN

Map 12: *Gisborne future land use directions*



Source: Department of Transport, Planning and Local Infrastructure

Castlemaine (including Campbells Creek)

With strong transport links to Melbourne and Bendigo and a central location in the region, Castlemaine is experiencing moderate growth. It will increase its role as a sub-regional employment centre in the future.

However, opportunities for expansion of Castlemaine beyond the existing township boundaries are limited due to bushfire risk. Flood hazards are also a significant planning consideration. Future planned growth will be focused within the existing urban area, including Campbells Creek, with current vacant and planned residential zoned land supply for an additional 1500 people. Additional growth areas and land supply need to be investigated.

Infill housing opportunities, such as shop-top housing and some medium density in Castlemaine's inner urban area will be explored, while having regard for the historic character of the town.

Managed growth in surrounding small towns, such as nearby Harcourt, is encouraged to accommodate demand from Castlemaine. The historic character and lifestyle of these small towns needs to be respected in planning for growth. Map 13 shows future land use directions for Castlemaine.

Kyneton

There is a large supply of existing residentially zoned land available in Kyneton. Supply estimates indicate there may be potential capacity for approximately 8600 people to be accommodated on existing residentially zoned land, depending on the density of future development. Planning for settlement growth will need to consider the bushfire risk, bushfire planning provisions and potential flood hazards.

The town has significant infrastructure including the Kyneton Hospital, and is located on the Calder road and rail corridor providing ease of access to Bendigo and Melbourne¹⁷. The town has a rich legacy of heritage buildings and streetscapes that need to be protected and enhanced. Map 14 shows future land use directions for Kyneton.

Other district towns

Riddells Creek

Riddells Creek is likely to continue to grow at a moderate rate. Current population projections indicate the town could reach a population of just over 6000 people by 2041. Supply estimates indicate potential capacity for approximately 4900 additional people on existing residentially zoned land. Further investigation is required to identify future areas for greenfield growth as well as opportunities for infill and medium density development within the township boundaries.

Riddells Creek provides a rural township lifestyle option that Gisborne has traditionally delivered. It is well connected to existing railway infrastructure, services industries and businesses¹⁸. Planning for settlement growth will need to consider potential bushfire and flood hazards.

Romsey

Romsey will continue its role as a rural town. Supply estimates indicate potential capacity for approximately 6000 people on existing residentially zoned land. However, the town has limited services and transport infrastructure. Future transport links would need to be provided to accommodate projected future growth. While growth is to be accommodated, there is an opportunity to retain the unique village atmosphere of the township¹⁹. Planning for settlement growth will need to consider potential flood considerations.

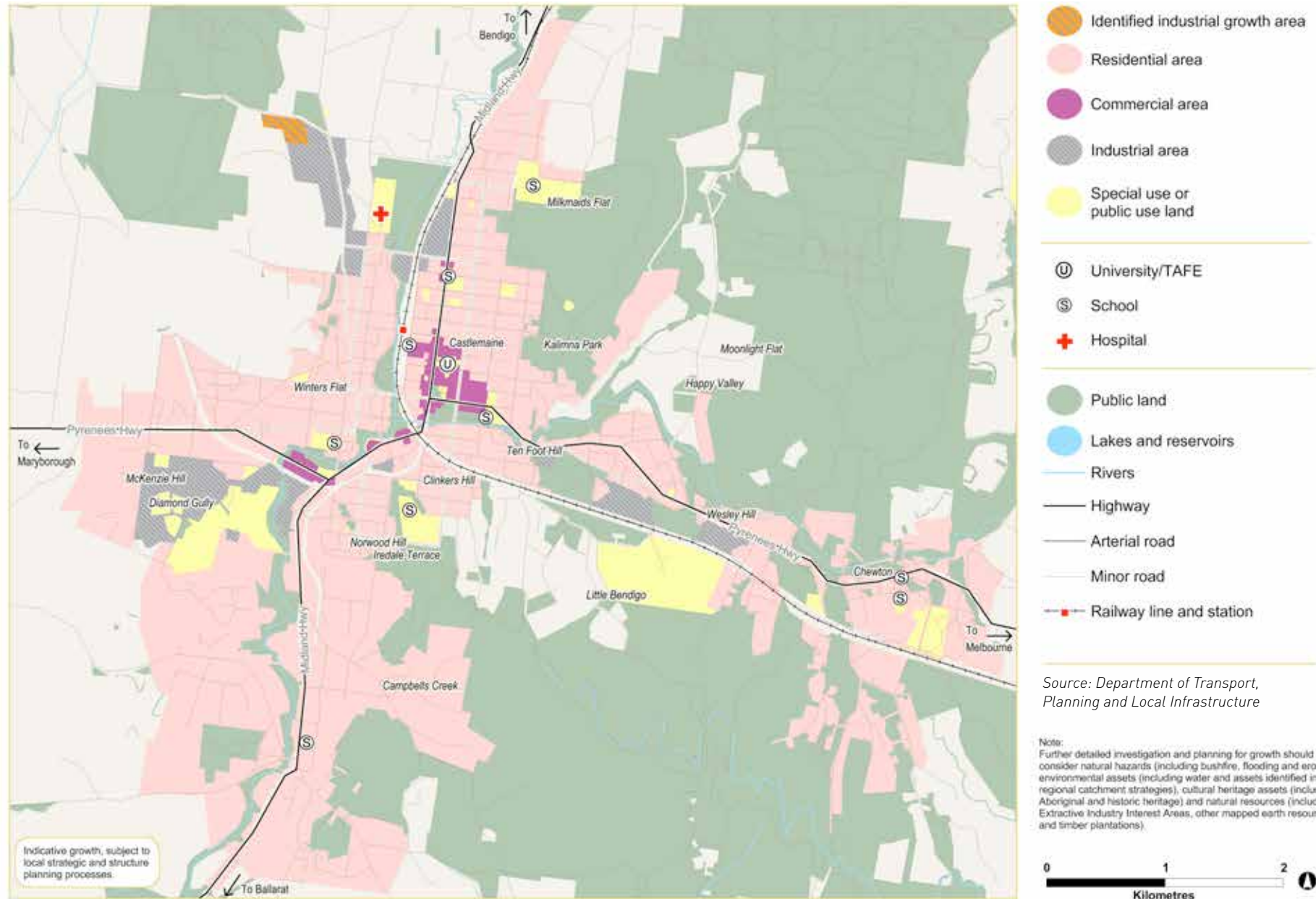
¹⁷ Macedon Ranges Settlement Strategy, Kyneton Structure Plan.

¹⁸ Macedon Ranges Settlement Strategy, Riddells Creek Outline Development Plan 2011.

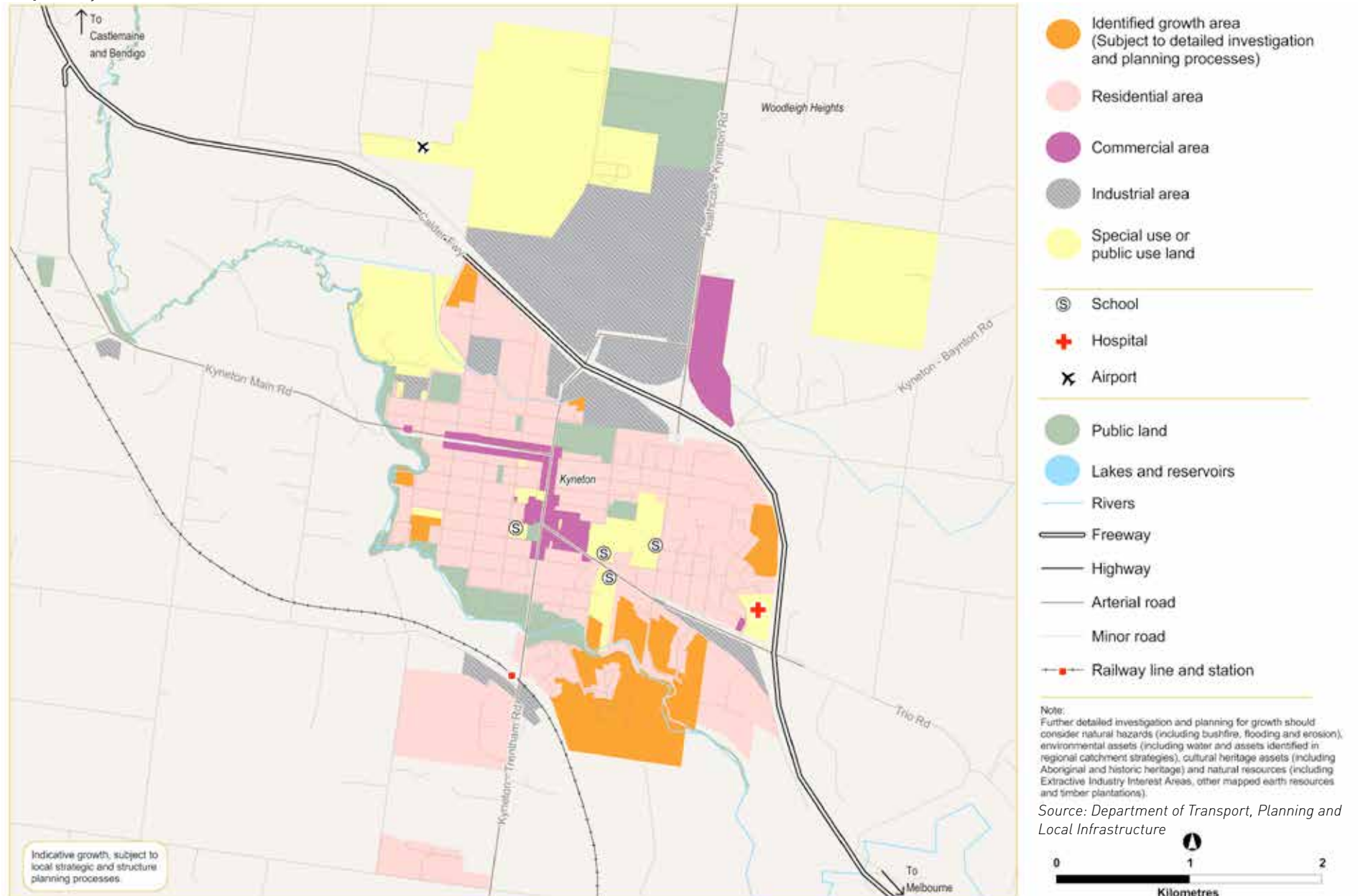
¹⁹ Macedon Ranges Settlement Strategy, Romsey Outline Development Plan.

PART C | TOWARDS THE REGIONAL GROWTH PLAN

Map 13: Castlemaine future land use directions



Map 14: Kyneton future land use directions



13.4 Growth of Bendigo's hinterland towns

A key outcome of this plan will be to facilitate moderate growth for some of the hinterland towns around Bendigo. The provision for growth of these towns also serves to protect the forest surrounding Bendigo, and provides for alternative housing and lifestyle options in proximity to employment and services.

Bridgewater and Inglewood

Although they are only small rural towns at present, Bridgewater and Inglewood in Loddon Shire have the potential to develop as complementary and alternative lifestyle townships in the hinterland of Bendigo. Current trends show limited demand for growth, however future directions of this plan, combined with proactive planning, liveability marketing and incentives could promote growth. The growth of these towns would support the sustainability of outlying agricultural areas and provide additional services to the broader community.

With its charming riverside location, Bridgewater is an attractive village. The town has existing physical infrastructure that can support population growth. Comprehensive planning for growth needs to be undertaken to address flood and environmental impacts, and the interface with agricultural activities. Limited expansion of the town centre or commercial land would be required due to the proximity to Inglewood, which has more extensive services.

Inglewood provides a range of retail, community and social services including a hospital, aged care facilities and schools. Communities serviced in this area include the townships of Bridgewater, Korong Vale, Serpentine, Wedderburn, Newbridge, Tarnagulla and surrounding townships. Inglewood has good physical infrastructure combined with limited growth constraints. However, planning for growth in Inglewood needs to consider bushfire hazards.

²⁰ Harcourt Town Centre Masterplan, Mount Alexander Shire.

Harcourt

Harcourt is a small town in Mount Alexander Shire strategically located adjacent to the Calder road and rail corridor, 30 kilometres from Bendigo and seven kilometres from Castlemaine.

There is potential for growth of Harcourt beyond the existing town boundaries. Rezoning of land for urban development needs to occur in appropriate locations with regard to the surrounding horticultural land and bushfire hazard. Further strategic and structure planning work is currently underway²⁰.

Heathcote

Heathcote is a district town in the City of Greater Bendigo with the potential to grow to around 3000 people, with appropriate structure planning. A range of local services exist that service the town and outlying areas. Currently, around 20 per cent of the existing dwellings are not connected to reticulated sewerage. The town has the potential to accommodate some future growth with regard to environmental and infrastructure considerations. Planning for growth in Heathcote needs to consider bushfire hazards.

Further strategic and structure planning work is required to accommodate future growth.

Small towns and rural areas

Small settlements in the north of the Loddon Mallee South region, such as Boort, Mitiamo and Pyramid Hill, provide lower order services with employment highly dependent on agriculture. The social and economic impact of changes in water policy, particularly the implementation of the Murray-Darling Basin Plan and completion of irrigation infrastructure renewal, will need to be monitored and considered into the future.

The ability of the agricultural sector to adapt to changes to the climate and economy will be critical to a viable future. Restructuring will result in some land transitioning from irrigated to mixed agriculture, which may still occasionally be irrigated. Planning needs to support transitional land uses to enable such innovative agricultural enterprises to develop throughout the irrigation region.

Supporting the diversification of the economy of these and other small towns is important, as is maintaining social infrastructure and services. Support is necessary for transitioning the agricultural landscape and associated communities as the irrigation districts are refined by policy and infrastructure investment. This support may include diversification of agricultural practices and economies as well as investment in new technologies. This may also deliver opportunities for further investment to increase food production and attract new processing industries.

Many rural areas in the region are also desirable places to live. In particular, there is an increasing demand for rural residential allotments. This growth pressure is particularly apparent in Melbourne's peri-urban areas and along the Calder corridor. Development of a consistent regional approach to managing small lot development in rural areas and avoiding the highest quality and productive agricultural land would support land use planning decision making.

Continued attention and management of land is important to ensure the interface between urban and rural settlements is well defined so that the settlement future of the region is clear. The siting, form and management of future urban and rural living settlements should consider the impacts on existing agricultural industries and environmental assets in both planning and implementation.

The growth and expansion of some settlements will occur on land that is currently allocated for farming. Achieving a balance between facilitating the growth of settlements, such as Bendigo's hinterland towns, while protecting strategically important agricultural land, needs to occur through regionally integrated land use planning. Balancing the protection of farming activities and production areas is critical, with appropriate land management practices, protection of natural resources and environmental ecosystems, and consideration of dwellings in these areas.

Future regional land use settlement actions

- Support the current structure planning for Kyneton, Woodend and Riddells Creek
- Investigate land supply opportunities and impediments to accommodate further growth in Castlemaine
- Undertake structure planning and programs to promote the growth of Maryborough
- Commence investigation projects for the growth of Bridgewater, Inglewood and Harcourt
- Investigate the sewerage of some townships, including Talbot and Newbridge
- Support the sustainability of small towns through investment and diversification of their economies and appropriate flexible zoning provisions

13.5 Social inclusion

Future directions

- Invest in liveability, infrastructure and urban design initiatives to make the region's towns great places to live
- Build community connectedness and reduce areas of social disadvantage
- Build a skilled and adaptable workforce by attracting skilled workers and providing access to high quality education and training opportunities, which provide pathways to employment
- Plan for the facilities and infrastructure needed for delivery of education and training to support growth

Overview

Social services that support regional and rural communities should be provided in an equitable way so that communities have access to the services they need at a regional level. The delivery of services needs to be matched with both the location and time sequence of development and population growth. The broad settlement pattern should also provide for community recreation and leisure activities that protect valued landscapes and recreation assets at the regional scale.

Current and future population change and composition and location disadvantage will affect towns and small settlements in the Loddon Mallee South region. Some towns will face pressure on their existing services and will need to plan for new and additional services. Other towns and smaller settlements that are facing a decrease in population will require creative solutions to ensure access to social infrastructure to support community participation, health and wellbeing.

Education

Workforce skills gaps have been identified in key economic growth areas including construction, education, transport and logistics, and health. These gaps suggest the region should better integrate secondary school and post-secondary education with regional economic development. Ongoing training is also required to ensure workers' skills continue to meet the changing needs of industry and are positioned to take advantage of any emerging industry opportunities.

Tertiary education facilities, such as La Trobe and Monash universities in Bendigo, and post-secondary education facilities, such as TAFE, offer an alternative to studying in Melbourne or other regions. Increasing tertiary enrolments will contribute to the regional economy, potentially retain a skilled workforce and attract younger people to settle in the region. A current inhibitor to increasing tertiary participation is the lack of student accommodation in Bendigo. Beyond this, further development and investment in university programs and facilities will be required to drive growth and participation in tertiary education across the region.

Whole-of-life education and training is critical to overall health and wellbeing. Educational attainment brings personal, social and economic benefits to individuals and communities. It also creates opportunities through increased access to employment, helps address regional skill shortages and assists in strengthening and diversifying the economy.

Health and wellbeing

The economic, social, environmental (natural and built), democratic and cultural life of communities influences health and wellbeing. This includes access to recreation and cultural facilities, as well as infrastructure such as health services and hospitals. Challenges for the region include the variations in socio-economic status and access to services that aid community connectedness and participation. This is particularly important in more remote areas of the Loddon Mallee South region.

The aim of this plan and the Strategic Plan 2010 is to support equitable access to services that provide social support, education and employment, as well as cultural and social activities. This relies on both strong transport and communication links as well as local or regional programs focused on improving health and wellbeing.

Significant projects that will contribute to improved health and wellbeing in the region are highlighted throughout this plan, including the Bendigo Hospital redevelopment.

Future social inclusion land use actions

- Coordinate government agencies' land and infrastructure strategies for the provision of public and community facilities, including existing and new education facilities
- Recognise Development Contribution Plans are essential to fund infrastructure for communities
- Utilise telecommunications and transport infrastructure to improve access to social infrastructure



Students, Latrobe University, City of Greater Bendigo

14. Regional infrastructure

Future directions water, energy and utilities

- Strategically renew, maintain and develop infrastructure to maximise opportunities and services to meet anticipated need
- Favour development proposals that maximise existing infrastructure and provide significant economic or community benefit
- Ensure that the current and future operation of major infrastructure of state and regional significance, including highways, railways, airports, communications networks and energy generation and distribution systems, is not adversely affected by urban development in adjacent areas
- Prioritise infrastructure that connects the region's communities through physical and electronic means, such as transport and internet access
- Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement
- Provide adequate waste and resource recovery infrastructure and services to support new developments and population growth in the region
- Protect water quality and quantity
- Provide for the future of waste management and resource recovery

Overview

Future social and physical infrastructure provision is vital for sustainable communities. Directing growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement is a priority. Many of the towns earmarked for significant growth in the Loddon Mallee South region have good existing infrastructure, such as water and sewerage and transport links that enable growth to take place.

It is essential that planning for growth is undertaken alongside planning and infrastructure investment to enable economic and settlement growth in strategic locations. Current policy settings, local and regional strategies and infrastructure projects underway, planned or implemented, such as the Regional Rail Link, the Rail Revival Study, the Calder Highway alternative interchange, and the National Broadband Network rollout, will all contribute to and support future growth.



Solar energy, Bridgewater, Loddon Shire

14.1 Water, energy and utilities

Growth of towns and cities in the Loddon Mallee South region will result in demand for additional water, energy and utility infrastructure. Efficient use of existing systems and preservation and identification of utility infrastructure corridors and urban locations have been considered as part of this plan. The projected population and settlement patterns take into account high level planning for currently planned and anticipated service utilities.

Gas and electricity

There are many areas within the region that do not have access to natural gas and rely on bottled gas. There is a need for reticulated gas supply to be extended to benefit both businesses and residents.

Investigations for upgrades and extensions to natural gas supplies are being undertaken through the Energy for the Regions Program (Regional Development Victoria). Locations within the region identified in the program include Heathcote, Marong, Huntly and Maldon.

The traditional electricity network is capable of accommodating projected growth for the region. There are significant opportunities to produce energy through alternative methods, such as renewable energy and supplies from biomass (refer to Section 11.2 Working in the Loddon Mallee South region). Initiatives to support energy generation in the region should be pursued, such as agreeing on a target for regional energy generation.

Telecommunications

The National Broadband Network rollout is anticipated for the Loddon Mallee South region by 2016. The implementation rollout map is contained in the background report. This service will be essential to the vitality of the region. It will contribute to social wellbeing through education and access to e-services, and it will contribute to the regional economy by increasing

competition in technology and information services as well as value-adding to businesses.

The region would benefit from a better understanding of the potential impacts and opportunities of the National Broadband Network rollout. There is the potential to provide greatly improved access to information, services, training and employment and potentially to reduce the need to travel. It could reduce commuting outside the region, for example, from the Macedon Ranges to Melbourne through options to work remotely, or aid the development of new businesses. The National Broadband Network rollout also has the potential to impact on the regional economy with services outside the region being easier to access. Gaining an understanding of the economic and social opportunities provided by improved telecommunications and the potential land use implications would be of benefit to the region.

Water supply and management

Water supply throughout the region will have a strong bearing on the type of industries that can operate in both rural and urban areas, and on the future sustainability of settlements. Water supply to rural areas is changing as part of water reform across the state, which should provide a more secure water future for the region for the next 30 years and beyond. Within the Loddon Mallee South region, the Goulburn-Murray Water Connections Program is a big driver of change in the north, while upgrades to Coliban Water's supply network is affecting much of the rest of the region.

Much of the southern parts of the region are within declared water supply catchments that supply potable water to settlements within and outside the region. Protecting water quality and yield will continue to be a key role of land use planning.

Bulk water supply issues for the Loddon Mallee South region are being managed through sustainable water strategies predominantly through the Northern Region Sustainable Water Strategy, but also the Central Region Sustainable Water Strategy. The implementation of the Murray-Darling Basin Plan and The Living Victoria program will further influence the future of the region's water supply. Water supply demand strategies for the urban water corporations within the region generally identify there is likely to be shortfalls in water supply across some areas at some stage during the life of this plan. Solutions to these shortages are already proposed in the water supply demand strategies, including water demand management measures, improving supply system efficiency, the use of water savings rules, and purchasing more water.

Ongoing investments in water infrastructure and management of water resources are required to enhance security and efficiency of water supply to irrigators, farms and urban areas. This is particularly important in light of the region's expected population growth, projected water supply reductions due to climate change, and changes in water allocation policy. The future integrated water cycle strategies of urban water corporations to replace water supply demand strategies will need to take into account the growth proposed in this plan.

In response to the prolonged drought in Victoria, significant investments in infrastructure have already occurred. With the Goldfields Superpipe, Coliban Water and Central Highlands Water can now access water from both the Campaspe system and the much larger Goulburn system. Coliban Water and Central Highlands Water both hold water shares in these systems and can also access the water market to purchase additional temporary and permanent water to supplement any shortfalls.

This infrastructure, combined with Coliban Water's strategies, seek to manage secure water supplies to accommodate future growth in the region, and have measures to respond to severe drought or water

shortages. Refer to the background report for specific projects and further detail on delivery of water to urban areas.

Recycled water

Recycled water is now an important part of our water supply. Recycled water is used in a number of towns to irrigate public areas such as parks, golf courses and race tracks. The use of recycled water will be further investigated to promote economic development in the region, where feasible.

A number of new housing areas in Bendigo are supplied with recycled water. The use of recycled water will be delivered in new growth areas that are able to be supplied with this service in a sustainable manner.

Sewerage

The provision of sewerage services to small towns can increase the capacity for growth, but is not the sole stimulus. Coliban Water provides sewerage services within the region, with some towns planned for upgrades while others are under investigation. Investigations for the sewerage of Talbot and Newbridge should be considered in the medium- to longer-term to support growth.

Sewerage service providers should be consulted in the development of domestic wastewater management plans.

Waste management

Much of the Loddon Mallee South region relies on the Bendigo Waste Transfer Station for the management of waste, with towns having smaller local facilities, many of which are reaching capacity. Future management of waste disposal and recycling in the region needs to be planned.

As the region's population and industry grows, there will be an increased demand for waste and resource recovery management. This will create a challenge for securing land for future waste management facilities, including for sorting and processing, recycling, composting and reprocessing, export, reuse and disposal of waste. Suitable locations for such facilities need to be planned for to avoid impacts on more sensitive land uses.

Any opportunities to generate new industries in this field and to generate energy from waste (including inactive landfills) should be explored and supported, where costs and benefits consider environmental, economic and social factors.

Innovative waste disposal and recycling technologies are encouraged. Locations for investigation of new waste disposal and recycling plants include north of Bendigo and along the Calder Highway between Bendigo and Wedderburn.

Future waste, water and utilities land use actions

- Agree on a target for regional energy generation
- Support the provision of facilities that efficiently manage the region's solid waste
- Initiate a study to gain an understanding of the economic and social opportunities provided by improved telecommunications, and the potential land use implications
- Support investigation of sewerage for townships including Talbot and Newbridge
- Support ongoing investment in water infrastructure and management of water resources to enhance security and efficiency of water supply to irrigators, farms and urban areas

Map 15 shows future infrastructure directions for the region.



Dunolly Grain Handling Facility, Central Goldfields Shire

Map 15: Future infrastructure directions



- Support the investigation of sewerage, gas provision/extension and improved water quality projects for small towns.
- Ensure local government land and infrastructure strategies support future development of existing and new education campuses.
- Support local government in preparing Development Contribution Plans to assist funding of physical and social infrastructure.
- Understand the economic and social implications of the NBN rollout in the region.
- Foster health and education facilities in Bendigo.

- Sewering under investigation
- Upgrades or extensions to natural gas supply
- Provision for improved water quality under investigation
- Maintain and monitor water infrastructure and provision for a secure water future for the region.⁽¹⁾
- NBN - Construction commenced ⁽²⁾
- NBN - Construction commences within 3 years ⁽²⁾
- Goldfields superpipe ⁽³⁾
- Underground water pipe (existing)
- Hospital
- University

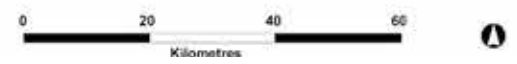
Maintain and strengthen key transport networks, both road and rail for the transporting of freight and people.

- Freeway
- Road
- Rail

Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement.

- Rivers
- Lakes
- Public land
- Mixed farming

(1) Derived from: http://www.coliban.com.au/projects/documents/CW_Harcourt_Mod_Project_091012_A4.pdf
 (2) Derived from: <http://www.nbnco.com.au/rollout/rollout-map.html>
 (3) Derived from: http://www.coliban.com.au/projects/images/Alignment_Newsletter_web13March07.jpg



Source: Department of Transport, Planning and Local Infrastructure

14.2 Transport networks

The transport system is a facilitator of economic and social activities. Local transport and internal town and city activities are addressed in municipal and local plans. Optimising urban design and place-based outcomes enables improved integration with land use. Region-wide and inter-regional transport systems and infrastructure are considered as part of this plan.

Strategically significant transport routes traverse this sub-region. The Loddon Mallee South regional economy is supported by an efficient freight transport network. The Calder road and rail corridor is well utilised and has supported growth and increased movement between settlements and economic centres. The Calder Freeway between Melbourne and Bendigo is also a designated route for high productivity freight vehicles. This allows larger vehicles to more efficiently transport goods.

Freight networks that traverse the region enable movement of goods throughout northern Victoria and southern New South Wales through to ports and activity centres in Melbourne and southern Victoria. Protecting these important freight corridors, taking into account future transport needs, and integrating with land use planning will lead to continued prosperity.

This plan acknowledges the importance of the Calder transport corridor and key freight transport networks through appropriate land use planning responses, including reserves and buffers.

The region will experience strong population growth over the next 30 years with most of this growth directed to the regional city of Bendigo. Strong growth is also planned for Maryborough, Castlemaine, Gisborne and

Kyneton. To support sustainable growth, land use planning is undertaken alongside transport planning to increase opportunities for choice in transport modes. This plan directs growth to appropriate locations that better enable sustainable transport choices.

The transport network is a critical facilitator of regional growth. Strategic decisions regarding growth will need to be aware of transport constraints and opportunities. In developing this plan it will be important to maximise sustainable transport options. Urban land use planning supports sustainable transport choices by directing growth to key activities that enable cycling and walking, such as education, employment and retailing, and by encouraging increased urban density to support efficient public transport networks.

Bendigo is currently experiencing substantial infrastructure investment, including upgrades to health, education and arts facilities. These facilities and services are of benefit to the wider region. Therefore, accessibility to Bendigo from outlying townships and centres is essential. This plan takes into account the anticipated increased movement into and around Bendigo by land use planning that supports transport mode choices and creates more equitable access to goods and services.

Future directions transport

- Strategically renew, maintain and develop transport infrastructure to maximise opportunities to meet anticipated need
- Ensure that the current and future operation of major infrastructure of state and regional significance, including highways, railways, airports, communications networks and energy generation and distribution systems, is not adversely affected by urban development in adjacent areas
- Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement

Private, community and public transport, along with freight movements and other infrastructure, are critical to support growth in the Loddon Mallee South region.

The existing road and rail network, including recent upgrades and infrastructure investments, have helped accelerate population and economic growth in the region. There are opportunities to promote further growth in locations that link well with the existing transport network and locations with the capacity for transport enhancements.

The Calder road and rail corridor is the key transport spine in the region providing access to and from Melbourne in the south and Mildura in the north west. Upgrades to the Calder Freeway and the Bendigo rail line over the past decade have helped support strong growth in the movement of people and goods along this important transport corridor.

Other key road links include the Northern and Sunraysia highways, which provide strategic routes to intra-regional cities such as Ballarat and Geelong; and the Midland Highway, which provides a north-south orbital link between the Hume Freeway and the Port of Geelong via Benalla, Shepparton, Bendigo and Ballarat.

The Bendigo rail line has experienced strong growth in patronage following recent upgrades. This includes high levels of commuting from Bendigo to Melbourne on a daily basis, and increasing levels of commuting from surrounding townships to Bendigo, such as townships within Macedon Ranges Shire, both by car and rail, for example, Kyneton to Bendigo. These commuter trends are expected to continue and are critical for businesses in and outside the region.

Different solutions are required for the movement of people and the movement of freight. The future directions in this plan provide some guidance to help ensure the transport network supports changes to the economy, settlement patterns and demographic changes.

Improve the capacity and functioning of the transport network

There are a number of options to improve the capacity and functioning of the transport network as growth occurs in key areas including regional cities such as Bendigo. It is important to ensure the operation of major state and regional infrastructure, including highways, railways, airports, communication networks, is not adversely affected by urban development. For example, urban growth in Gisborne and New Gisborne has occurred along a transport spine of the main road. New developments in this area seek to support an increase in walking, cycling and public transport accessibility. In addition, alternative road routes are planned in the long to medium term to minimise congestion. Transport implementation opportunities for improving network capacity could include:

- enabling or managing diverse travel choices such as walking and cycling links, shared zones and park and ride
- expanding road space via widening, sealed shoulders, duplication, clearways and cycle paths
- increasing rail capacity to provide passing opportunities, signalling and increased track axle loads to enable heavier loads to be transported
- improve and modify the network of public transport services to better meet market needs.

Ensure access and connectivity

Improvements to the Calder road and rail corridor have helped accelerate growth in locations with ease of access to this corridor. In the future this corridor is likely to play an increasingly important role in facilitating the growth of settlements along the corridor or with good access to it.

It is likely that as Bendigo grows and provides further employment opportunities, reverse commuting to Bendigo will increase, not just to Melbourne. However, this corridor also serves as a major freight route and amenity issues in the centre of Bendigo may need to be managed as the freight task grows. It will be important to ensure there is flexible and adaptable freight access with interventions such as the clustering of intensive agricultural industries and the potential upgrade of Bendigo Airport to provide alternative access for some types of freight such as perishable goods.

Improved connections between Geelong, Ballarat and Bendigo (via Maryborough and Castlemaine) were investigated through the Rail Revival Study (Public Transport Victoria, 2013). The study recommended a staged approach to the improvement of public transport services with a restructure of coach services proposed in the short term. These services would encourage increased commuter usage, as well as provide a social and tourist connection for the region.

In planning for the future, the study also identified the following land use and planning opportunities to preserve railway stations and railway lines between Ballarat and Bendigo, via Maryborough and Castlemaine:

- In the short to medium term, lease currently disused station buildings along the railway corridor for public purposes. This would preserve the buildings for potential future railway purposes and encourage development around the railway stations to create a focal point for the local community.

- For the longer term, to support any future reactivation of rail services and the potential for higher line speeds between Ballarat, Maryborough and Castlemaine, land that may be required for future track realignments would need to be protected to ensure that the opportunity for future rail realignments is preserved.

Transport implementation opportunities for ensuring access and connectivity exist around:

- linking the region to international gateways, ports, state capitals and other regional cities
- intra-regional connections such as regional city urban bus networks, including hinterland and surrounding small communities
- aligning the public transport network to better service demand
- accessibility for people of all ages and abilities to public transport
- improved commuter facilities at railway stations as patronage grows
- improved intra-town commuter links such as cycle paths.



Cycling, Lake Weeroona, Bendigo

Provide a safe, reliable and resilient network

Bendigo provides higher order services and facilities to the Loddon Mallee South region and beyond. For example, upgrades to Bendigo Hospital may result in more people within and outside the Loddon Mallee South region travelling to Bendigo instead of Melbourne to access healthcare services. Therefore, it will be important to plan accessible and appropriate transport connections to improve linkages throughout the region and beyond. It will also be important to ensure the network can withstand major disruption.

Transport implementation opportunities for providing a safe, reliable and resilient network exist around:

- maintenance of rail and road networks
- contingency plans for major disruptions such as those due to flood or bushfire
- increased track capacity to improve reliability and reduce delays
- identify and promote safety improvements.



Calder Freeway, Mount Alexander Shire

Consider technological advancements in the transport provision mix

The Loddon Mallee South region already has a strong service sector covering health, education and finance industries. This economic base is likely to continue developing. However, technology will be crucial to the development of the service sector economy to help provide new and improved services.

The rollout of the National Broadband Network may have a significant impact in this regard. It may mean that work patterns change, with greater numbers of people working flexibly using new technology, for example, working from home full or part-time, which in turn could reduce the need for daily travel. The health and education sectors are leading the way in using this technology for online courses and rehabilitation of patients. Into the future there could be opportunities to enhance and make use of new technologies.

Transport implementation opportunities through technological advancements could include:

- National Broadband Network
- increased use of mobile electronic devices
- alternative fuelled vehicles and new vehicle designs
- advanced transport network planning tools.

Ensure amenity and useability

The Loddon Mallee South transport network is used by a variety of people for both business and pleasure. Ensuring the network is maintained in a safe and useable condition will be important. This will be necessary to support a more diverse economy and to access tourism products and opportunities such as those in the goldfields area, for example, supporting the use and expansion of rail trails by improving connections between and access to trails.

Transport implementation opportunities for ensuring amenity and useability could include:

- tourist routes for all users, including cyclists
- facilities such as wayside rest areas, signage and information hubs
- marketing such as package tours for day trips.

Develop and protect freight and logistics precincts

Potential for freight and logistics precincts in the region exist at the proposed business park in Marong and in Maryborough. These sites may attract new industries and create the need to review transport requirements to provide efficient and effective freight movements to ports, airports and markets not only in Melbourne but also throughout the state and interstate.

A major upgrade of Bendigo Airport is being considered with a planning scheme amendment being lodged to assist with the land use aspect of future development. The airport currently caters for emergency and medical air services. However, it has the potential to provide new freight and passenger services, and house a business park that would create employment opportunities.

Transport implementation opportunities for developing freight and logistics precincts could include:

- airports
- a potential intermodal freight terminal such as an inland port
- activity-specific centres such as distribution warehouses or processing plants.

Investigate and implement efficient and sustainable ways to facilitate transport of products between producers and markets

Understanding freight movements and transport supply chain networks will be important into the future as the economy diversifies and the types of commodities being carried potentially changes. Changes to fleet characteristics may also mean that small local roads are not able to cope with increasing numbers of higher volume trucks taking products to processing or export locations. Therefore key transport spines within the region will require good connections not only with Melbourne, but also with other parts of the state and interstate.

Transport implementation opportunities to support efficient supply chains exist around:

- building evidence to support enhancements to the freight network such as by industry input
- understanding transport supply chain networks, movements and modes between the farm-gate, market, distribution centre and gateways
- technology advancements such as smart roads networking planning
- the impact of changing vehicle and fleet characteristics and regulations on rural roads, for example, local roads may not be fit for purpose for increasingly larger vehicles.

Future transport land use actions

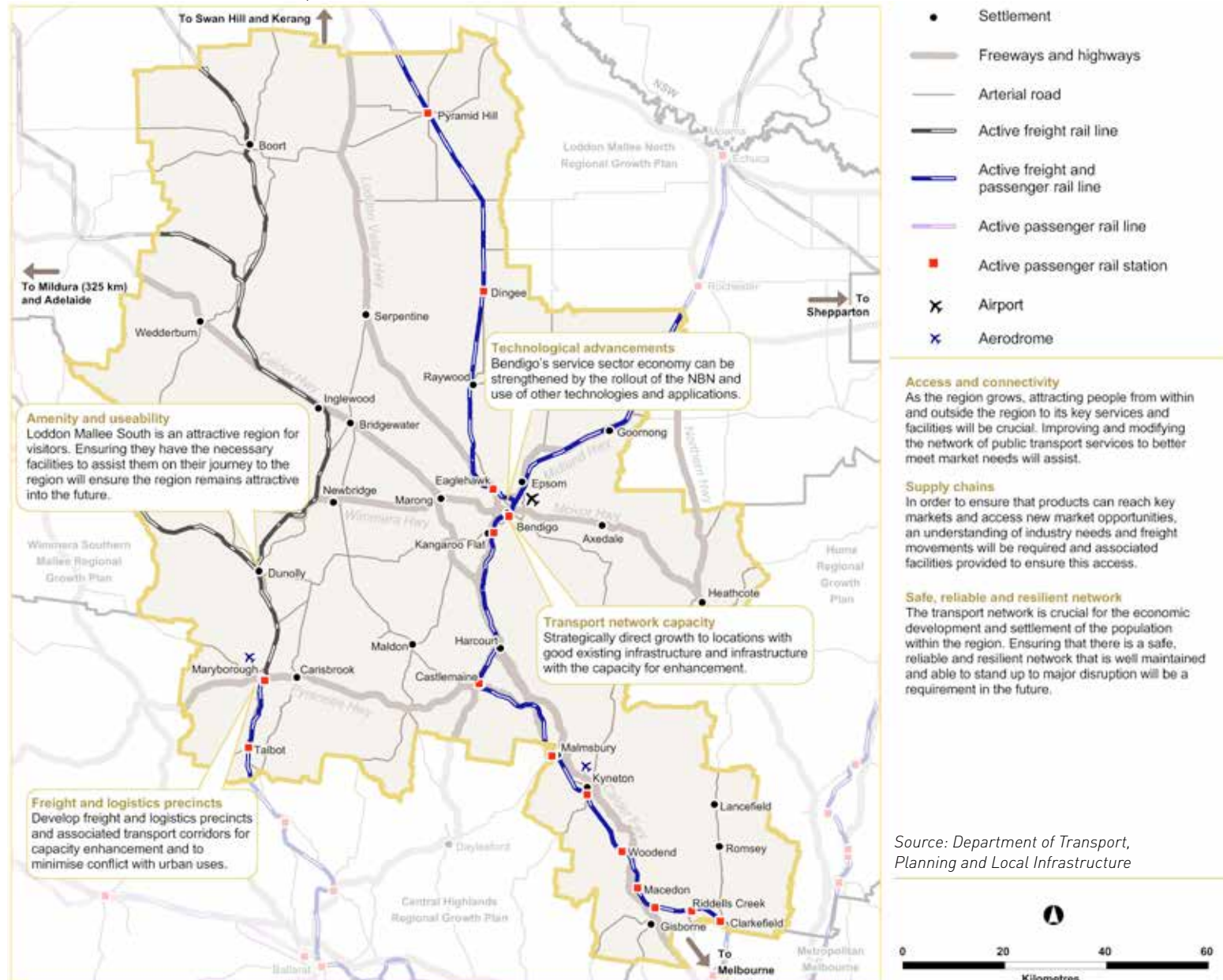
- Ensure the current and future operation of major infrastructure of national, state or regional significance is not adversely affected by urban development
- Set aside land to preserve road and rail projects using zoning and overlays
- Maximise the strategic position of the transport network to encourage settlement and economic growth along existing transport infrastructure corridors
- Use this plan to support infrastructure projects to assist in managing growth

Map 16 shows future directions for transport in the region.



Gisborne Railway Station, Macedon Ranges Shire

Map 16: Future directions for transport





The Old Post Office Building, Bendigo

PART D | REGIONAL GROWTH PLAN

This part of the Loddon Mallee South Regional Growth Plan brings together all of the elements of the regional land use framework (economy, environment and landscape, settlement and regional infrastructure) to identify a way forward for growth and change over the next 30 years. This plan provides direction on where future growth should occur and has been informed by advice, analysis, investigation and community feedback.

15. Future directions for regional growth

Key directions for growth are shown on Map 1 – Future growth framework in this section. This map provides a snapshot of the future growth directions for the Loddon Mallee South region, and is supported by more detailed directions and actions contained in Part C of this plan.

The future directions and land use actions in this plan respond to the drivers and challenges for growth, as well as the vision and principles articulated in Part B of this plan. Map 1 draws together this information.

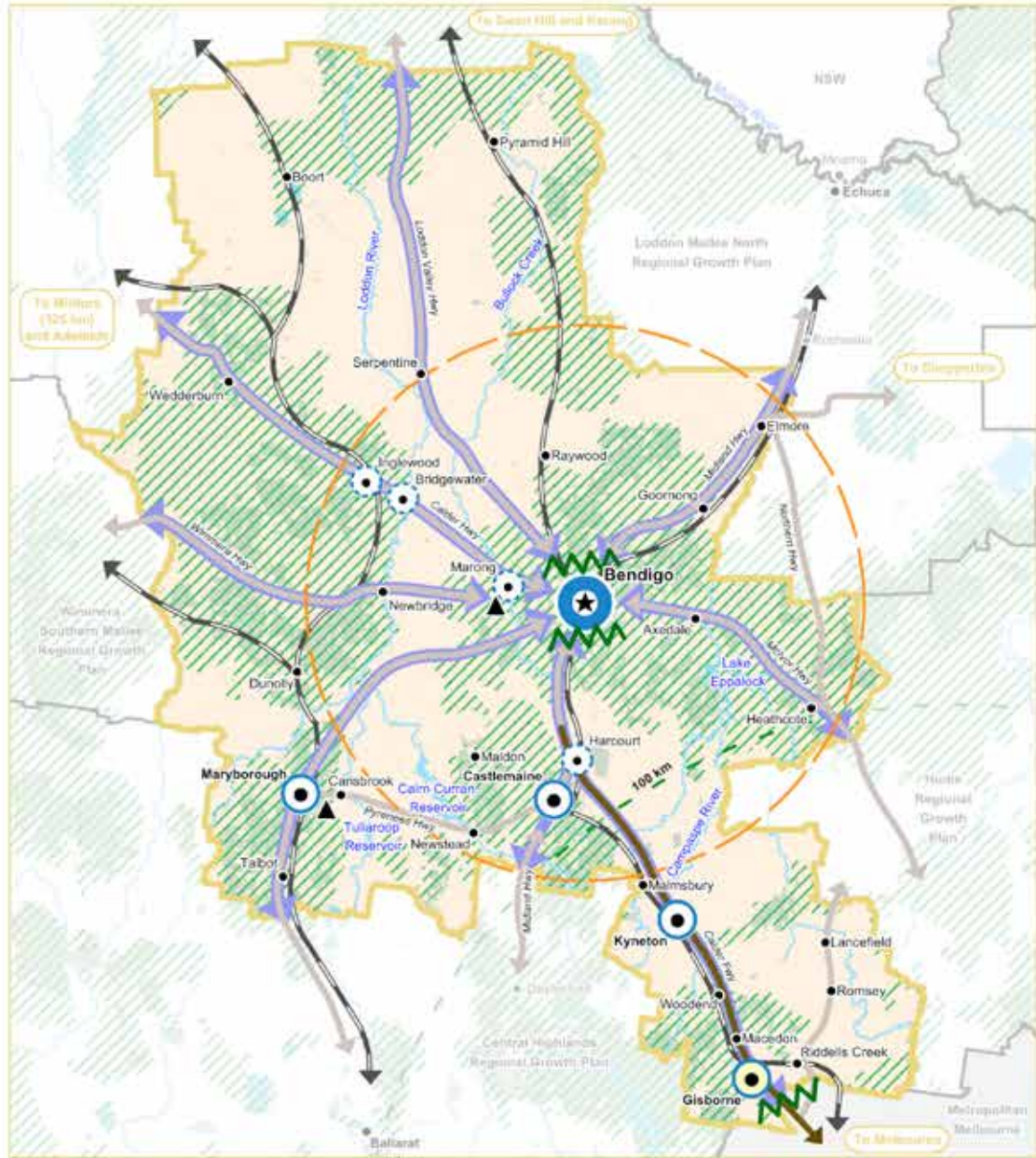
Principles	Future Directions	Rationale	How
<p>1. Manage our population growth and settlements</p> <p>Sustainable growth is encouraged to enhance the integrated network of settlements that characterise our region. Our settlements will continue to be attractive places to live, with high amenity and access to services.</p>	<ul style="list-style-type: none"> Focus growth to the region’s existing settlements with capacity for growth Reinforce the role of Bendigo as the regional city, offering a range of employment and services as an alternative to Melbourne Target new growth to settlements including Bendigo, Maryborough, Castlemaine, Gisborne and Kyneton Plan for settlement growth away from areas of high risk from natural hazards such as bushfire and flood Settlement planning decisions should prioritise human life and respond to the following principles with regard to bushfire risk management: <ul style="list-style-type: none"> direct development to locations of lower bushfire risk carefully consider development in locations where there is significant bushfire risk that cannot be avoided avoid development in locations of extreme bushfire risk avoid development in areas where planned bushfire protection measures may be incompatible with other environmental objectives Manage settlement growth to limit the impact on agricultural productivity, natural resources and ecological values Value the region’s unique and connected communities 	<p>If planned well, settlement growth will be distributed to the places best suited to accommodate it, stimulating growth in locations that will support the economy and the long-term sustainability of the region.</p>	<p>Refer to Maps 1, 9, 10, 11, 12, 13, 14, 15 and 16 that provide a framework for future growth in the Loddon Mallee South region, including settlement directions for the regional city of Bendigo and regional centres and towns, and for the infrastructure needed to support growth.</p>

Principles	Future Directions	Rationale	How
<p>2. Strengthen our communities, especially in our small towns</p> <p>All settlements, including small towns and villages, play an essential role in the function and character of the region. Many small towns have significant historic or landscape value and offer an alternative lifestyle from the more urbanised and larger centres. Supporting the diversification of the economy of these and other small towns is important, as is maintaining social infrastructure and services.</p>	<ul style="list-style-type: none"> • Support the ongoing role of the region’s small towns and settlements • Acknowledge the non-urban population’s contribution to the region • Invest in liveability, infrastructure and urban design initiatives to make the region’s towns great places to live • Build community connectedness and reduce areas of social disadvantage • Build a skilled and adaptable workforce by attracting skilled workers and providing access to high quality education and training opportunities, which provide pathways to employment • Plan for the facilities and infrastructure needed for delivery of education and training to support growth 	<p>Current and future population change and composition and location disadvantage will affect our towns and small settlements. Some of our towns will face pressure on their existing services and will need to plan for new and additional services. Populations in other towns and smaller settlements that are facing a decrease in population require creative solutions to ensure access to social infrastructure to support community participation, health and wellbeing.</p>	<p>Refer to Maps 1, 9, 15 and 16 that highlight the role and function of the Loddon Mallee South region’s communities, especially its small towns, and the infrastructure needed to support growth and change.</p>
<p>3. Strengthen and diversify our economy</p> <p>Ensuring access to diverse employment, recreation, retail and cultural activities will develop the Loddon Mallee South region as a preferred destination and self-sustaining region. Strategic opportunities for the growth of the region’s economic base, including agricultural diversification, the minerals industry and new industries, will also be facilitated.</p>	<ul style="list-style-type: none"> • Enable residents to work and participate in the region by continuing to expand the region’s diverse economy • Leverage greater employment and investment outcomes from growth sectors such as health, education and professional services • Develop employment areas that are located, serviced and sited to take advantage of water, infrastructure, transport and energy connections • Support and develop emerging and potential growth sectors such as tourism, renewable energy, resource recovery and other green industries 	<p>The planning and provision of infrastructure will ensure access to services for all people and enhance social and economic wellbeing and participation.</p>	<p>Refer to Maps 1, 6, 7 and 8 that outline future directions for the economy, for rural production and for managing and leveraging off the region’s significant environmental assets.</p>

Principles	Future Directions	Rationale	How
<p>4. Improve our infrastructure</p> <p>Good infrastructure enables our communities to remain connected, sustainable and vibrant. Planning for growth is undertaken alongside planning and development in infrastructure to enable economic and settlement growth in strategic locations.</p>	<ul style="list-style-type: none"> • Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement • Provide adequate waste and resource recovery infrastructure and services to support new developments and population growth in the region • Ensure that the current and future operation of major infrastructure of state and regional significance, including highways, railways, airports, communications networks and energy generation and distribution systems, is not adversely affected by urban development in adjacent areas • Prioritise infrastructure that connects the region's communities through physical and electronic means, such as transport and internet access • Strategically renew, maintain and develop infrastructure to maximise opportunities and services to meet anticipated need • Protect water quality and quantity • Provide for the future of waste management and resource recovery 	<p>The provision of appropriate infrastructure is a key enabler of population and economic growth. Strategically locating urban growth to locations well served by existing infrastructure helps facilitate growth. Land use planning that protects existing transport precincts and corridors supports economic growth and minimises conflict of land uses.</p>	<p>Refer to Maps 1, 15 and 16 that highlight the region's infrastructure assets and opportunities, and provide future directions for infrastructure required to support regional growth.</p>
<p>5. Improve education and training outcomes</p> <p>Whole-of-life education and training is critical to overall health and wellbeing. Educational attainment brings personal, social and economic benefits to individuals and communities. It also creates increased access to employment for individuals, helps address regional skill shortages and assists in strengthening and diversifying the economy.</p>	<ul style="list-style-type: none"> • Build a skilled and adaptable workforce by attracting skilled workers and by providing access to high quality education and training opportunities, which provide pathways to employment • Plan for the facilities and infrastructure needed for delivery of education and training to support growth 	<p>Workforce skills gaps have been identified in key economic growth areas including construction, education, transport and logistics, and health. These gaps suggest the region should better integrate secondary school and post-secondary education with regional economic development. Ongoing training is also required to ensure workers' skills continue to meet the changing needs of industry and are positioned to take advantage of any emerging industry opportunities.</p>	<p>Refer to Map 15 that provides future infrastructure directions for the development of local government land and infrastructure strategies to support future development of existing and new education campuses and other social infrastructure needed for a skilled and adaptable workforce.</p>


Principles	Future Directions	Rationale	How
<p>6. Protect and enhance our natural and built environment</p> <p>Settlement growth and development will occur in sympathy with environmental and heritage assets, for example, native habitat, waterways, wetlands, soil health, water quality and Aboriginal and post-contact heritage. Celebrating our natural assets contributes to the liveability of the region and attracts visitors as well as supports community wellbeing.</p>	<ul style="list-style-type: none"> • Protect and improve the condition of the region’s important environmental assets such as the forests, wetlands and rivers • Protect identified visually important landscapes, and cultural and built heritage places • Plan for settlement growth to occur in locations that avoid areas of high risk from natural hazards such as bushfire and flood • Manage settlement growth to limit the impact on agricultural productivity, natural resources and environmental assets • Maintain the non-urban breaks between settlements • Minimise the impacts of land use change and development on areas with significant environmental assets 	<p>Growth of our region will capitalise on environmental and heritage assets through advancing tourism, settlement and economic diversification opportunities, while improving environmental assets, where possible.</p>	<p>Refer to Maps 1, 5, 8 and 9 that provide direction for protecting and enhancing the region’s environmental assets and heritage features, and managing natural hazards in order to support regional growth through diversification, tourism and technological advancement.</p>
<p>7. Ensure our food, water and energy security</p> <p>Our farming and food production areas will be strengthened to optimise opportunities for the production of energy. Protection of our water sources and infrastructure is important to sustain growth for our urban and rural areas.</p>	<ul style="list-style-type: none"> • Facilitate ongoing agricultural productivity and investment in high value agriculture • Support ongoing adaptation and flexibility for the agricultural sector • Facilitate ongoing agricultural productivity and new opportunities that respond to the potential impacts of climate change • Support the sustainable use of rural land, including the development of regional catchment strategies and other suitable tools • Encourage and facilitate development in renewable energy, waste to energy, carbon sequestration and other new energy opportunities • Protect water quality and quantity 	<p>Agriculture provides employment and exports for the region (particularly for Loddon Shire). Beyond the economic significance, the continued viability of agricultural areas is critical to land and environmental management, social wellbeing for rural communities and an important aspect of our region’s landscape. With the climate and economy changing, the ability of farming communities and practices to adapt will be critical to a sustainable future. Support for the transitioning of towns from changes to irrigation through investments and diversification of economies is necessary.</p>	<p>Refer to Maps 1, 6, 7 and 8 that provide directions for the region’s future in farming and food production, and as an energy provider, in response to a changing climate and ongoing adaptation of the region’s economy.</p>
<p>8. Collaborate to achieve our region’s goals</p>	<ul style="list-style-type: none"> • Utilise existing regional and local networks, for example, Regional Development Australia, the Regional Management Forum and local community planning networks, and other suitable forums to share information, identify agency leads and collaborate on regional projects 	<p>There are existing groups and forums that can be utilised to facilitate actions and further work identified in this plan. Leveraging from these forums will ensure implementation and ongoing monitoring of performance.</p>	<p>Refer to Part E that outlines proposed actions to deliver this plan through collaboration between regional partners, industry and the community.</p>

Map 1: Future growth framework



SETTLEMENT NETWORK


-  **Bendigo - Regional city - Significant growth**
Promote growth of Bendigo as the regional city. Significant population growth with major residential development. It will be the major population and economic growth hub for the region.
-  **Regional centres/towns - Manage and support growth**
Manage and support growth in these settlements, reinforcing the network of communities within the region. These settlements will be employment and service hubs. Growth consistent with structure plans, comprising infill and some targeted expansion.
-  **Encourage sustainable growth in Bendigo's hinterland towns**
Potential growth and expansion to capitalise on excellent access to Bendigo. Facilitate the growth of Marong as a residential and industrial/business location.
-  **Designated identified growth centre in Plan Melbourne**
Plan Melbourne (Chapter 6 – State of Cities) identifies Gisborne as a peri-urban town with potential to attract housing and population growth out of Melbourne.
-  Towns and rural centres

-  Maintain settlement break
-  Areas within 100 km of central Melbourne
-  Bendigo hinterland





CONNECTIVITY

-  Strategically direct growth to locations with good existing infrastructure and infrastructure with the capacity for enhancement.
-  Explore further opportunities to develop freight-related activities in Marong and Maryborough.
- Maintain and strengthen key transport networks, both road and rail for the transporting of freight and people.
-  Freeway
-  Road
-  Rail

ECONOMIC

-  Facilitate ongoing agricultural productivity and new opportunities that respond to climate change through ongoing adaptation and flexibility.

ENVIRONMENT

-  Protect and improve the condition of the region's high value terrestrial habitat.
-  Public land
-  Lakes
-  Rivers

Source: Department of Transport, Planning and Local Infrastructure





Car rally, Bendigo

PART E | DELIVERING REGIONAL GROWTH

16. Implementation

Future directions

- Engage in regional development and thinking – decisions should not only consider the impact on one place, but the region as a whole
- Utilise our people, networks and strengths to achieve our region's goals

16.1 Planning schemes

The Loddon Mallee South Regional Growth Plan will have status as part of the Victoria Planning Provisions and planning schemes. This will give the plan's strategic directions status in each local government area's planning scheme.

An Advisory Committee has been appointed to conduct a review of the State Planning Policy Framework in order to deliver regional growth plans and other major planning policies, such as the metropolitan planning strategy, *Plan Melbourne*.

The Loddon Mallee South region councils will work in partnership with State Government to facilitate the required planning scheme amendment process and content as an immediate priority.

The plan will guide and inform future strategic planning across the Loddon Mallee South region, including future reviews of each council's Municipal Strategic Statement. The plan will help provide justification for future planning scheme amendments that are consistent with the plan.

The plan will provide local councils and agencies in the region with a clearer regional land use context to inform and influence future local strategic planning, planning scheme amendments and local decisions. As the plan indicates preferred locations for future urban development and valued areas for protection, it can be used as a high level context for regional and local infrastructure planning and investment.

The plan establishes a context for growth and settlement planning that can inform and assist in frameworks for town and city growth plans and infrastructure requirements. This more detailed level of planning will continue in partnership between local and state planning authorities. Careful monitoring of urban projects, land development and population change during the life of this plan will be established to assist its delivery.

16.2 Links to Regional Strategic Plan implementation

The plan is closely aligned with the Loddon Mallee Strategic Plan – Southern Region 2010. Implementation of this plan will also be considered in relation to other ongoing work to implement the strategic directions of the Strategic Plan 2010. This will strengthen the capacity for achieving shared objectives and targeting efforts to secure endorsement and funding for the highest priorities in the region.

Other related and relevant work includes the Regional Economic Outlook and Profiles, which have been developed for the region, and the work being undertaken on regional cities by Regional Development Victoria. Further work is being undertaken to develop economic assessment tools that will help identify key economic opportunities for the region. As identified in this plan, the development of a Loddon Mallee South Economic Development Strategy is a priority.

Further, opportunities for implementation of key directions and actions expressed in this plan will be explored with the Loddon Mallee Regional Management Forum and the Loddon Mallee Regional Development Australia group. The Regional Management Forum and Regional Development Australia group are key stakeholders in overseeing the ongoing development and implementation of the Strategic Plan 2010. It is appropriate to facilitate and ensure alignment between the regional growth plan and the regional strategic plan in order to promote outcomes that are consistent with common directions expressed in each plan.

Possible regional governance arrangements to promote integrated planning and delivery of agreed future land use include actions partnering and integrating with an existing cross-government group that has alignment with the focus of the regional growth plan or establishing a new cross-government stakeholder group that has links to an existing regional planning governance structure.

16.3 A plan for implementation of actions

Implementation of this plan is critical to achieve its strategic directions for growth and change. An implementation plan will ensure that the region is able to respond to key regional challenges and strategic directions of the plan relating to infrastructure provision, key asset protection and management of future growth.

Short-term implementation priorities include:

- amending planning schemes to include key elements of this plan
- developing a more detailed implementation plan focusing on infrastructure planning to identify and guide the timing of future planning and regional infrastructure investment priorities
- where required, facilitating further detailed work and investigations as identified in this plan.

Table 4 sets out actions identified in the development of this plan that will further support delivery of the plan's strategic directions.



Castlemaine, Mount Alexander Shire

Table 4: Land use actions

Recommended actions	Reference to future direction, land use strategy, action or policy (Part C)
Regional economy	
<ul style="list-style-type: none"> • Support the growth of Bendigo as the regional city and major employment and services hub • Ensure there is adequate zoned and serviced commercial and industrial land for employment in the regional city and centres as sub-regional hubs • Accelerate the development of the Marong Business Park as a key new location for industry and business • Achieve designation of Castlemaine Diggings National Heritage Park as a World Heritage place to underpin tourism • Identify emerging agribusinesses and location clusters including the equine industry, and intensive animal industries such as cattle feed lots, piggeries and poultry farms • Identify agribusiness and tourism clusters in the region and implement appropriate land use measures to facilitate agricultural tourism activities through the application of the reformed zones • Develop a regional approach to small lot development using the reformed rural zones implementation • Work cooperatively with catchment management authorities to develop a Carbon Action Plan 	<p>Section 11.2 Working in the Loddon Mallee South region</p> <p>Section 11.3 Agriculture</p>
Environment and heritage	
<ul style="list-style-type: none"> • Undertake flood mapping and implement flood overlays into planning schemes in the City of Greater Bendigo and Loddon, Mount Alexander and Central Goldfields shires • Monitor, assess and act on the potential impacts and opportunities of climate change across the region and collaborate with other climate change adaptation planning activities, such as the 'Creating a climate-resilient Southern Loddon Mallee project', to inform future land use planning decisions • Undertake a domestic wastewater management pilot study regarding the impact of activity and development on open potable water supplies • Encourage tourism opportunities, in appropriate locations, around cultural heritage and natural environments • Support the sustainable use of rural land, including the development of regional catchment strategies and other suitable tools 	<p>Section 12.3 Approach to our settlement planning and environmental management</p>

Recommended actions	Reference to future direction, land use strategy, action or policy (Part C)
Living in the region	
<p>Bendigo – the regional city</p> <ul style="list-style-type: none"> • Prioritise the implementation of the Marong Plan and Marong Business Park development • Support the development of the Bendigo Integrated Transport and Land Use Strategy and associated land use recommendations • Support the Bendigo Residential Development Strategy (2004) review, and resulting land use planning initiatives and changes • Support the Bendigo Hospital precinct planning project, and housing and mixed use planning and developments within the precinct • Facilitate a student accommodation demonstration project in the city 	Section 13.2 Bendigo the regional city
<p>Enhance economic activity, especially in the following locations:</p> <ul style="list-style-type: none"> • Bendigo Central Business District including the Gillies and Crystal Ice sites • Bendigo railway station precinct • Bendigo Hospital precinct • Latrobe University precinct • Bendigo Theatre precinct 	Section 13.2 Bendigo the regional city
<p>Growth of regional centres/towns and Bendigo’s hinterland</p> <ul style="list-style-type: none"> • Support the current structure planning for Kyneton, Woodend and Riddells Creek • Investigate land supply opportunities and impediments to accommodate further growth in Castlemaine • Undertake structure planning and programs to promote the growth of Maryborough • Commence investigation projects for the growth of Bridgewater, Inglewood and Harcourt • Support the sustainability of small towns through investment and diversification of their economies and appropriate flexible zoning provisions 	<p>Section 13.3 Growth of regional centres and towns</p> <p>Section 13.4 Growth of Bendigo’s hinterland towns</p>
<p>Social inclusion</p> <ul style="list-style-type: none"> • Coordinate government agencies’ land and infrastructure strategies to align the provision of public and community facilities, including existing and new education facilities 	Section 13.5 Social inclusion

Recommended actions	Reference to future direction, land use strategy, action or policy (Part C)
Regional infrastructure	
<ul style="list-style-type: none"> • Agree on a target for regional energy generation • Support the provision of facilities that efficiently manage the region’s solid waste • Initiate a study to gain an understanding of the economic and social opportunities provided by improved telecommunications, and the potential land use implications • Support investigation of sewerage for townships including Talbot and Newbridge • Support ongoing investment in water infrastructure and management of water resources to enhance security and efficiency of water supply to irrigators, farms and urban areas • Support the Harcourt modernisation project to replace the existing concrete and earthen gravity channel system with a pressurised pipeline reticulation network • Support reticulated water mains renewals and replacement for New Gisborne, Woodend, Mount Macedon and Riddells Creek • Support the development of the New Bendigo Hospital to provide additional crucial facilities in preparation for growth in the region • Support upgrades to Bendigo Airport to improve access and infrastructure to support emergency services • Support the NBN rollout • Improve water quality for Bridgewater, Laanecoorie, Tarnagulla, Inglewood, Dunolly and Bealiba • Improve transport connections between Geelong, Ballarat and Bendigo (via Maryborough and Castlemaine) • Undertake infrastructure planning as part of the structure plans for Harcourt, Bridgewater, Heathcote and Inglewood • Investigate the extension of reticulated gas 	Section 14.1 Water, energy and utilities
<ul style="list-style-type: none"> • Investigate extended public transport networks from towns in Bendigo’s hinterland to Bendigo City • Support the capacity and functioning of the transport network through maintenance and upgrade works that facilitate increased transport movements and ensure safety 	Section 14.2 Transport networks

A number of issues have been identified during the development of this plan that require further detailed planning and investigation to support implementation. Many of these are identified in Section 14 Regional infrastructure. In addition, the following projects are identified as region-wide priorities for further investigation and facilitation; not all are the responsibility of this plan to implement. Some of these projects will require funding, state agency collaboration and local council support. The outcomes of these projects will assist in the delivery of many actions identified in this plan.



Maryborough, Central Goldfields Shire

These projects include:

- preparation of a Loddon Mallee Economic Development Strategy
- developing a regional approach to small lot development, using the reformed rural zones
- preparation of a combined food, freight and energy strategy for the region, classifying strategically important agricultural land, land use clusters and links to processing and manufacturing and freight opportunities in the region. This strategy will inform many of the actions identified for rural areas and transport
- working cooperatively with the North Central Catchment Management Authority to develop a Carbon Action Plan that includes the majority of the Loddon Mallee South region. This will aid in the delivery of actions such as carbon farming, on-farm bioenergy and renewable energy initiatives
- supporting the 'Creating a climate resilient Southern Loddon Mallee project'
- facilitating a pilot catchment study regarding the impact of activity and development on open potable water supplies
- developing an e-strategy for the region to better understand economic and land use implications and potential change.

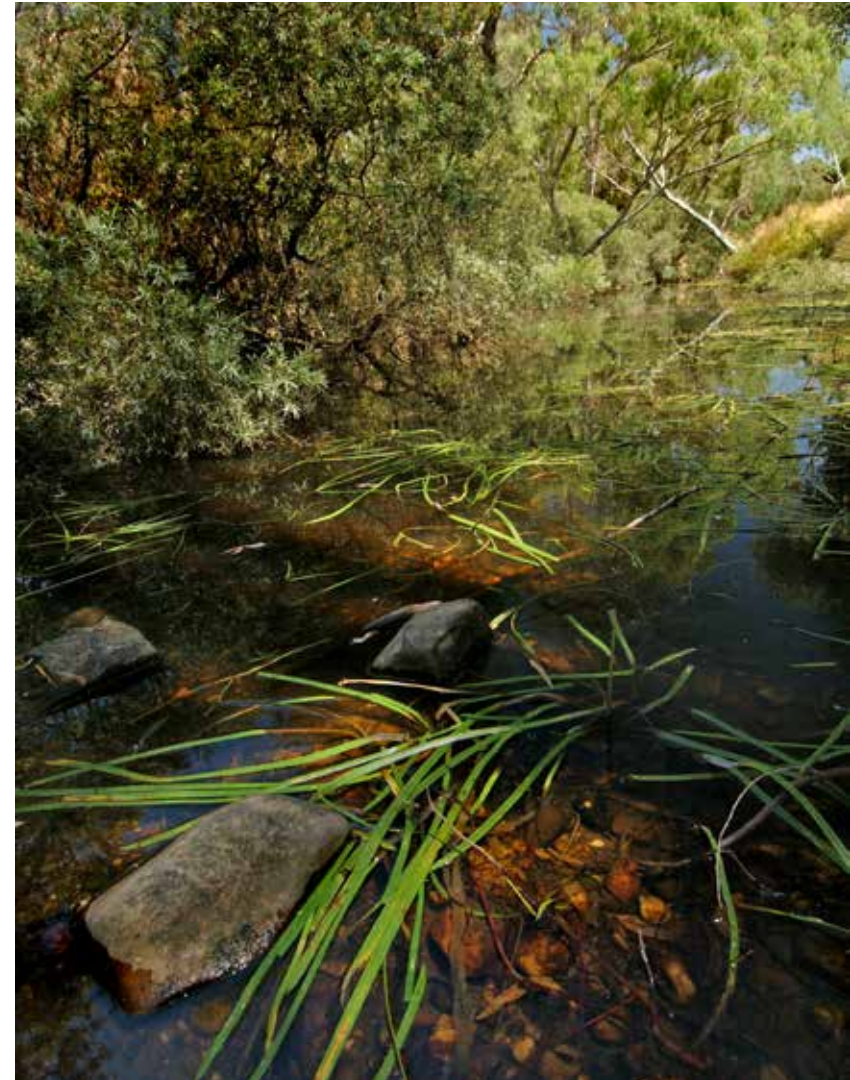
16.4 Review and performance

This plan sets out a growth framework for the next 30 years. It is impossible to anticipate exactly what will occur in the future, and there may be substantial 'game changers' that dramatically influence aspects of the Loddon Mallee South economy and its settlements. Significant shifts in policy, major investment, natural disasters and the impact of climate change all have the capacity to impact upon the region.

The plan is intended to be a living and adaptable plan, able to respond to unpredictable events and new data and information as it arises, including information from state or regional strategies and programs. The plan is to be reviewed on a four- to five-year cycle. Any review process will involve broad community and stakeholder engagement.

It is intended that this plan will inform any subsequent review of the Strategic Plan 2010.

Implementation of this plan will be integrated with the overall implementation of the Strategic Plan 2010 and included in the performance monitoring framework already established or being established in future for the implementation of the Strategic Plan 2010. This framework includes an assessment of performance and project progress and sets out performance measures for the key directions of the Strategic Plan 2010.



Loddon River, Loddon Shire

16.5 Implementation summary

The key implementation actions, priorities, partners and responsibilities are summarised below:

Table 5: Key implementation actions, priorities, partners and responsibilities

Action	Priority	Timing	Lead responsibility	Key partners
1. Planning scheme implementation of regional growth plan	High	2013-2014	Department of Transport, Planning and Local Infrastructure	Loddon Mallee South region councils
2. Implementation Plan	High	2014-2015	Loddon Mallee South region lead governance entity	Loddon Mallee South Regional Growth Plan project partners
3. Loddon Mallee South region Municipal Strategic Statement reviews	Medium	To coincide with Municipal Strategic Statement review cycles	Loddon Mallee South region councils	Department of Transport, Planning and Local Infrastructure
4. Review	Medium	2016-2018	Loddon Mallee South region lead governance entity	Loddon Mallee South Regional Growth Plan project partners



View Street, Bendigo

GLOSSARY

Aboriginal cultural heritage: means Aboriginal places, Aboriginal objects and Aboriginal human remains. They tell the story of Aboriginal use and occupation of land. An Aboriginal place can be an area of land or water, a natural feature, formation or landscape, an archaeological site, as well as a building or structure. Aboriginal cultural heritage also includes intangible places where there may be no physical evidence of past cultural activities. These include places of spiritual or ceremonial significance, places where traditional plant or mineral resources occur, or trade and travel routes.

Bioenergy: energy generated from organic matter, such as agricultural waste.

Biofuels: biofuels are liquid or gaseous fuels derived from biomass.

Biomass: biomass includes agricultural residues and waste products, forestry residues, organic wastes, purpose-grown energy crops, woody weeds, algae and biodegradable municipal waste streams.

Carbon farming: a method of allowing farmers and land managers to earn carbon credits by storing carbon or reducing greenhouse gas emissions on the land.

Central Business District (CBD): the area comprising the core commercial, civic and community functions of a town.

Cultural heritage: captures both Aboriginal cultural heritage and historic heritage.

Declared Water Supply Catchments: catchment areas as proclaimed under the *Soil Conservation and Land Utilization Act 1958* in conjunction with the *Land Conservation Act 1970* and subsequently incorporated into the *Catchment and Land Protection Act 1994*.

Domestic wastewater management plan: a document seeking to reduce the potential health and environmental impacts of on-site wastewater disposal.

Earth resources: these comprise minerals, petroleum, gas, extractive and geothermal industries.

Ecologically Sustainable Development: using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life now and in the future can be increased.

Environmental asset: a tangible bio-physical element of the environment, such as terrestrial habitat, waterways, significant landscapes and soils.

Environmental value: the attributes of an environmental asset that make it valuable or important, based on environmental, social or economic values.

Extractive Industry Interest Area (EIIA): identified areas around major centres in Victoria where it is possible that a quarry could be placed within defined constraints.

Food bowl: the Greater Shepparton, Moira, Swan Hill, Campaspe, Gannawarra, Mildura and Loddon municipalities all form part of Victoria's food bowl, which specialises in irrigation-based industries including dairy, horticulture and viticulture, as well as dry land farming operations and agriculture-related industries, such as food processing, packaging and transport.

Freight and logistics precincts: places where large volumes of freight are received, stored and dispatched. These precincts may support port, airport or rail and road inter-modal terminals and may include manufacturing activity, warehouses and distribution centres within the broader precinct of complementary freight and freight-related activities.

Goulburn-Murray Water Connections Project: formerly known as Northern Victoria Irrigation Renewal Project (NVIRP), it is a \$2 billion irrigation modernisation project in Victoria's food bowl.

Greenfield land: non-urban land designated for future urban development.

Higher order services: services that are only provided in a limited number of locations and have a large catchment area, such as a university or department store.

Historic heritage: refers to the fabric of our past that we value today and includes archaeological sites, buildings and precincts, structures, gardens, trees, cemeteries, cultural landscapes, shipwrecks and significant objects and artefacts.

Housing diversity: the provision of a range of different housing types to suit different ages, lifestyles and incomes.

Industry or agricultural clusters: geographic concentration of businesses and activities that relate to each other or work together.

Infill development: the development of additional dwellings in established urban areas.

Intensive agriculture: land used to intensively produce agricultural products through ventures such as poultry farms, piggeries, feedlots, aquaculture, hydroponics, greenhouses and glasshouses. This includes 'intensive animal husbandry' and intensive 'crop raising' as defined in planning schemes.

Mixed use development: a development that integrates two or more uses, such as housing and retail.

National Broadband Network (NBN): high-speed internet network being provided across Australia.

Natural hazard: a naturally occurring source of potential harm or a situation with the potential to cause loss, for example bushfire or flood.

Natural resources: naturally occurring commodities such as oil, gas, sand and stone, minerals, fisheries, timber or places of solar or geothermal energy potential.

Nature-based tourism: any activity that relies on experiences directly related to natural attractions including ecotourism, adventure tourism, wildlife tourism and extractive tourism, for example, fishing or gold panning.

Overlays: planning scheme provisions generally related to a particular issue, such as heritage or flood.

Planning scheme: policies and provisions for the use, development and protection of land, prepared by councils or the Minister for Planning.

Regional catchment strategy: a document setting out the management of natural resources, such as rivers, wetlands, terrestrial habitat and agricultural land.

Regional cities: the 10 largest cities outside metropolitan Melbourne (Ballarat, Bendigo, Geelong, Horsham, Latrobe, Mildura, Shepparton, Warrnambool, Wangaratta and Wodonga). The relevant municipalities are represented by the Regional Cities Victoria group and together they advocate a whole-of-government approach to delivering services and infrastructure.

Registered Aboriginal Party: represent Aboriginal people in the management and protection of Aboriginal cultural heritage.

Rural land use: a broad term representing the use of land outside urban areas, and includes activities such as agriculture, rural living, forestry and extractive industry.

Rural living: land in a rural setting that is used and developed for dwellings that are not primarily associated with agriculture.

Social infrastructure: includes community facilities, services, and networks that help communities meet their social needs and maximise their potential wellbeing such as, sports and recreation facilities, schools and hospitals.

Terrestrial habitats: combinations of biological and physical features of the landscape (including native vegetation, fallen timber and litter, soil, rocks, etc) that enable populations of each native plant or animal species (or group of species) to live and reproduce. Features can be considered at the site scale, for example, the food sources used by individuals, and the landscape scale, for example, the linkages used for movement between areas, or the refuges used to cope with disturbance events.

